

# **Measuring Efficiency of Web Presence of Cultural Information**

Thesis submitted in partial fulfillment of the requirements for the award of  
degree of

**Master of Engineering  
in  
Software Engineering**

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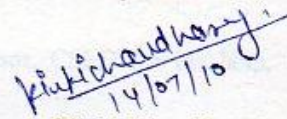


**COMPUTER SCIENCE AND ENGINEERING DEPARTMENT  
THAPAR UNIVERSITY, PATIALA – 147004  
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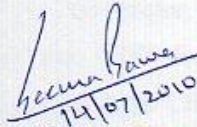
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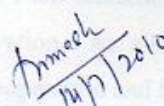
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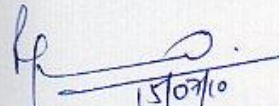
  
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## **Abstract**

Human Computer Interaction (HCI) is continuously evolving with time. Although the history of HCI is rich and complex, the major paradigms are Personal Computing, Cooperative Computing, Social Computing and now upcoming Cultural Computing. The history of HCI goes back to the 60s. It started from Man-Machine interaction and then moved to the Computer Mediated Interaction and Community Mediated Interaction. Social computing is all about Community Mediated Interaction and based on building communities but then the needs arises of understanding the underlying and almost unconscious cultural determinants. Human Computer Interaction is still in Social Computing phase but now over lapping with Cultural Computing. The unconscious Cultural determinants have strong influence on our way of thinking feeling and over all behavior.

Cultural Computing puts the focus on the significant areas of culture and that have long being underserved: the arts (without high/low distinction) the humanities (broadly speaking the study of all culture), and the blending and transformation of those domains with the science and technology. Culture Computing is basically promoting Culture through effective and efficient use of computing trends. This thesis focuses on the use of computing technology to promote Culture and Its impact on Culture with special focus on Indian Culture. In this work a conscious effort is being made to promote the strength of Indian Culture through Computing.

This thesis analysis the (cause and) effect of cultural changes on Computing to understand and describe the role of ‘Dynamics of Mind’ in ‘Cultural Computing’. The sources that are digitally available online carrying specific, scientific and spiritual knowledge of India are explored to enhance and expand the same. The findings are published in the form of a ‘Portal’ using an open source tool ‘Joomla’.

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### 1.1 Human Computer Interaction

HCI investigates and develops interactive products, systems or services that contain at least some computational power. Science as an activity is the concerted effort to understand, or to better understand, the natural world and how the natural world operates, with observable evidence as the basis of that understanding. It is done by investigating observable phenomena, and/or through experimenting that tries to simulate observable processes under controlled conditions.

The logic of modern science requires that observations or facts guarantee the validity of generalizations or theories. HCI is a discipline concerned with the design, evaluation and implementation of interactive systems for human use and with the study of relevant phenomena surrounding them ('context of use') [2].

The Human-Computer Interaction (HCI) community is diverse. Academics and practitioners from science, engineering, design or art contributing to its rapid development, but communication and cooperation between the different disciplines can be challenging at times. It seems obvious that the present state of affairs for the interdisciplinary field of HCI is in the explorative phase [3] though it may be able to move on to the paradigmatic phase in the future. This statement does not necessarily exclude the possibility that different research communities contributing to HCI are already in a paradigmatic, or even in a post-paradigmatic phase. More recently, at the turn of the century, HCI is about the Cultural computing paradigm.

In general all these new directions have some common properties:

- (1) The disappearing computer;
- (2) The ease of use and positive experience;
- (3) The building of communities.

The computer is no more the centre of interest, nor is it the focus of attention of the user. It is the running applications and the benefits and effects these have on the user that matter.

## **1.2 What is Culture?**

The word culture came from the Latin verb 'colere', to cultivate and the noun cultura. Culture is used today mainly with two meanings. The first one explained by Francis Bacon refers culture as a body of knowledge and manner acquired by an individual, while the second describes the shared customs, values and beliefs which characterize a given social group and are passed down from generation to generation.

Tylor (1994) describes the culture as 'complex whole which includes knowledge, belief, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society [4].

According to Kroeber and Kluckhohn (1994), culture is 'an abstraction from concrete behavior but is not itself behavior'.

Levi-Strauss (1977) opposes the particularity of culture to the universality of nature, believing that everything universal in man derives from the order of nature and is characterized by spontaneity while 'everything which is subject to a norm belongs to culture and presents the attributes to the relative and particular'.

### **1.2.1 Ambient Cultures**

Ambient cultures now focus on the development of open systems that understand and support the rituals of our living and adapt themselves to people through time and space [5].

Whether the concept of culture has to be refined, radically reinterpreted, or progressively extinguished will probably not matter in the long run, unless we cannot find a way to ask the right strategic questions, identifying connections that would otherwise be unseen, and therefore to enable us finding the best answers for our cultural development. Ambient culture focuses nowadays on the development of open systems

that understand and support the rituals of our living and adapt themselves to people through time and space [6].

### **1.3 Why Cultural Computing?**

Human communication is fostered in environments of regional communities and cultures and in different languages. Cultures are rooted in their unique histories. Communication media such as writing, music and film have developed to circulate these cultural characteristics [7].

Now, as the computing society spreads across the planet, computers must enable local and global cultures to communicate clearly and accurately. To that end, it is also necessary for those involved in computer technology to bring to life within the medium of computers local cultural ways of thinking.

In this era, the entire world is linked by networks like a small village. Social networking sites like facebook, myspace and others are providing the platform for humans belonging to any part of the world to communicate with each other. So, we have to understand the cultures to get effective community based interaction.

There are many cultures and all are unique. No one culture is the perfect one and they evolve continuously with time.

### **1.4 What is Cultural-Computing?**

In Eastern application, Cultural Computing is defined as cultural translation that uses engineering methods to represent essential aspects of a culture. Cultural computing is more than integrating cultural aspects into the interaction. It is about allowing the user to experience an interaction that is closely related to the core aspects of his/her culture [8].

Cultural computing is the integration of computing and digital media in our lives, which is changing the way we think, learn, apply knowledge, communicate and produce. Culture isn't and won't be a science, no matter what we accomplish with social and cultural computing. However, with the accelerated advancement of IT technology, we might arrive at an age of computational cultures in the near future, where digital natives

with computational thinking are ordinary citizens [9]. Whether the concept of culture has to be refined radically reinterpreted or progressively extinguished will probably not matter in a long run, unless we can find a way to ask proper strategic questions identifying connections that would otherwise be unseen, and therefore to enable us finding the certain answers for our cultural development.

Cultural Computing has its roots in HCI but it goes beyond HCI.

## **1.5 Thesis Framework**

This section discusses the framework of this thesis. This thesis is organized as follows:

### **Chapter 2 “Literature Review”,**

In this chapter, Human Computer Interaction and its evolution has been discussed. Then move on to describing describe Culture and Cultural computing.

The last section gives the overview of different projects in field of Cultural Computing.

### **Chapter 3 “Problem Formulation”**

This chapter presents the problem statement, gap analysis and justification of problem formulated.

### **Chapter 4 is “Web Presence of Cultural Information and its Analysis”**

This chapter discusses the implementation details of the solution proposed for the problems defined in previous chapter. First section of this chapter describes the analysis, when the website administrators were contacted with several questions. The next section is the analysis of the traffic statistics of the websites who responded and gave answers of the questions.

### **Chapter 5 is “Cultural Portal Development”**

This chapter describes all the technical details of open source tool “Joomla” and process of developing the websites using it. The implementation of the developed portal for promoting Indian Culture through Cultural Computing has been discussed.

### **Chapter 6 is “Dynamics of Mind and Cultural Computing”**

This chapter deals with the process, How Human mind responds to technical environment and how Computing affect Human mind in long run? Is this affect is one way or there exists a whole cycle?

### **Chapter 7 is “Conclusion and Future Scope”**

This chapter presents the conclusion of the thesis and highlights future research direction based on the results obtained.

Cultural computing is a part of Human Computer Interaction.

### **2.1 Human Computer interaction**

The Human-Computer Interaction (HCI) community is diverse. Academics and practitioners from science, engineering, design or art have been contributing to its rapid development, but communication and cooperation between the different disciplines can be challenging at times. We will use the established term HCI in a wide scope. With upcoming new technology (e.g., ambient and aware systems, mobile and entertainment computing, etc.), the traditional term HCI seems to be quite limited. Furnas addresses this issue by broadening the scope of HCI to ++HCI. We mainly agree with Furnas' scope of ++HCI. Therefore, we will use a very broad definition of HCI throughout (including adaptive and non-adaptive systems, professional, home consumer and entertainment products, etc.) [1].

It seems obvious, that the present state of affairs for the interdisciplinary field of HCI is in the explorative phase [3] though it may be able to move on to the paradigmatic phase in the future. This statement does not necessarily exclude the possibility that different research communities contributing to HCI are already in a paradigmatic, or even in a post-paradigmatic phase. More recently, at the turn of the century, HCI is about the social computing paradigm with community mediated interaction.

#### **2.1.1 Different Paradigm of Human Computer Interaction**

From a historical perspective, Human-Computer Interaction (HCI) has evolved over more than five decades. Although the history of HCI is rich and complex, within the scope of paper [8] summarize some of the major paradigms that are:

- (1) Personal computing,
- (2) Cooperative computing,

(3) Social computing,

(4) Cultural computing.

Originally, it was about Man-Machine Interaction and the emergence of the Personal Computing (PC) paradigm. The history of HCI goes back to the 60s. It was about Man-Machine Interaction and the emergence of the Personal Computing (PC) paradigm. In the 80s, HCI was investigating media rich computing with the paradigm of networked computer mediated interaction. Interactive multimedia was the focus of attention.

The HCI community investigated applications such as Computer Supported Cooperative Work, and the Internet (e.g., on line communities). With mobile, portable and ubiquitous technology, HCI is looking at more personalized and intimate interaction with positive experiences.

Several concepts have emerged in recent years for the future directions of HCI: ubiquitous, nomadic, mixed-reality computing, and so on.

In general, all these new directions have some common properties:

(1) The disappearing computer

(2) The ease of use and positive experience

(3) The building of communities

The computer is no more the centre of interest, nor is it the focus of attention of the user. It is the running applications and the benefits and effects they have on the user that is what matter.

Finally, in [9] Matthias Rauterberg proposed a new paradigm for HCI i.e. Cultural Computing which is based on Kansei Mediated Interaction. Kansei Mediation is a form of multimedia communication that carries non-verbal, emotional and Kansei information (e.g., unconscious communication). It is a combination of Kansei Communication (i.e., ‘content’) and Kansei Media (i.e., ‘form’). The main research objectives in Kansei Mediated Interaction are the underlying almost unconscious cultural determinants.

Cultural computing addresses underlying and almost unconscious cultural determinants that have since ancient times a strong influence on our way of thinking, feeling and world-view in general.

## 2.2 The evolution of culture

With time the cultures also evolve. The integration and synchronization of particular cultural system can be achieved on different time scales, called layers [11]. We have discussed the cultural development on the M- and U layers. The people of four distinct region of civilized world created the religious and psychological traditions. These traditions have continued to nourish humanity into the present day. In [11] the writers proposed that we don't discuss cultural development on the Y-layer (i.e., individuals, organizations, etc.), C-layer (i.e., societies, nations, etc.), but on the M- or even U-layer. Over the last several thousand years (the M-layer) the peoples of four distinct regions of the civilized world created the Y-layer, C-layer, M-layer, U-layer (here Y=year C=century M=millennium, U=universal

<ul style="list-style-type: none"> <li>▪ <b>Confucianism &amp; Daoism In china.</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Hinduism &amp; Buddhism in India</b></li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Monotheism in middle east</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Philosophical rationalism in <u>greece</u></b></li> </ul>

Figure 2.1 Religious and philosophical tradition created by Four distinct regions of the civilized world.

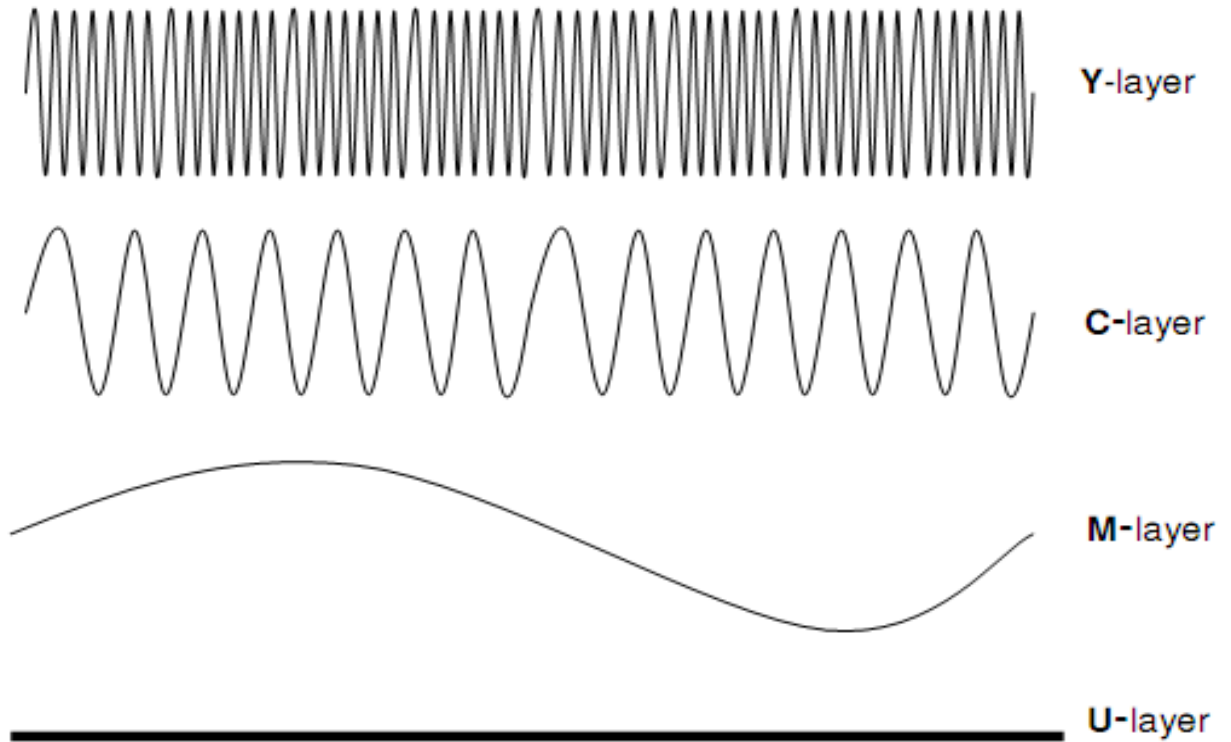


Figure 2.2 the different time frame of development of culture. Y= years, C= century, M= Millennium, U= Universal [11]

### 2.3 Ambient cultures

Whether the concept of culture has to be refined, radically reinterpreted, or progressively extinguished will probably not matter in the long run, unless we cannot find a way to ask the right strategic questions, identifying connections that would otherwise be unseen, and therefore to enable us finding the best answers for our cultural development. Ambient culture focuses nowadays on the development of open systems that understand and support the rituals of our living and adapt themselves to people through time and space [12]. Different cultures worldwide will have different approaches to address their particular cultural determinants. In the East, the project ZENetic Computer is a first and very promising approach for cultural computing addressing Eastern cultural determinants. In the West, an interactive experience based on the narrative ‘Alice’s Adventures in Wonderland’ to address the main characteristic of the Western culture: analytical reasoning based on formal logic has been proposed. The

effects on the user's self conception might be measurable via the mandala introduced as cultural archetypes by C.G. Jung.

It can be confirmed that Westerners are analytic, paying attention primarily to the object and the categories to which it belongs and using rules, including formal logic, to understand its behavior [13]. In contrast, East Asians are more holistic, attending to the entire field and assigning causality to it, making relatively little use of categories and formal logic, and relying on 'dialectical' reasoning. These Western and Eastern types of cognitive processes are embedded in different naive metaphysical systems and tacit epistemologies. It can be speculated that the origin of these differences is traceable to markedly different social systems as part of the underlying cultural determinants [13].

In the Eastern application, cultural computing is defined as cultural translation that uses engineering methods to represent essential aspects of a culture [14] [15]. These engineering methods, such as artificial intelligence and mixed realities can give a person the sense of entering and participating in a different world. 'ZENetic Computer' is such an installation, which incorporates certain elements of the Japanese Zen culture (i.e., sansui paintings, poetry and kimonos). Through an interactive dialog with the system, users can experience the birth of self-awareness brought about through the unification of one's everyday self and one's unconscious self [16]. The Zen teachings and symbols that are used in the 'ZENetic Computer' are very typical for the Japanese culture and are not likely to be understood by most people from the West. Therefore, the question is how to create a comparable experience in the West that is based on symbols that can touch cultural determinates of Westerners. The project named "Alice" tried to answer this question in the project named ALICE by proposing cultural computing based on the story of 'Alice's Adventures in Wonderland' [17] [18] [19] [20]. In the role of Alice, the user goes through an interactive narrative and encounters several stages that are based on selected parts of the original plot. The stage 'Advice from a Caterpillar', is addressed here which centers around and focus on the user's self-concept [21].

By addressing the Western individual self-concept, Alice's self is challenged in 'Advice from a Caterpillar'. After she entered the rabbit hole to follow the White Rabbit, she experienced a lot of transformations both physically and mentally. This brought her in an

initial state of confusion, which is emphasized in her conversation with the Caterpillar: ‘Who are YOU?’ This challenging attitude of the Caterpillar makes Alice uncertain about herself, becoming vulnerable and open for persuasion[22].

This installation can offer an experience that is similar and consistent with the original narrative. The encounter with the caterpillar robot had a significant influence on the self-concept of the test subjects. This can be seen as valuable contribution to cultural computing by providing access to the unconscious determinates of the Western culture: the self-concept as an individual. This can change the self-concept of Westerners to less individualism and egoism.

**ZENetic Computer: Exploring Japanese Culture GLOBAL CROSSINGS** - the research in intercultural communication from the perspective of engineering, this has been only one experiment in intercultural collaboration via machine translation. This experiment found machine translation to be effective in cross-cultural collaborative research and development. Also, research into system design using an agent for intercultural communication in cyberspace has produced a very interesting finding: that user’s level of intimacy rises and communication becomes smoother if the agent breaks cultural taboos. For example, the use of slang words tends to elicit emotional response from users.

## Chapter 3

### Problem Formulation

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The major projects in the field of cultural Computing are:

**ZENetic Computer:** Exploring Japanese Culture GLOBAL CROSSINGS- It represents all aspects of Japanese culture. ‘ZENetic Computer’ is such an installation, which incorporates certain elements of the Japanese Zen culture (i.e., sansui paintings, poetry and kimonos). The Zen teachings and symbols that are used in the ‘ZENetic Computer’ are very typical for the Japanese culture and are not likely to be understood by most people from the West.

**‘Alice’s Adventures in Wonderland’:** It represents all aspects of western culture. In the role of Alice, the user goes through an interactive narrative and encounters several stages that are based on selected parts of the original plot. This can be seen as valuable contribution to cultural computing by providing access to the unconscious determinants of the Western culture: the self-concept as an individual.

### 3.1 Gap Analysis

The Gaps Observed While doing Literature Survey are:

Indian culture is different from Japanese culture and western culture and “ZENetic Computer” project and “Alice in Wonderland” project are not enough to address all aspects of Indian Culture. Indian culture is as unique as Japanese culture so we can’t say that “ZENetic Computer” can explain the Indian culture. Eastern culture is not only a single culture.

In Japan, people rarely use religion to represent themselves or to categorize others. While in many western and/or eastern societies where major religious groups exist. Project like “Alice in Wonderland” and “ZENetic Computer” are not sufficient to address the challenges faced by Cultural Computing.

### **3.2 The Proposed Objectives**

We are aware that Computing can (is) affect (ing) our health adversely, but at the same time we are unaware that computing is affecting our way of thinking, our knowledge, our belief systems and thus the whole culture (as it is happening unconsciously). Therefore a conscious effort is needed to see what computing does and more so how it does.

The problems or the limitations defined in the above section of this chapter are proposed to be solved by:

1. To observe the (cause and) effect of cultural changes on Computing.
2. To understand and describe the role of ‘dynamics of mind’ in ‘Cultural Computing’.
3. To explore the sources of digitally available specific, scientific and spiritual knowledge of India, enhance it and expand the same.
4. To publish the findings in the form of a ‘portal’ using a suitable computing technology.

### **3.4 Methodology Used**

To implement the proposed solution of the problem that is being taken care of in this thesis work, the following methodology is used:

1. Explored the websites related to Indian culture. Contacted them and asked them several questions and compared the responses.
2. Collected the statistics of websites related to Indian culture and compared the results.
3. Studied the dynamics of mind and how it affects us.
4. Installed the tool “Joomla” and used it to develop the portal to publish the findings and all the relevant links of websites related to Indian culture and tried to advertise the right version of Indian culture.

5. The implementation details of the above methodology are given in the respective chapters.

## Chapter 4

### Web presence of cultural information and its analysis

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This chapter discusses the implementation details of the solution proposed for the problems defined in previous chapter. First section of this chapter describes the analysis, when the website administrators were contacted with several questions. The next section is the analysis of the traffic statistics of the websites who responded and gave answers of the questions.

#### 4.1 Detailed Analysis of the Responses from Web-Administrators

To get the famous websites available on Internet related to Indian culture Google is used. Different keywords are used to search the Indian cultural websites on internet.

The list of keywords searched

Table 4.1 the keywords Searched on Google

Sr. no.	Keywords
1.	Indian Culture
2.	Indian Tradition
3.	Indian Art
4.	Indian Dances
5.	Indian People
6.	Indian Lifestyle
7.	Yoga
8.	Ayurveda in India
9.	Indian Values

<b>10.</b>	Indian Classical Music
<b>11.</b>	Religions in India
<b>12.</b>	Indian Festivals
<b>13.</b>	Indian Cultural Values
<b>14.</b>	Culture of Indians
<b>15.</b>	Indian Music
<b>16.</b>	Indian Art and Craft
<b>17.</b>	Indian and Ayurveda
<b>18.</b>	Indian Astrology
<b>19.</b>	Indian Ancient Art
<b>20.</b>	Vedas
<b>21.</b>	Indian family structure
<b>22.</b>	Buddhism in India
<b>23.</b>	Janism in India
<b>24.</b>	Hinduism in India
<b>25.</b>	Islam in India
<b>26.</b>	Christianity in India
<b>27.</b>	Indian Philosophy
<b>28.</b>	Indian Scriptures
<b>29.</b>	Indian States and their Traditions

<b>30.</b>	Indian Clothes
<b>31.</b>	Indian Dressing Style
<b>32.</b>	Art and Craft in India
<b>33.</b>	Indian Family System
<b>34.</b>	Festival in India
<b>35.</b>	Indian Sanskriti
<b>36.</b>	Spirituality in India
<b>37.</b>	Indian spiritual gurus
<b>38.</b>	Indian Heritage
<b>39.</b>	Indian Tribes
<b>40.</b>	Ayurveda in India
<b>41.</b>	Indians and Spirituality
<b>42.</b>	Indian Food
<b>43.</b>	Indians and their culture
<b>44.</b>	Indian Philosophy

After Searching all the keywords 111 Indian cultural websites were found. After extensive search of all the pages of these Websites their contact information was collected.

Table 4.2 the Details related to Websites

1.	Total Websites searched	111
2.	Number of Websites which don't have contact details	8
3.	Number of Websites which you can contact only by query	10
4.	Number of Websites Contacted with a request letter with several questions	93
5.	Number of websites whose Web-Administrators responded	11

As the part of the analysis, when the websites administrators were contacted with the following questions:

The broader objective behind publishing this site?

Your site is popular among which subset of users, if any?

The topics of discussions those are most popular among these users.

Feedback of the site visitors.

What type of responses have you received from the users?

#### **4.1.1 Responses from Web-Administrators:**

##### **a). Website name: maharstraweb.com**

- i. Objectives:** This site was started by Mr. Anand. His friends had their own websites and he wanted to follow their example. Initially, it was only Maharashtra

information; He recently expanded to the whole of India. The main aim to begin with was putting a prayer book on the website (you will find it in the prayer book link) along with Maharashtra information. Objectives are prevention of aids or prevention of female foeticide in Indian cultures.

**ii. Age Group:** Every age group.

**iii. The topics of discussions those are most popular among these users:** The top ten keywords of visitors to his site. Except for a couple of items in this list, the other topics are mostly his places or issues

- Female foeticide 1,088 1.2900:01:1787.59% 81.53%
- Rangoli 756 1.2700:00:4491.40% 84.26%
- Aids awareness 657 1.2600:01:1592.39% 82.65%
- Rangoli images 509 1.2900:00:2291.16% 87.82%
- Places to visit in pune 320 1.2100:00:3393.44% 85.31%
- Maharashtra map 316 1.5900:01:3393.35% 68.35%
- Karnataka map 278 1.7700:01:4992.45% 69.78%

**iv. Feedback of the site visitors:** The web is a busy place and there is not much of feedback. There is usually more feedback from the blog links related to the states and cities that you will find on the side bar. Also he has Google friends enabled and they are now approaching 500 members.

**v. What type of responses have you received from the users?**

Response is usually positive as the web site has positive content. The blog entries can have positive or negative reaction.

**b). Website: [www.hindujagruti.org](http://www.hindujagruti.org)**

**i. Objectives:**

- To create awareness about Hindu issues
- To Educate about Hindu Dharma
- To unite Hindus globally
- To achieve broader social interests instead of their narrow-minded power centric Hinduism
- To stop denigration of Hindu Dharma (Righteousness)
- To protect the Nation

**ii. Age Group: Youth and Adults**

**iii. The topics of discussions those are most popular among these users: Dharmic Practices and Current issues related to Hinduism.**

**iv. Feedback of the site visitors: Dharmik education helps them to improve their knowledge and thus faith and thereby life style. Today many people are giving biased or own interpretation of the Dharmik principles. The website has helped to get scientific knowledge according to science of spirituality. News related to current issues creates awareness among masses.**

**v. What type of responses have you received from the users?**

People want to have more knowledge about Hindu Dharma and current issues.

**c). Website: [www.adishakti.org](http://www.adishakti.org)**

**i. Objectives: To fulfill the eschatological evolution of humanity.**

**ii. Age Group: 50 + age group**

- iii. **The topics of discussions those are most popular among these users:** Mayan End Times and New Age
- iv. **Feedback of the site visitors:** There has been no negative feedback, including the Muslims.
- v. **What type of responses have you received from the users?**  
Gratitude, thanks and encouragement to continue

**d). Website: [www.hinduism.co.za](http://www.hinduism.co.za)**

- i. **Objectives:** The central purpose of the trust deed is to spread the teachings of Vedanta, spread awareness about Sanatan Dharma.
- ii. **Age Group:** Web site is visited by students (high schools , colleges, universities.) from all over the world. Their questions over the years .Religious organizations (Hindu, Christian, Buddhist etc), visit our web site regularly.
- iii. **The topics of discussions those are most popular among these users:** Vedic Math's; Founder of Hinduism; Kaabaa; Chanakya; oldest Civilisation; Hinduism &Quantum Physics; Amazing Science; Mind; Who Am I?; Women; Food
- iv. **Feedback of the site visitors:** some Feedback from site visitors are reproduced on page Appreciations
- v. **What type of responses have you received from the users?** It's positive.

**e). Website: [www.jainstudy.org](http://www.jainstudy.org)**

- i. **Objectives:** The Jain Study Circle was set up 19 years ago with the aim of propagation of the fundamental principles of the Jain religion among Jains, especially Jain youth. This is done in the following ways:
  - By publication of the Jain Study Circular - a quarterly containing articles, stories, poems, etc., on Jainism and related subjects.
  - By publication and distribution/sale of suitable literature.

- By organization of Study Groups, Seminars and Conferences.
- ii. **Age Group:** Every age group
- iii. **The topics of discussions those are most popular among these users:** Topic about Jainism.
- iv. **Feedback of the site visitors:** Many universities, institutions and scholars of religion and philosophy use our website and references to especially 'Studies In Jainism: Reader 2' have been made in scholarly publications.
- v. **What type of responses have you received from the users?** All responses of our readers/visitors have been positive.

**f). Website: Indianresource.com**

- i. **Objectives:** The broad objective behind the site was to broaden the knowledge of Indian history. I realized that the mainstream narrative of Indian history was not only very inadequate, it was gravely flawed in some key respects and I had wanted to do my part in transmitting what I strongly felt to be a more authentic and accurate reading of Indian history and culture - especially with regard to developments in rational scientific thinking and technological advances.
- ii. **Age Group:** Site appears to be most popular amongst well-educated sections of the Indian Diaspora, non-Indians with some interest in India who are curious to learn more - as well as educators in India who are also looking for a fresh perspective on Indian history.
- iii. **The topics of discussions those are most popular among these users:** Aryan Invasion Theory" and also the negative role played by India's Islamic invaders. Partition and Kashmir have also drawn considerable attention.
- iv. **Feedback of the site visitors:** genuine visitors have responded very positively - some universities have added the site to their India resource list - as have some museums and art history departments. A few have offered to translate the essays into other Indian languages and a Hindi site exists in parallel w. the English site

- v. **What type of responses have you received from the users?** The feedback has been very appreciative. But there has also been some griping by colonial apologists and some baiting from Islamic chauvinists. There has also been some legitimate criticism that I have had to learn from and in some cases; it has led to a rewrite of some essays because I felt that the critical comments had validity and that my own knowledge had been incomplete.

**g). Website: biharlokmanch.org**

- i. **Objectives:** Bihar Lok Manch is an organisation running from last 27 years offline in Janakpuri, Delhi having 800+ Bihari Family joined together to perform their culture activities. But since we used to meet on special occasions like Durgapuja, Holi Milan and Vidyapati Samaroh. Rest of the time our communications become less. So we team of young members decided to have this website through which we can communicate and also can share what we have as a creative instinct with each other on net.
- ii. **Age Group:** We are very famous among Bihar of middle age group and Specially Maithil Community.
- iii. **The topics of discussions those are most popular among these users:** Members are here to share their creative in the form of Poems, Articles, and Stories etc. These are most popular among Maithili people as they feel it homely.
- iv. **Feedback of the site visitors:** The visitors from all over world belong to Mithila feel very proud to have such website and also they become members to be part of our team.
- v. **What type of responses have you received from the users?** We are getting very positive responses from them many have joined us as member's offline as well as online members. Also members communicate each other for further meeting makes us proud to be the part of this portal.

**h). Website: india-heritage.org**

- i. Objectives:** When I started this site in 1998, there were practically no sites offering information on India. That was 1 reason for starting a site to share info.
- ii. Age Group:** I find Indians, NRIs and foreigners visiting my site. I get queries, comments and link requests from all.
- iii. The topics of discussions those are most popular among these users:** Hindu Gods & temples and the Music season are the most visited areas. Painting, art, craft, customs (kolams) & places of interest are the other visited pages.
- iv. Feedback of the site visitors:** everybody says the site is good, but I always feel guilty then, because I am unable to put it in more effort. Queries are about Gods & temple addresses, Music Season schedule, Indian customs. I have got several enquiries from school teachers who are having an Indian day in school & request simple recipes - drinks etc that the students can easily prepare.
- v. What type of responses have you received from the users?** Mostly are good and appreciative. I have had people point out errors, which I have cross checked, if it needs to be corrected. There have been a few mails - rude mails from people who think I am deliberately neglecting some areas. (I have to explain that either I am ignorant on that topic or I don't have the means to collect the data)

**i). Website: esamskriti.com**

- i. Objectives:** To support Indian culture
- ii. Age Group:** Visitors of all ages
- iii. The topics of discussions those are most popular among these users:** Religion and vedas.
- iv. Feedback of the site visitors:** Positive responses
- v. What type of responses have you received from the users?** This websites get Positive comments and e-mails from the users.

**j). Website: gatewayofindia.com**

- i. Objectives:** Our broad objective is to provide our visitors information about Indian Culture, history, religion, tourism as well as about science, technology & healthcare.
- ii. Age Group:** Our Website is popular amongst a wide cross-section of cyber visitors - Including students, academicians, and scholars from India and many foreign Countries.
- iii. The topics of discussions those are most popular among these users:** Indian history & religion are the most popular topics amongst our visitors. In addition healthcare, tourism and technology are also popular.
- iv. Feedback of the site visitors:** Most visitors have been very content and satisfied with the information provided by the Website.
- v. What type of responses have you received from the users?** People in general have given a favorable response to our website. We also often get constructive suggestions from our visitors.

**k). Website: hindujagruti.org**

- i. Objectives:** The present condition of Hindus is not very good. If we want to improve this then we ourselves must do spiritual practice and motivate others to do so.
- ii. Age Group:** Youth and Adults
- iii. The topics of discussions those are most popular among these users:** Dharmic Practices and Current issues related to Hinduism.
- iv. Feedback of the site visitors:** Dharmik education helps them to improve their knowledge and thus faith and thereby life style. Today many people are giving biased or own interpretation of the Dharmik principles. The website has helped to

get scientific knowledge according to science of spirituality. News related to current issues creates awareness among masses

- v. **What type of responses have you received from the users?** People want to have more knowledge about Hindu Dharma and current issues.

### **4.3 Brief Analysis of the responses received from the Web-Administrators**

#### **Q1. The broader objective behind publishing this website-**

The broad objective behind are:

- ❖ To broaden the knowledge the knowledge of Indian history.
- ❖ Preserve the culture of particular state of India.
- ❖ Increase the knowledge of web users about the religious rituals and their significance.
- ❖ Increase the awareness about the bad practices in our society.
- ❖ To promote the Indian version of spirituality.
- ❖ Some websites even cover wide range of topics related to Indian ancient science, technology.
- ❖ These Websites have really great objective and they really want to spread the real form of Indian culture before the Internet users.

#### **Q2. Your Website is popular among which subset of users, if any?**

Users belong to all age groups. Some websites have specifically have users from 50+ age group. Websites are popular among students, scholars, foreigners and religious organizations. Mostly students group who are working in the field related to Indian culture are more interested. Teen age group is not that much active on these websites.

**Q3. Topic of discussions those are most popular among their users?**

Most of the topics are related to religions, ancient science, Indian ancient mathematics, Indian Gods, some talk about critical issues like partition in Kashmir and “Aryans Invasion theory”. Some topics are creative related to Indian arts, music, Literature and craft.

Some topics are totally different like “female feticide” and Aids awareness.

**Q4. What is the feedback of the website users?**

They are getting positive feedbacks from the Universities, institutions and scholars of religion and philosophy. Some universities even added some sites in their India resource list.

**Q5. What type of responses have you received from users?**

Response from users is usually positive. Sometimes, they do get rude responses but overall the responses received are quite encouraging.

The answers from the Web-Administrators gave us an in-depth reasoning. The motivation for the websites doesn't have deep understanding how computer and technology is affecting the culture but they have passion to show knowledge about Indian culture. The basic understanding of the Cultural Computing would help us to make a conscious and directed effort to spread knowledge about the Indian Culture across the globe.

The Third and fourth objectives for this thesis work are:

- iii. To explore the sources of digitally available specific, scientific and spiritual knowledge of India, enhance it and expand the same.
- iv. To publish the findings in the form of a 'portal' using a suitable computing technology.

In the earlier chapter most of the available websites on Internet has been explored. Now we need some medium to publish the information of really relevant websites about Indian culture that represents the right version of Indian culture. There exists need of portal to centralize the information related to cultural websites.

### 5.1 The design of the Cultural Web Portal

The basic design for the websites is as follows:

1. The logo for the websites:

A logo is the really for any websites as it indicates your thoughts and create a brand. For this Portal the logo is used and template is set as per the logo required.

The logo design for the Portal is as follows:



Figure 5.1 Logo for the Portal

- ii. Template

For this portal a simple and attractive Web Template was needed as Joomla has some really good template and we can even change the template in future so available template "JA Purity" is used for this portal.

### iii. Navigation system

It is really important to manage the navigation here “joomla” has really good features and for developing this portal these features has been used. Here it is designed using Menu Manager. Here two menus are used which are main menu and resource menu.

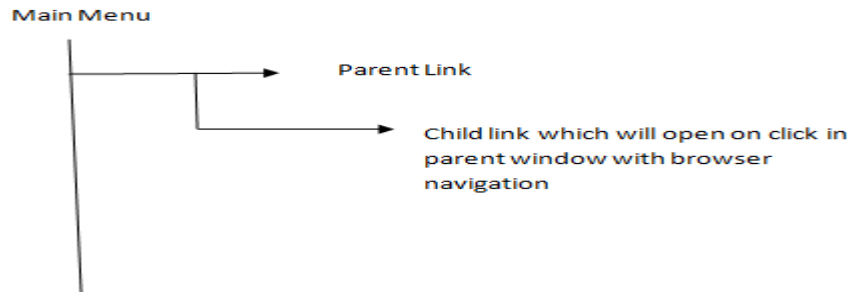


Figure 5.2 Menu Navigation

The respective links are divided into two categories Parent links and child link.



Figure 5.3 Navigation of the Portal

To ensure the visitors can find what they are looking for easily. This portal is designed to display their navigation bar on the left or at the top since most people are used to this type of navigation, it is best to stick with it.

Here navigation is shows as: Home → Parent Item → Child Item

It is also helps to include the navigation bar at the bottom of each page to save the visitors from having to scroll back to the top.

#### **iv. Special Effects**

In designing this portal special effects are used as spinning graphics and other such things often distract the user.

#### **v. External links**

The external link of websites that we want to publish is provided on a single page. It is good idea to open to open links to other websites in a new window. That way the visitors can easily return to your site when they are finished browsing the external link.

#### **vi. Site Map and Search Feature**

On this portal we have more than 16 pages, it is useful to have a site map or a “Search” feature to ensure the visitors can easily find what they’re looking for. So Here we have used the Search module.

#### **vii. Login Form**

Here to build a relationship it’s needed to form regular users so this module is also included in this portal.

#### **viii. Polls**

Here we need the views of the users about certain issues so polls module is also included in this portal.

There are Web Content Management tools available like Drupals, Mambo CMS and Joomla. These all tools are open source.

### **5.1 Why Joomla?**

Joomla is so easy to use that it is a good tool for even a single individual to use when building a web site. Joomla is best supported of the more popular CMS applications. Once your Joomla site is up and running, anyone with basic word processing skills can update it by adding content, managing images and keeping company-critical data up-to-

date via a simple, browser-based interface. And because it's free and easy to use, you can focus your resources on the bit that really matters the content.

### **Some Features of Joomla:**

- ❖ **Cost** - Joomla is absolutely free.
- ❖ **Ease of Use** – It is efficient control of users, links, content and files. It has search engine friendly URLs and it also has Image resizing option. It allows Prototyping. It also has the ability to choose WYSIWYG Editor.
- ❖ **Functionality** - Content Syndication (RSS) enabling the incorporation of news bulletins. It allows User Profiling, Blog, Picture Galleries, Contact Management, FAQ Management, Banner Management, Document Management, Mail Form, Calendar, Polls, Built-in search facility, Search Engine visibility is easily controllable, Data manager for uploading and administering information, Archiving facility, enabling the re-use of content, Publication of content in printable, pdf or email format, Simple workflow system, Multilingual frontend, User Contributions.
- ❖ **Management & Performance** – It has the feature of Content Scheduling, Simple and expandable template and component system, On-line Administration, Asset Management, Simple web Statistics and Caching mechanism that speeds up the site's operation.
- ❖ **Security** – It has the feature of Content Approval, Email Verification and protection from spam robots, Login History, Session Management, Versioning and Hierarchical user groups.
- ❖ **Support** – The Commercial Support, including Training is available for Joomla and it has large developer Community. Online Help is also available for it. It has public Forum. It has Third-Party Developers.

### 5.1.1 The Small Description: How the tool Joomla has been used to build the website?

First the “joomla with XAMP” is installed to create the website. We type the address of local host <http://localhost/joomla/administrator/>, and then administrator login page appears.

**Step 1.** Login as Administrator.

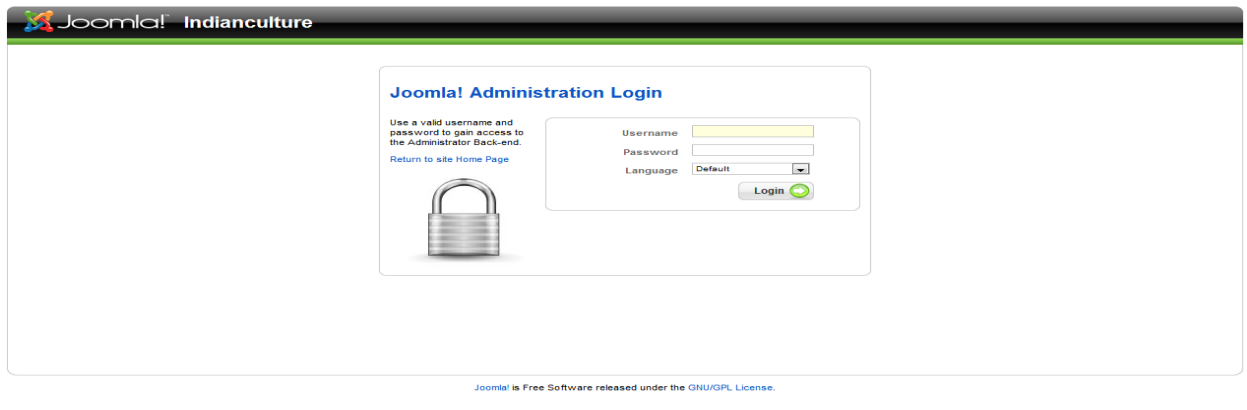


Figure 5.1 Login Window

**Step 2.** After login we can access the control panel. In control panel you will see many icons of different managers. You can access any manger from here by a simple click on that icon. We also have drop down menu and we can also choose different features from here by select→click. Control panel is also a home page for administrator.

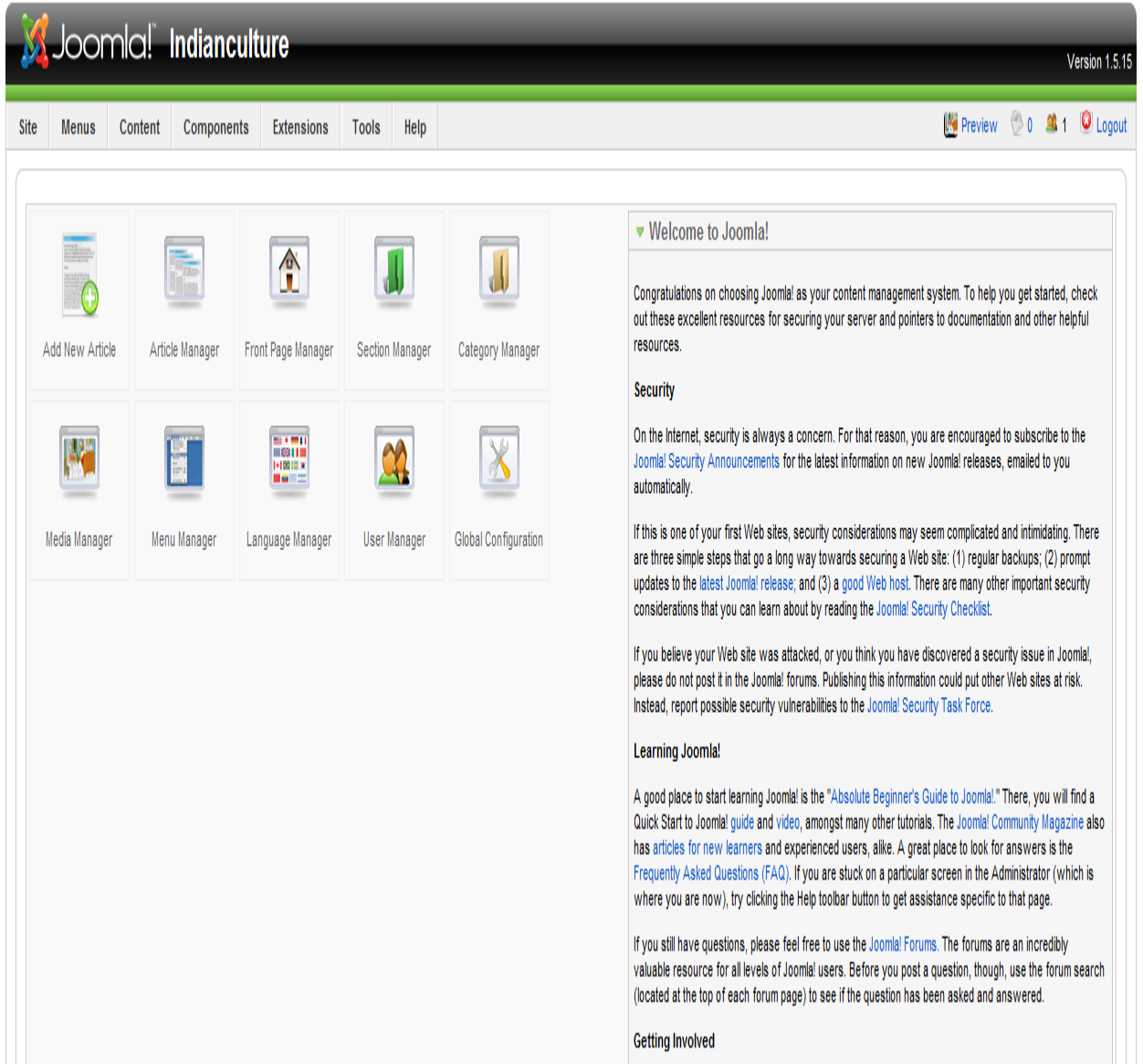


Figure 5.2 Control panel for Administrator

**Step 3.** Click on Article Manager (This feature of Joomla help us in managing the articles).

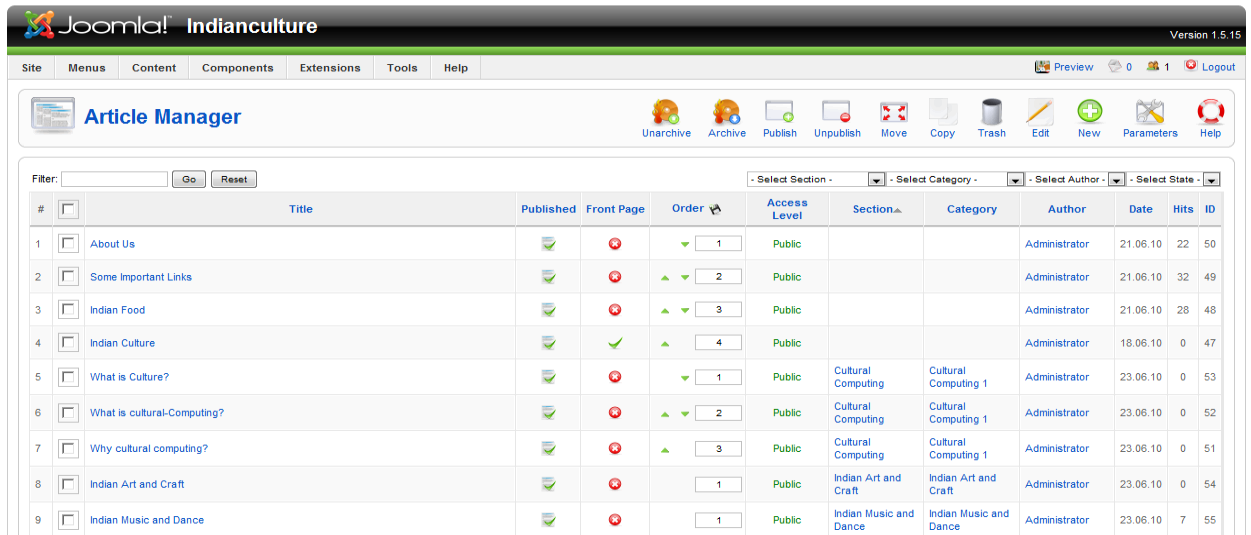


Figure 5.6 Article Manager

With installation the “joomla” has many articles so first these articles should be deleted. Select are articles and click on “Article Trash” button.

### Tool bar in Article Manager

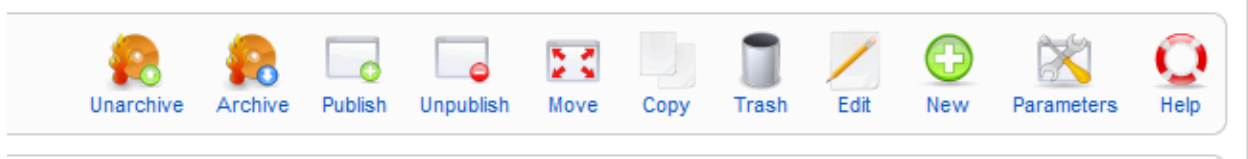


Figure 5.7 Toolbar for Article manager

➔ Click on Unarchive to restore files from an archive or backup to their original location.

➔ Click on Archive to collect publications that are often cataloged or listed and made accessible in some way.

➔ Click on Publish to publish the selected Article.

➔ Click on Unpublish to unpublish the selected Article.

➔ Click on Move to move the selected Article.

- ➔Click on Copy to copy the selected Article.
- ➔Click on Trash to move the selected Article to trash.
- ➔Click on Edit to edit the selected Article.
- ➔Click on New to create a new Article.
- ➔Click on parameters to change the Global formulation.
- ➔Click on help if any type of help related to article manager is needed.

**Step 4.** This site about Indian culture consist many articles. To publish an Article about “Religions In India”. First we need to form a section and respective category for the article.

- ➔Go to the control panel and click on “Section Manager”.
- ➔Click on “New”.
- ➔Type the name of Title and Alias in the given blanks.
- ➔Fill the description of the section at the given place.

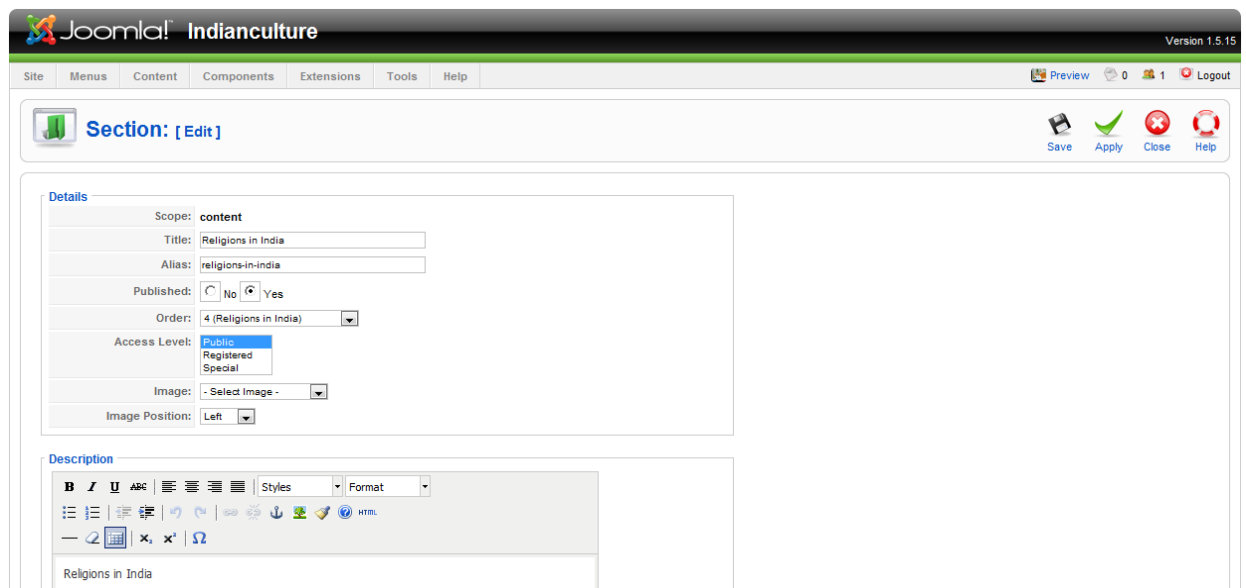


Figure 5.8 Create New Section

➔To create categories go to the control panel and click on the “Category Manager”.

➔Now click on “New” to form new category and fill the name of “Title” and “Alias” of the category. Fill the description of the particular category.

➔Click on “Save” Button.

### Step 5. Tool bar

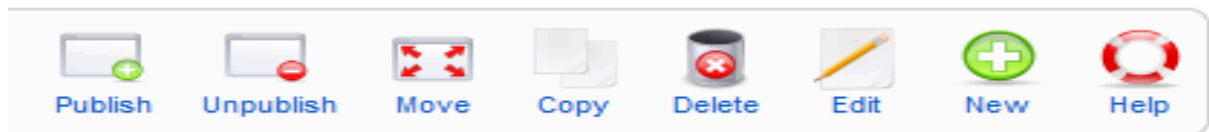


Figure 5.9 Tool bar of Category edit

➔Select any Category and click on “Publish” to publish it.

➔Select any Category and click on “Unpublish” to unpublish it.

➔Select any Category and click on “Move” to move the Category.

➔Select any Category and click on “Copy” to copy the Category.

➔Select any Category and click on “Delete” to delete the Category.

➔Select any Category and click on “Edit” to edit the Category.

➔Select any Category and click on “New” to form a new Category.

➔Click on “Help” for any kind of help.

Section Edit also has the same toolbar and same step should also be followed there to make change in existing sections or to form new sections.

**Step 6.** In some articles the pictures are needed to describe them properly. To insert any picture in an article click on “Insert image”

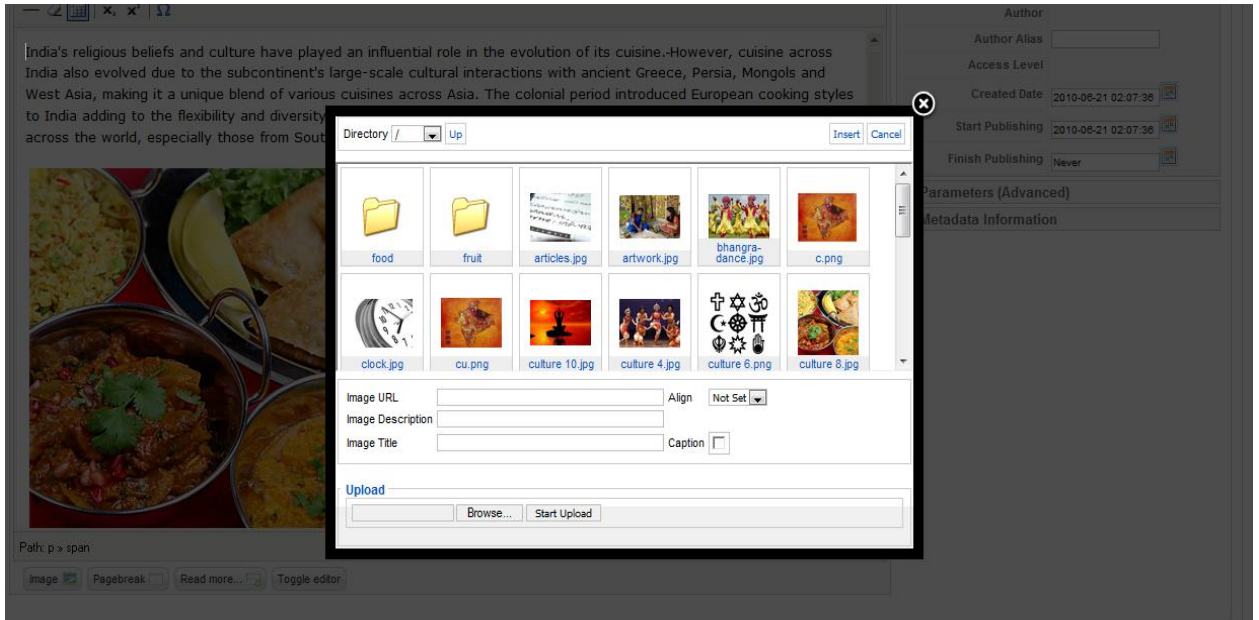


Figure 5.10 Insert Image in any article.

➔ Now image can be inserted from the available images in the gallery, from the URL and can also be first uploaded and then inserted can be inserted in the article.

**Step 7.** Images are needed at various places so it's better to upload the images and form a folder in the media manager.

➔ Go to the control panel and click on the “Media Manager”.

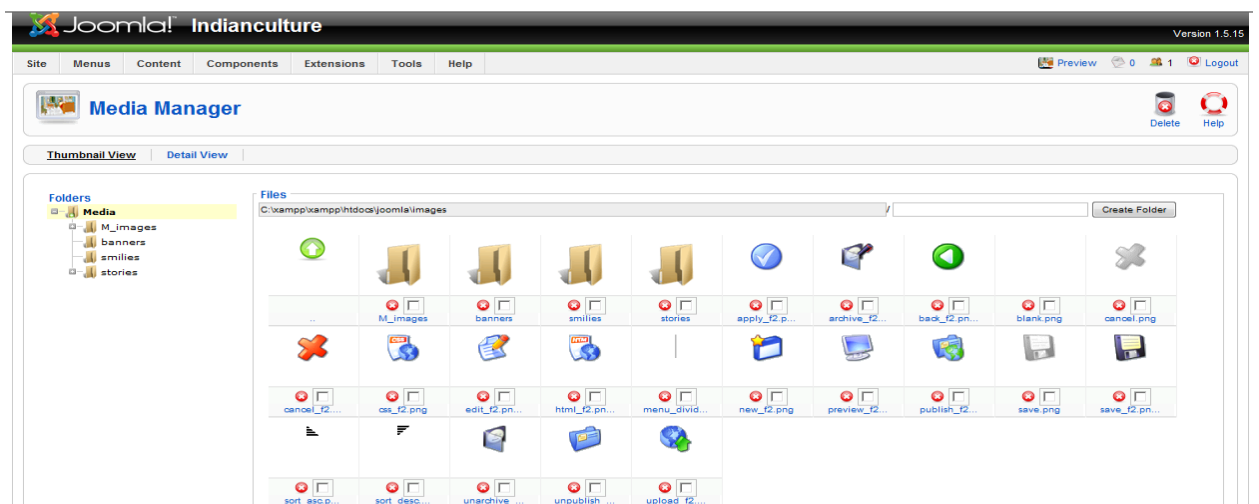


Figure 5.11 Media Manager

→ Give the name to folder and click on “Create Folder”.

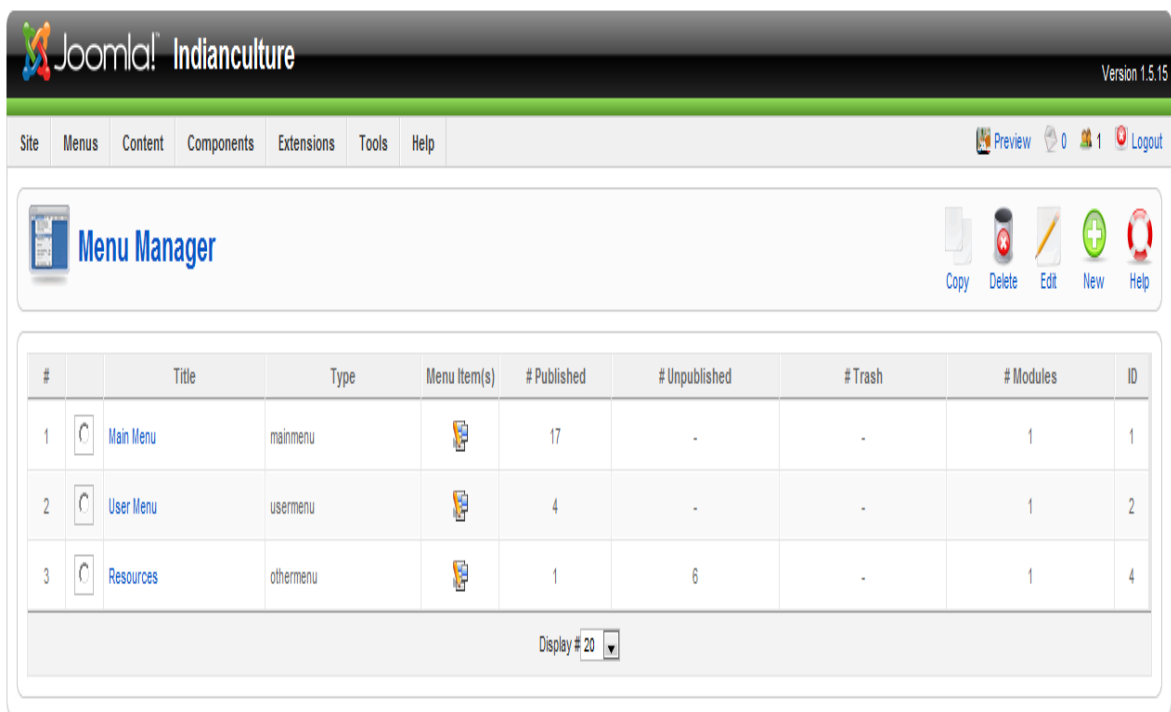
→ If deletion of any image is needed then select the image and then click on “delete”.

→ Some times in website we need new pictures other than existing ones then click on “Browser” and then select the images from the destination folder click on “open” and then click on “upload images”.

### Step 8. To edit the menu.

→ Go to the control panel and click on the “Menu Manager”

→ In this website, here we have three types of menus, a user menu, resources and main menu.



The screenshot shows the Joomla! Menu Manager interface. At the top, there is a navigation menu with options: Site, Menus, Content, Components, Extensions, Tools, and Help. On the right, there are icons for Preview, 0, 1, and Logout. The main content area is titled "Menu Manager" and includes icons for Copy, Delete, Edit, New, and Help. Below this is a table with the following data:

#	Title	Type	Menu Item(s)	# Published	# Unpublished	# Trash	# Modules	ID
1	Main Menu	mainmenu		17	-	-	1	1
2	User Menu	usermenu		4	-	-	1	2
3	Resources	othermenu		1	6	-	1	4

At the bottom of the table, there is a "Display # 20" dropdown menu.

Joomla! is Free Software released under the GNU/GPL License.

Figure 5.12 Menu Manager

→ To edit the given menu first select any menu and click on “Edit”.

→ To form a menu other than these menus click on “New”

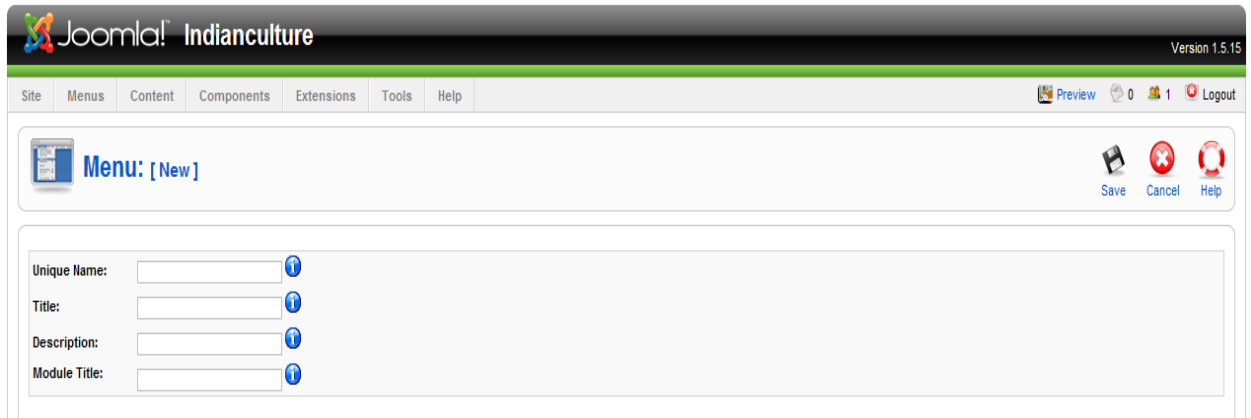



Figure 5.13 form to make new menu.

→ Fill the unique name, Title, Description and Module Title and then click on “save”.

→ To cancel the changes click on “Cancel”.

→ Click on “help” if any type of help is needed.

**Step 9.** To edit the existing menu. We already have some items in the menu like home. Website need some more menu items like “Indian Food”.

→ Click on  This icon before main menu.

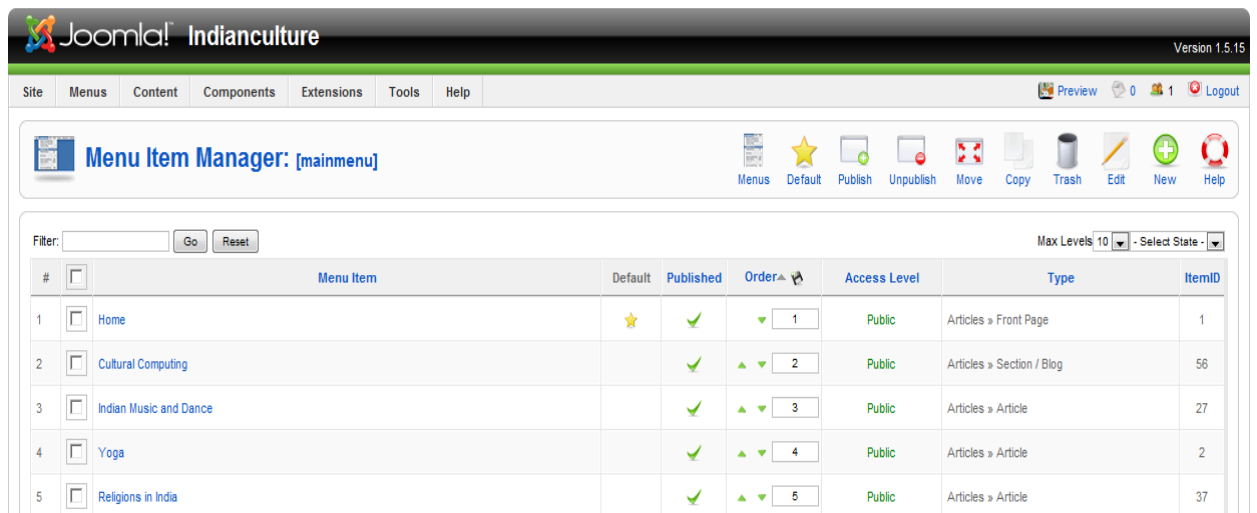


Figure 5.14 Menu Item Manager

→Click on “New”.

The screenshot shows the Joomla! administration interface for editing a menu item. The title bar reads "Menu Item: [Edit]". The main content area is titled "Menu Item Type" and "Article Layout". Below this, the "Menu Item Details" section contains the following fields: ID: 41, Title: Indian Food, Alias: indian-food, Link: index.php?option=com\_content&view=article&, Display in: Main Menu, Parent Item: Top (with a dropdown menu showing options like Home, Cultural Computing, Indian Music and Dance, Yoga, Religions in India, etc.), Published: Yes (with radio buttons for No and Yes), Order: 0 (Indian Food), Access Level: Public (with a dropdown menu showing Registered and Special), and On Click, Open in: Parent Window with Browser Navigation. On the right side, there are sections for Parameters (Basic), Parameters (Component), and Parameters (System). The Parameters (Basic) section has a "Select Article" dropdown set to "Indian Food" and a "Select" button.

Figure 5.15 Menu Item (edit)

→Fill the Title, Alias, choose the parent item, and choose the type of “Menu Item”.

→For Menu Item “Indian Food” the Menu Item type is Article Layout. The Article Layout displays a single Article.

→Choose the article from the list of article that should be published in menu item “Indian Food”.

→Click on “save” to save the Menu Item.

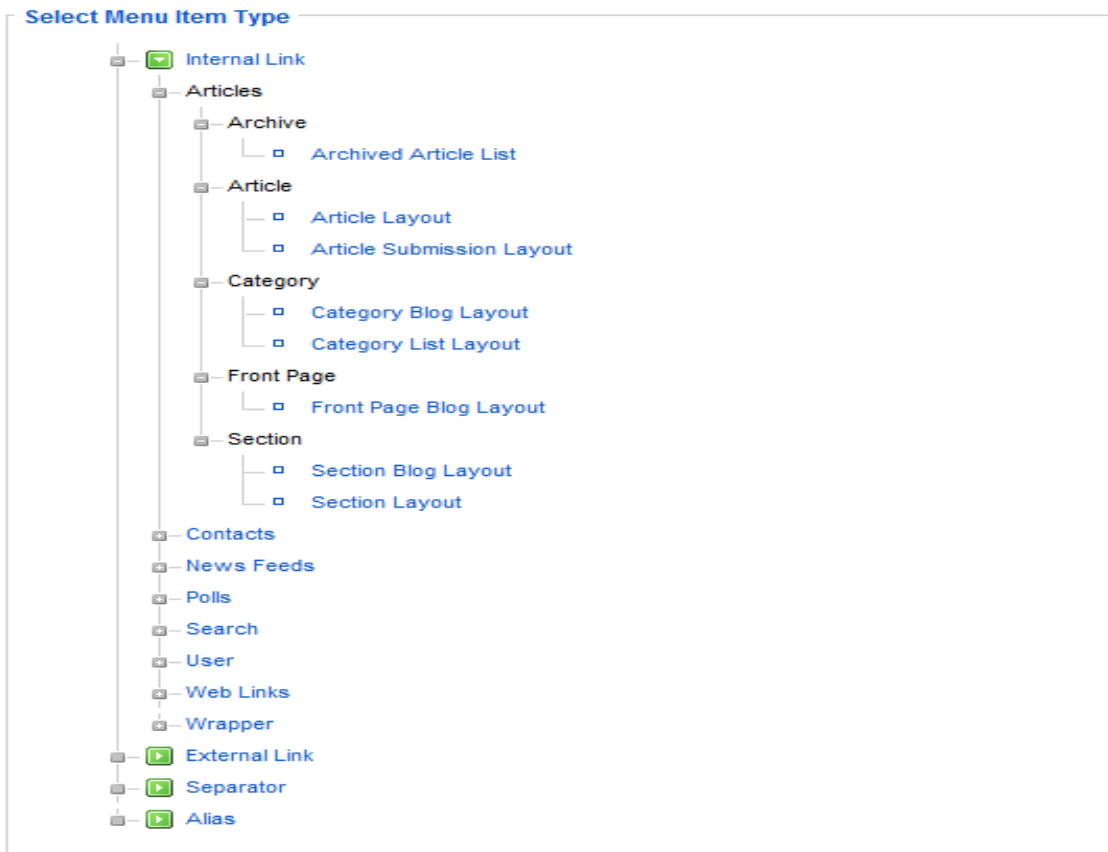


Figure 5.16 Select Menu Item Type

**Step 10.** Website needs a component poll to know the views of users.

➔ Go to control panel and click on “Components”.

➔ Select polls from drop down menu and click.

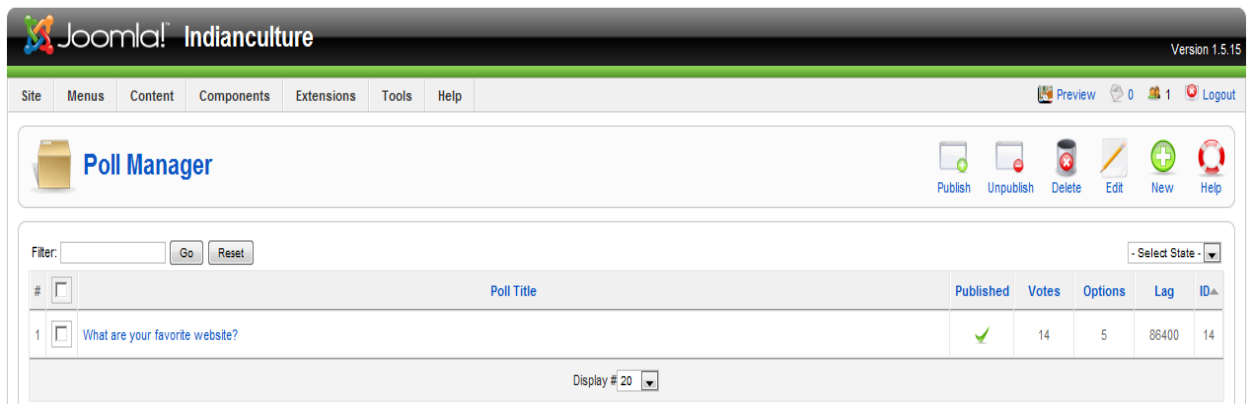
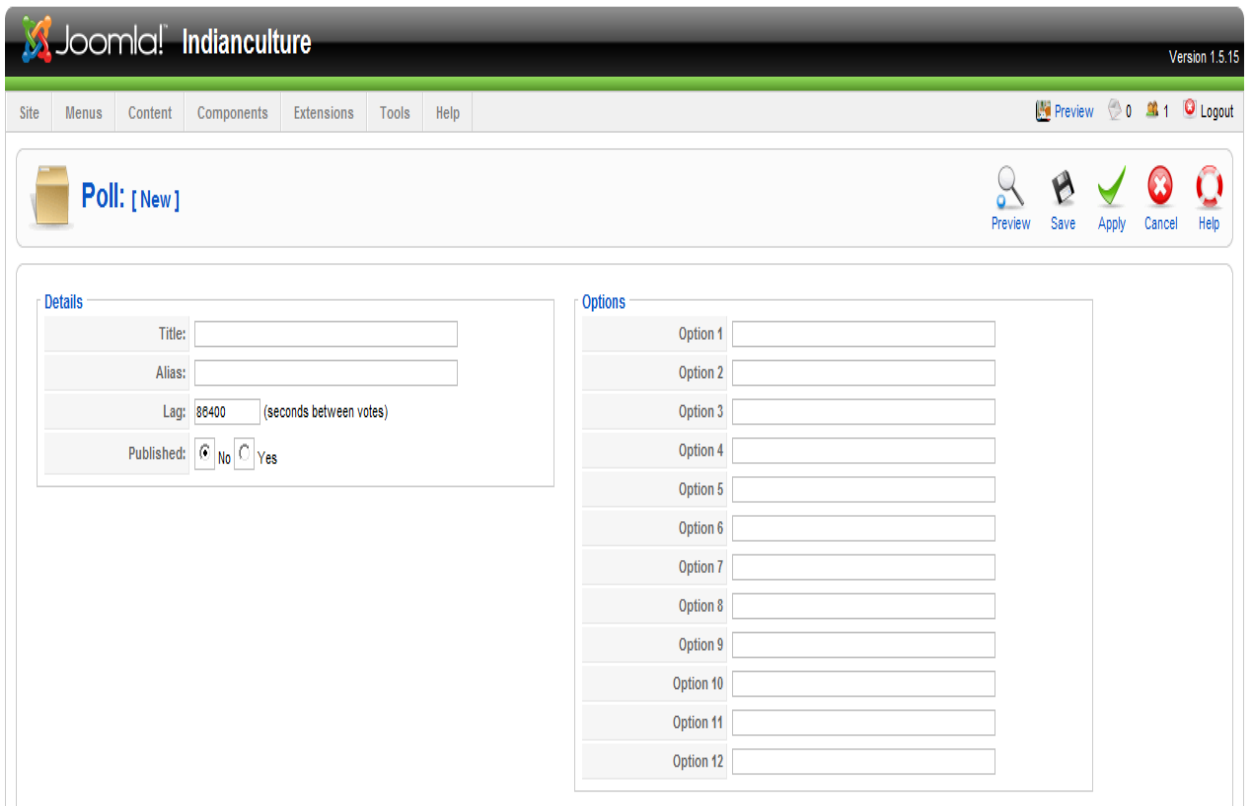


Figure 5.17 Poll Manager

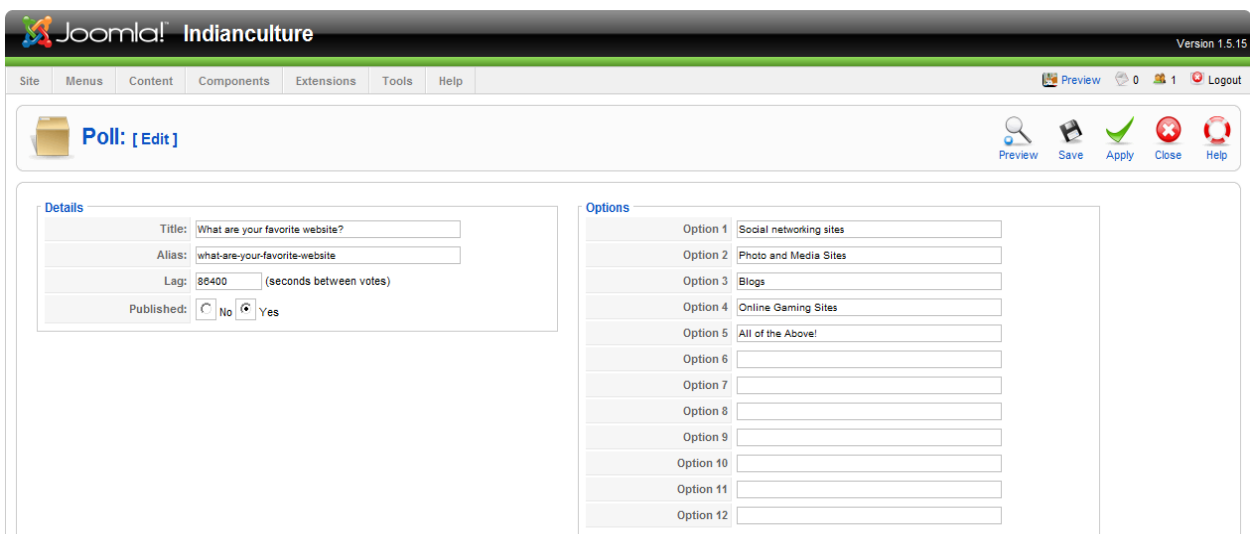
→ To create a new poll click on “New”.



The screenshot shows the Joomla! Indianculture administration interface. At the top, there is a navigation menu with 'Site', 'Menus', 'Content', 'Components', 'Extensions', 'Tools', and 'Help'. The version number 'Version 1.5.15' is displayed in the top right corner. The main content area is titled 'Poll: [New]' and contains two sections: 'Details' and 'Options'. The 'Details' section includes fields for 'Title', 'Alias', 'Lag' (set to 86400), and 'Published' (with 'No' selected). The 'Options' section contains 12 empty input fields for poll options.

Figure 5.18 Create New Poll

→ Fill the Title, Alias and options and then click on Save.



The screenshot shows the Joomla! Indianculture administration interface for editing a poll. The main content area is titled 'Poll: [Edit]'. The 'Details' section is filled with the following information: 'Title: What are your favorite website?', 'Alias: what-are-your-favorite-website', 'Lag: 86400 (seconds between votes)', and 'Published: Yes' (with 'Yes' selected). The 'Options' section contains 12 input fields, with the first five filled with the following text: 'Option 1: Social networking sites', 'Option 2: Photo and Media Sites', 'Option 3: Blogs', 'Option 4: Online Gaming Sites', and 'Option 5: All of the Above!'. The remaining seven options are empty.

Figure 5.19 Poll “What are your favorite websites?”

**Step 11.** Select the template for the website.

➔Go to the control panel and click on “Extensions”.

➔Select “Template Manager” from the drop down menu of “Extensions” and click on it.

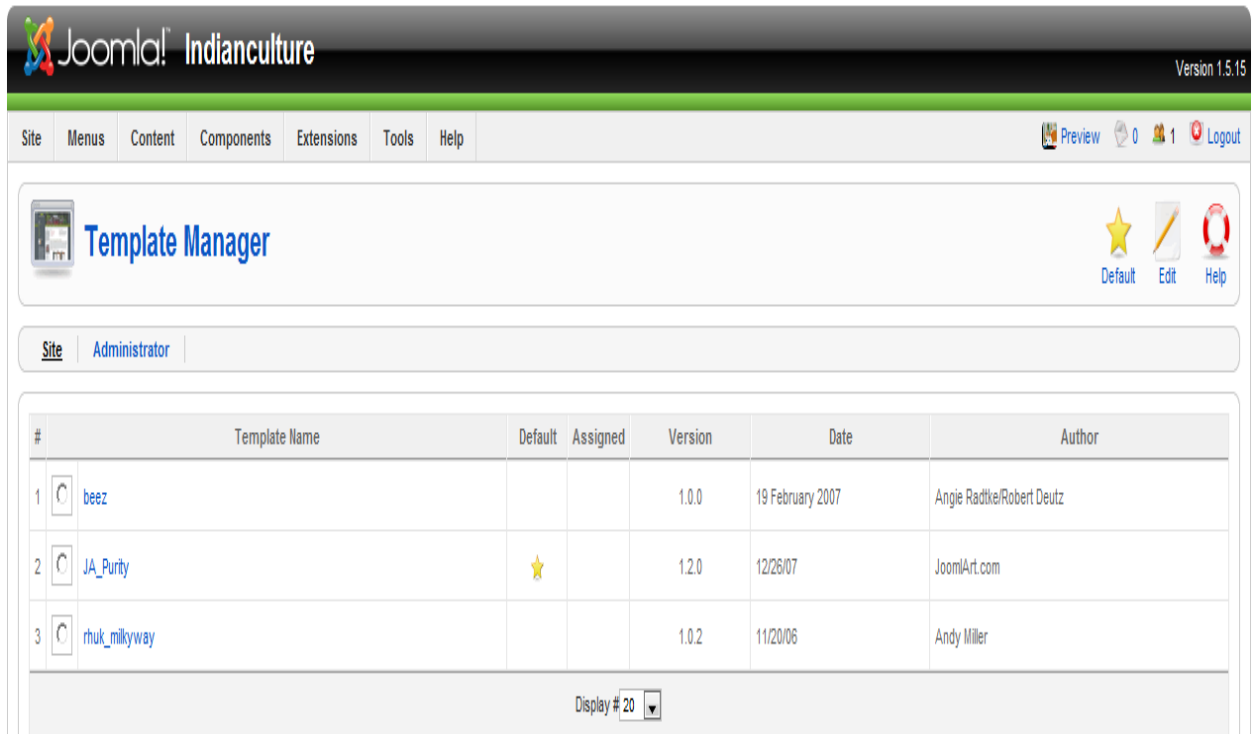


Figure 5.20 Template manager

➔To edit the template select the template and click on “Edit”.

➔To choose the template for website select “**JA Purity**” template from the list and then click on “Default”.

➔To edit the logo of the template choose logo type.

➔Here for this website the logo type is “Text” then type the “LogoText” in the given space which is “Indian Culture” and “Slogan” which is “...because our culture matters”.

➔Select navigation type to “Specified in Percentage”

➔Choose the color of header theme to blue, background theme to lighter and primary element red.

→ Click on save to change in the template.

The screenshot shows the Joomla! Template Edit interface for the JA Purity template. The interface is divided into two main sections: Details and Parameters.

**Details:**

- Name:** JA Purity
- Description:** JA Purity designed by Joomla!Art.com: A highly accessible, elegant and easy template customization.
- Menu Assignment:** Menus: Cannot assign default template.

**Parameters:**

The parameter file `\templates\ja_purity\params.ini` is writable!

- Template Logo:**
  - Logo type: Text
  - Logo text: Indian Culture
  - Slogan: ..because our culture matters
- Horizontal Navigation:**
  - Horizontal Navigation Type: Suokerfish Menu
- Template Font Size:**
  - Font size: 4
- Template Width:**
  - Template Width: Specified in percentage (fluid)
  - Specified width: 97
- Template Styles:**
  - Header Themes: blue
  - Background Themes: lighter
  - Primary Elements: red

Figure 5.21 Template Edit

**Step 12.** Edit Global Configuration of the website.

→ Go to the control panel and click on “Global Configuration”.

→ Write the offline message when the website is out of service for the maintenance. Type the name of the website “Indiandculture”

→ Write Indiandculture-A Dynamic Portal in the Global site Meta description.

→ Write Indian Culture in Global site meta keyword.

→ Click on “Save”.

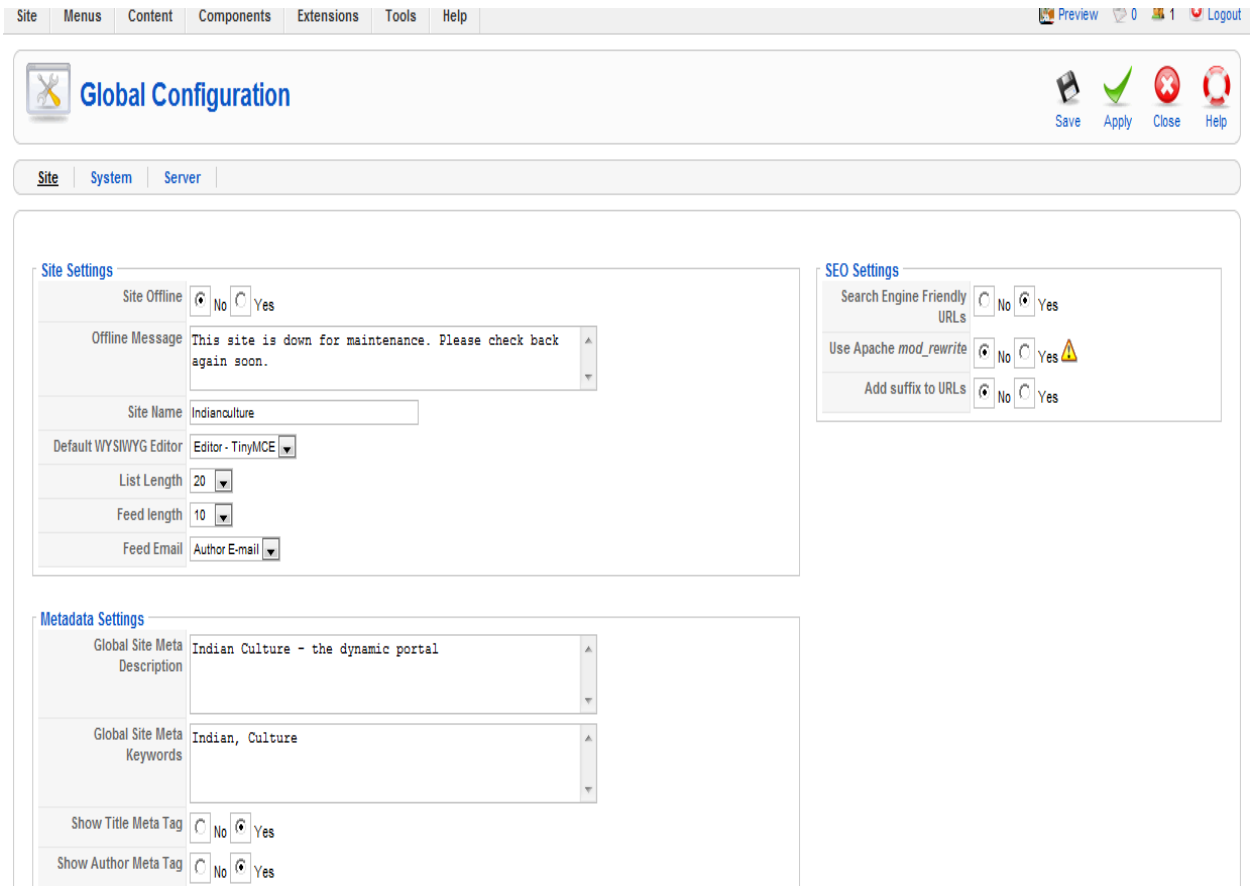


Figure 5.22 Global configuration

**Step 13.** Module Manager is used to manage the modules.

➔ Go to the control panel and click on Module Manager.

➔ Tool bar

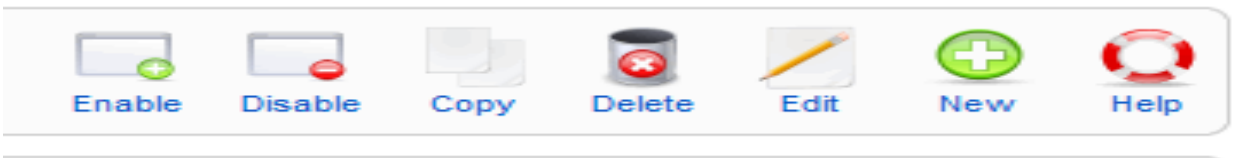


Figure 5.23 Tool bar of Module Manager

➔ To disable any module first select the module and then click on “Disable”.

➔ To delete any module first select the module and then click on “Delete”.

#	Module Name	Enabled	Order	Access Level	Position	Pages	Type	ID
1	Breadcrumbs	✓	1	Public	breadcrumb	All	mod_breadcrumbs	35
2	Banners	✓	1	Public	footer	All	mod_banners	30
3	Footer	✓	2	Public	footer	All	mod_footer	33
4	Main Menu	✓	2	Public	left	All	mod_mainmenu	1
5	Resources	✓	3	Public	left	Varies	mod_mainmenu	31
6	User Menu	✓	4	Registered	left	All	mod_mainmenu	17
7	Statistics	✓	5	Public	left	None	mod_stats	20
8	Login Form	✓	6	Public	left	Varies	mod_login	18
9	Archive	✓	7	Public	left	None	mod_archive	23

Figure 5.24 Module Manager

- ➔ To edit any module first select that module and then click on “Edit”.
- ➔ To create a new module click on “New”.
- ➔ To copy a module click on “Copy”.
- ➔ Click on Help If any type of help is needed.

## 5.2 Front end of the Website



Figure 5.25 the front page of website

➔ Click main menu to explore the other pages.

### 5.2.1 Login form:

If you are a new user than click on create an account and for that you have to fill a form.

The screenshot shows the registration form on the Indian Culture website. The header is the same as in Figure 5.25. The main content area is titled "Registration" and includes a breadcrumb "Home > New". The form has five input fields: Name, Username, E-mail, Password, and Verify Password. Each field has an asterisk (\*) next to it, indicating it is required. Below the fields is a note: "Fields marked with an asterisk (\*) are required." and a "REGISTER" button.

Figure 5.26 Registration form

➔ Fill up the form and click on “register” and will send a confirmation link to your mail id.

## Chapter 6

# Dynamics of Mind and Cultural Computing

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Cultural Computing is the Inter-Disciplinary branch which evolved from the HCI (Human Computer Interaction). HCI can be broadly summed up to, “Human + Computer + Interaction between them”. The inclusion of human component closely relates it to Human Psychology and computational part focuses on the technological aspects. So as to gain the basic understanding how Human Computer Interaction evolved and added a new paradigm “Cultural Computing”, we need to explore various aspects of “Human Computer Interaction”, Human Psychology and more importantly, Culture.

### 6.1 HCI (Human Computer Interaction)

As the name suggests, “Human Computer Interaction” means how the human interact with the computer. As described in literature survey, it seems quite obvious that the present state of affairs for the interdisciplinary field of HCI is in the explorative phase [3] though it may be able to move on to the paradigmatic phase in the near future. This statement does not necessarily exclude the possibility that different research communities contributing to HCI are already in a paradigmatic, or even in a post-paradigmatic phase.

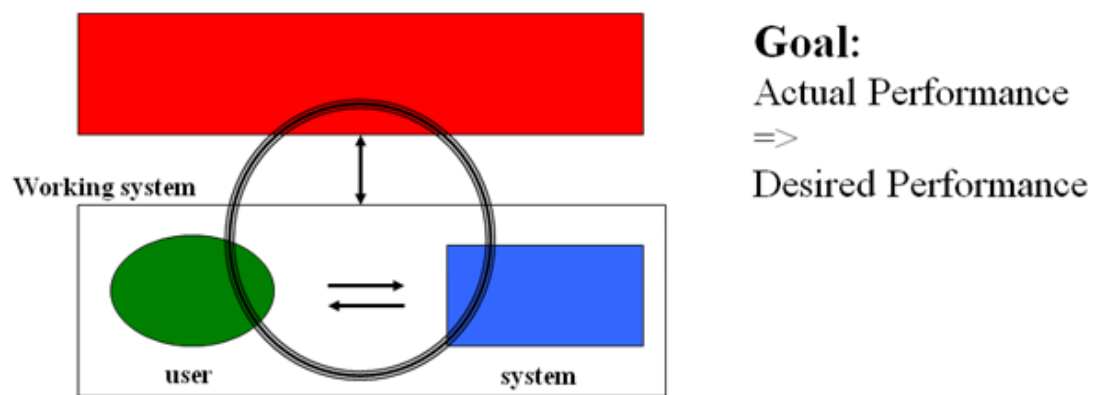


Figure 6.1 Human-computer-Interaction [3]

According to Grudin [4], the origin of HCI can be located between human factors and ergonomics on the one hand [5], and software engineering on the other [6], without being merged with one of these two but cannibalizing both.

According to Hartson [7], HCI is “Cross-disciplinary in its conduct and multidisciplinary in its roots.”

### 6.1.1 Different paradigms of Human Computer Interaction

From a historical perspective, Human-Computer Interaction (HCI) has evolved over more than five decades. Although the history of HCI is rich and complex, Raturberg has summarized some of the major paradigms in [8] that are:

- i. Personal Computing
- ii. Cooperative Computing
- iii. Social Computing
- iv. Cultural Computing

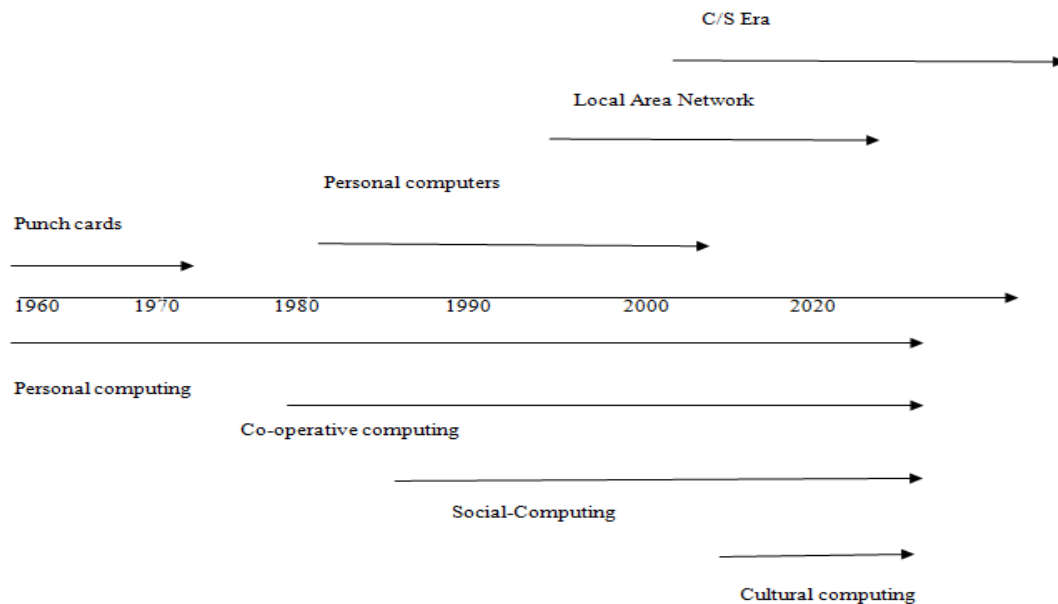


Figure 6.2 the different paradigm of Cultural Computing

The new paradigm added to Human Computer Interaction also added new discipline “Culture” in the list of “multi-disciplinary” field of “Human Computer Interaction”.

The Human Computer Interaction is discussed above briefly and there exist need to explore “Human psychology” to understand its evolution. The word “Human” added new dimension to this interaction. The Human personalities play an important role to understand this interaction.

#### iv. Cultural Computing

Cultural computing addresses underlying and almost unconscious cultural determinants that have since ancient times a strong influence on our way of thinking, feeling and world-view in general. Cultural Computing has some properties as the HCI. The ease of use and positive experience is the main focus of Cultural Computing.

User is a Human being so it's needed to understand the Human personalities to understand the user and it can help us out in finding the way to improve the user's experience. Human psychology is the wide subject but here the main focus is laid on "Human personalities".

### **6.2 Theories of Personalities**

There are many theories of personalities which help us in understanding Human Personalities.

Several Psychologists have proposed their theories but the most popular ones are:

#### **6.2.1. Freud Theory of personality**

#### **6.2.2. Jung Theory of Personality**

#### **6.2.3. Alfred Alder**

Here the main focus is on Jung theory of personality. Jung theory is the basic of several concepts of Cultural Computing. As stated above HCI is "Cross-disciplinary in its conduct and multidisciplinary in its roots." As Cultural Computing is the paradigm of HCI so it is also cross-disciplinary in its conduct and multidisciplinary in its roots. To understand Culture Computing, it is necessary to understand Human Psychology, Culture and Computing.

**6.2.1. Freud Theory of personality-** According to Freud Personality consists of three systems:

- i.** Id
- ii.** The Ego
- iii.** The Superego

**i. Id:** It consists of everything psychological that is inherited and that is present at birth. It also includes instinct. It represents the inner world of subjective experience and has knowledge of subjective reality. Id may be thought as biological component of personality.

**ii. The Ego:** The Ego comes into existence because the needs of the organism require appropriate transaction with the objective world of reality. However, the ego is the organized portion of the Id but it comes into existence in order to forward the aims of the Id.

**iii. The Superego:** It is the internal representative of the traditional values and the ideals of the society as interpreted to the child by its parents and enforced by the means of a system of the reward and punishments imposed upon the child.

The Superego is the moral arm of the personality.

Freud theory of personality is the basic of many personality theories and later many psychologists added their different theories of personality as Jung did.

### **6.2.1 Jung's Theory of Personalities**

Jung's theory of personalities can explain the human's behavior. It explains how the personality of a human being is formed. Jung theory of personalities is usually identified as psychoanalytic theory because of the emphasis that places upon unconscious processes. Human behavior is conditioned not only by individual and racial history (causality) but also by aims and aspirations (teleology).

#### **The structure of personalities:**

The total personality or psyche, as it is called by Jung, consists of a number of differentiated but interacting systems.

These are as follows-

- i. Ego or Conscious mind
- ii. Personal unconscious and its complexes
- iii. Collective unconscious and its archetypes
- iv. The persona
- v. The anima and animus
- vi. The shadow
- vii. The Self

**i. Ego or Conscious mind** - Ego means I, Me, and Myself. It is conscious mind. Here ego = Conscious perceptions + Memories + Thoughts + Feelings. It is responsible for our feeling of identity and continuity.

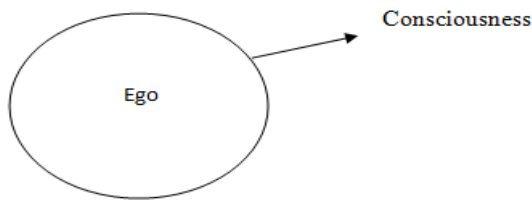
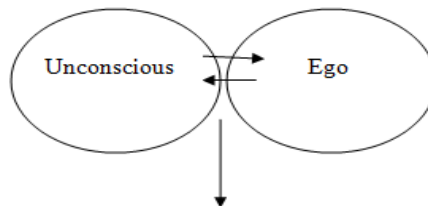


Figure 6.3 the Ego

**ii. The Personal Unconscious and its complexes** - It consists experiences that were once conscious but they have been Repressed + Suppressed + Forgotten + Ignored + Too weak experiences to make a conscious impression on persons.



Two way traffic between Unconscious and Ego

Figure 6.4 the interaction between Unconscious and Ego

The content of personal unconscious are accessible to conscious or Ego and there exist two way traffic between them.

**Complexes:** A complex is a group of feelings, thoughts, perceptions and memories that exist in the personal unconscious. It has a nucleus that attracts various experiences.

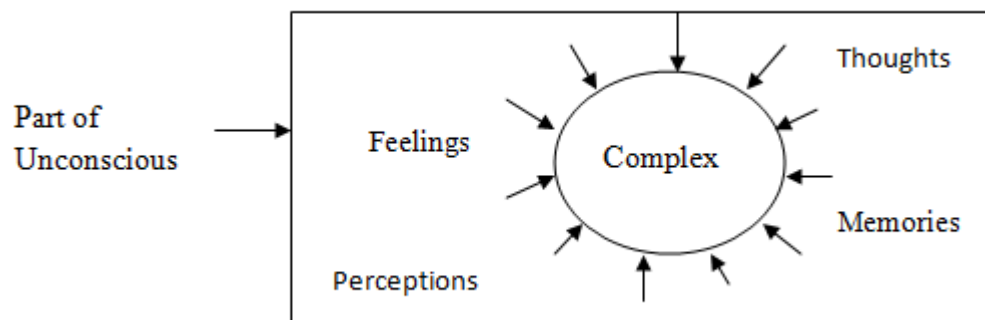


Figure 6.5 the Complex

### **iii. Collective unconscious and its archetypes**

“Here we mainly focus on Collective unconscious and its archetypes.”

Collective Unconscious- It is the store house of latent memory traces inherited from one’s ancestral past [26].

Ancestral Past = Racial history of humans + pre-human or animal ancestry

The collective unconscious is the psychic residue of human evolutionary development, a residue that accumulates as consequence of repeated experienced over many generations. Every human being has its own “unconscious” but the unconscious that is common is known as “Collective unconscious”. It is universal means exist in everyone as it exists in everyone so Culture is closely related to “Collective Unconscious”. This is the main ingredient to understand the Culture.

#### **Archetypes-**

The archetype is a universal thought form that contains a large element of emotion. This thought form creates images and visions that correspond in normal waking life to some aspect of the conscious situation. For example the archetype of mother produces the mother figure that is then identified with the mother. In other words a baby inherits a performed conception of a generic mother that determines in part how baby will perceive its mother. The baby’s perception is also influenced by the nature of the mother and the child’s experience with her. The two determinants usually fit together compatibly because archetype is itself is a product of racial experiences with the world and these experiences are much same.

*How does an archetype originate?* Actually it is permanent deposit in the mind of an experience that has been constantly repeated for many generations. Archetypes are not necessarily separated from one another in collective unconscious. They interpenetrate and interfuse with one another. Archetypes can penetrate into consciousness by way of dreams, myths, visions, rituals, neurotic and psychotic symptoms and work of art contain a lot of archetype material.

**iv. The Persona-** Persona is the public personality. It represent those aspects that one display before the world. It is like mask that one wear before the society. As an example I behave like a kid before my parents and like a student before my teachers so in daily like we play many roles and for each role we carry a mask, that is persona.

**v. The Anima and Animus-** Masculine and feminine characteristics are found in both sexes. Jung connected the feminine side of men and masculine side of women to archetypes. The feminine archetype in men is called “anima” and the masculine archetype in women is known as animus.

**vi. The Shadow-** Human has evolved from lower form of life so humans have animal instincts. The shadow archetype is responsible for the human conception of original sins.

**vii. The Self-** Jung considered the self to be equivalent to the psyche or total personality. Jung discovered an archetype he found one that represented human striving for unity. The self is the midpoint of personality, around which all the other systems are constellated. It holds these systems together and provides the personality with unity, equilibrium and stability. If we picture the conscious mind with ego as it’s center, as being opposed to the unconscious, and if we now add to our mental picture the process of assimilating the unconscious, we can think of this assimilation as a kind of approximation of conscious and unconscious, where the centre of the total personality no longer coincide with ego, but a mid way between the conscious.

The self is goal of life. It’s a goal that people constantly strive for but rarely reach. Before a self can emerge, it is necessary for the various components of the personality to become fully developed and individuated.

As stated above that Collective Unconscious is universal means exist in everyone as it exists in everyone so Culture is closely related to “Collective Unconscious”. It is closely related to culture.

**To understand the culture more closely we also need to concentrate on another aspect of Human Behavior “Anthropology”.**

*“Actually Human personality is a compromise between the individuals own impulse and the demand and the interests of the other people. These demands of other people are represented collectively by the institutions and the **cultural patterns** to which the individuals are exposed.”*

To understand the cultural aspect it is also needed to understand the definition of “Anthropology”.

### 6.3 What Is Anthropology?

It is the classification and analysis of humans and their society, descriptively, culturally, historically, and physically. Its unique contribution to studying the bonds of human social relations has been the distinctive concept of culture, in anthropology, the integrated system of socially acquired values, beliefs, and rules of conduct which delimit the range of accepted behaviors in any given society [25]. Cultural differences distinguish societies from one another.

Cultural anthropology includes archaeology, which studies the material remains of prehistoric and extinct cultures; ethnography, the descriptive study of living cultures; ethnology, scientific study of the origin and functioning of human cultures.

**Here “Anthropology” contributes to the Cultural Computing as it is closely related to Culture.**

After discussion of Human Computer Interaction, Different theories of personalities and Anthropology it has been observed that they have some linkage. At some points they overlap and show some common traits so a new paradigm is needed that should address all these different fields.

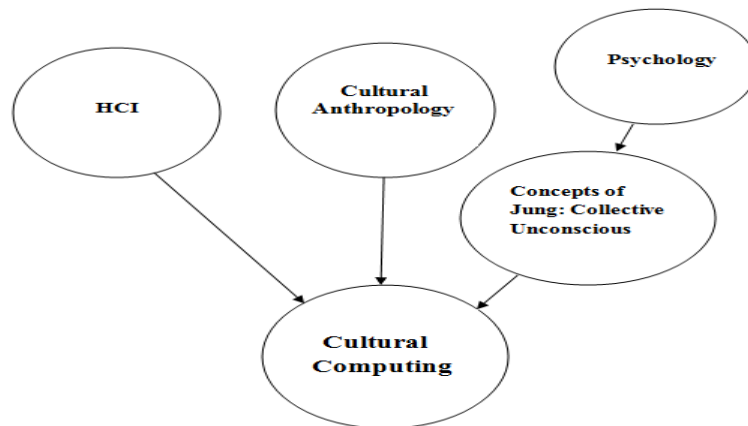


Figure 6.2 The Formation of Cultural Computing.

To understand the relation between the dynamics of mind and Indian cultural presence a survey has been done and data of some websites that responded to the queries has been

collected. By analyzing this data we can get impulse of visitors of these websites and their access patters and for what purpose they visit the specific website.

#### **6.4 The statistical data of some websites as collected using alexa.com and by response from the web administrator:**

Here we collected the data of 11 websites that responded to our queries and in the table 6.1 you can find the data of theses websites. Alexa tool bar use several parameters to study the access patters on websites. To understand the basics it's needed to explain certain data parameters. According to [www.Alexa.com](http://www.Alexa.com) the definitions of parameters are as follows-

##### **i. Traffic Rank**

The main Alexa traffic rank is based on a value derived from these two quantities averaged over time (so that the rank of a site reflects both the number of users who visit that site as well as the number of pages on the site viewed by those users). The three-month change is determined by comparing the site's current rank with its rank from three months ago.

##### **ii. Reach**

Reach measures the number of users. Reach is typically expressed as the percentage of all Internet users who visit a given site.

##### **iii. Page Views**

Page views measure the number of pages viewed by site visitors. Multiple page views of the same page made by the same user on the same day are counted only once. The page views per user numbers are the average numbers of unique pages viewed per user per day by the visitors to the site. The three-month change is determined by comparing a site's current page view numbers with those from three months ago.

##### **iv. Time on Site**

This is the sum of all times on page for a visit. Or, more accurately, it is the difference between the time they viewed the first and last pages in a visit. Note that viewing pages in different tabs doesn't affect this.

Table 6.1 the Statistical data of Websites

Sr. No	Name of the Website	Ranking	Reach/ Month	Page View/ User	Top Search Queries	Time on Site	Online since
1.	<a href="http://www.Hinduism.co.za">www.Hinduism.co.za</a>	42,485	0.0006 4	1.8	Vedic Maths, Durga Saptashati, Hiduism, Chanakya, Chanakya niti, Hinduism and Quantum Physics, Mind, Amazing Science, Oldest Civilization, Founder of Hinduism, Who am I? Women, Food	2.31667	-
2.	<a href="http://www.adishakti.org">www.adishakti.org</a>	108,978	0.0007 1	1.2	2012, age of Aquarius, 2012 prophecy. Mayan End	2.54167	8 Dec 1999

					Times and New Age, Dec 21, 2010		
3.	<a href="http://www.hindujagru ti.org">www.hindujagru ti.org</a>	7562	0.0024	1.9	Hjs, Vandematram lyrics, NCERT Books, Ram Setu, Miraj Riots, Panchmukhi Hanuman, Ganpati	2.04	5 Sep 2004
4.	<a href="http://www.esamskriti.com">www.esamskriti.com</a>	65159	0.0012		Yatra, Indian war with Pakistan and cease declared, Temple entrance, Indian Rebirth	2.24167	8 June 2000
5.	<a href="http://www.india-heritage.com">www.india-heritage.com</a>	-	0.00018	1.1	Indian Heritage, Indian Gods, Hindu Gods, Indian Culture	1.13833	11 Sep 2001

To understand the access patters on the bases of age, gender and nationality, the demographic data of these 11 website has been collected and closely analyzed. The brief description of the data is given in the table below:

### 6.5 The Demographic data of Websites:

Table 6.2 the demographic Data of Websites

Sr. No.	Website Name	Gender	Age	Country of Audience
1.	<a href="http://www.Hinduism.co.za">www.Hinduism.co.za</a>	Both Male & Female	25-64	United States, India, Canada, Indonesia
2.	<a href="http://www.adishakti.org">www.adishakti.org</a>	Both Male & Female	35-64	US, India, Canada, France
3.	<a href="http://www.hindujagruiti.org">www.hindujagruiti.org</a>	Both Male & Female but male dominates	18-24 55-64	India, Netherlands, US, United Kingdom, India and Others
4.	<a href="http://www.esamskriti.com">www.esamskriti.com</a>	Both Male & Female	25-34	India and Others
5.	<a href="http://www.india-heritage.com">www.india-heritage.com</a>	Both Male & Female	18-44	India, US and Others

The analysis of the data available and the comparison of the data reflect certain situation about the presence of Indian culture on the internet. One of the main objectives of the research is to bring forth the digital availability of the Indian culture on the internet. As

has been understood, the recent change in the outlook of the culture which is generally been referred to as the westernization of the Indian values has a wider and long term impact because of the internet. Especially the last decade has witnessed so many drastic changes at the cultural front. When the survey and research focusing these issues was led and it was found against the concept of connectivity of children on internet, Indian culture is rather presented as other cultures are promoted and reinforced.

Cultures, in the process of evolution, eventually fuse. The importance of computing lies in how western culture fuses with eastern through computing and a reasonable assumption is that the new composite culture which is majorly affected by internet has its long lasting effects. Therefore the purpose of Cultural Computing is not to accept or reject fusion of culture on individuals in particular and societies in general but to understand the impact of an external component computing on the cultural development and vice versa.

The survey shows lop sided fusion and development is after following a rigorous research, out of 111 websites only 11 websites representing Indian Culture were found to be useful and impactful and they had replied. Demographically, the age range pursuing cultural material on the Internet is 18-64. This is known for its diverse culture and even each state offers something new on cultural perspective. Mainly these cultural websites are individual vision and effort to bring forth the Indian Culture in limelight so that the new generation can get to know true Indian Culture. As clear from demographic data, most of the adults are eger to know about their Culture so it is the need to make presence of Indian Culture on web in an attractive way.

Another perspective on age shows that some websites got their audience in the range above 30 actually at this age youthful interests and pursuits lost their value and are replaced by new interest that are more cultural and less biological. The middle age become more introvert and less impulsive. Wisdom and sagacity take the place of physical and mentor vigor. The person's value are sublimated in social, religious, civil and philosophical symbols [26].

Besides age analysis country wise access to the web shows that mainly people from US, Canada, Indonesia, France, Netherlands, UK, out of 194 countries. The quest to know about Indian Culture is found among majorly 10 countries. There would be so many

reasons for this. One of them can be the lack of understanding about Indian Culture or misunderstanding for example: Indian based Harvard Professor “Tarun Khanna” writes that that in foreign countries the image of India and that should be reinforced and implemented through Cultural Computing. As example “Yoga”, it is really popular in the global world. Yoga is the peculiar to India. Other early cultures practice it, which resembles it in some ways, but none appear to have pushed the effort to achieve total introversion as far as ancient Hindus. Now a days everyone knows about yoga and its benefits so proper marketing is necessary to achieve the proper place in this globalised world and Internet is the best medium to spread that. As on even facebook one can find n number of pages totally dedicated to yoga.

The implementation of reach shows reach/month of the following websites reflects that its reach ability and access is as low as .00064 an comparison to others. The highest reach/month of these websites is 0.0024. That reach also does not reflect a brighter approach of availability of information of Indian Culture on Internet.

Though being a vast area is included in culture; the major topics that are being covered are wide ranging from Vedic maths to Durga Saptasiti, India/Pakistan to Hindu Gods. One of the websites even represents has female feticide and AIDS awareness among top topics of discussion. Wide range of topic shows that Internet users have great interest in wide range of topics and they are really interested to know in depth about their culture. This shows how other countries perceive India at this moment. Variety of topics can also be promoted.

The websites are online since 1999 so web presence of Culture websites is from last 11 years.

The point to ponder over here is to work this composite outcome of culture less biased. One of the purpose of Cultural Computing is to make the presence of all the cultures equally important on Internet. Reason being less personal of one culture and more presence of other cultures might lead to extension of less representative culture which hazardous effects on globalised world.

There exist many myths around related to Indian culture some even claim that it's backward in many respects as compared to western one then the need arises to publish the current version of Indian Culture. Every culture has its place in the world and it is the natural building block of individuals personality.

The psychical and cultural changes which take place in response to political, economic, technological and intellectual change are, from the psycho-analytic stand point, superficial, but they can be very great. Such changes are proceeding at an unprecedented pace in our time. Nevertheless, the basic personality structure is not entirely buried [27]. Therefore, it is implored that Cultural Computing has a wide scope in shaping individual and society both for the better civilization.

#### 7.1 Conclusion

Cultural Computing is the future of HCI (Human Computer Interaction). The strong presence of Indian Culture is needed to promote the right version of Indian Culture as there are many project that emphasis on Western Culture and Japanese culture. After the survey in this thesis work it has been found out that many website administrators are aware of the importance of web presence of Cultural websites and they are making their best efforts to promote Indian Culture but they don't aware of cultural computing. They are not that much technically sound and mainly derived by personal emotions to do something for Indian culture.

In this thesis work we have explored the statistical data of Indian Cultural Websites and found out some interesting facts about the web presence of Indian Culture. These facts can be used to increase the traffic of these websites and give proper insight about their popularity. In this thesis work a portal is developed to publish the links of several amazing websites about Indian culture.

#### 7.2 Future Work

This thesis work is only a small initiative to represent Indian Culture in the field of Cultural Computing. A lots of work need to be done in this field as:

- Digitalization of Indian ancient scriptures using computing.
- Digitalization of the Indian ancient science available.
- Representation of right factual knowledge to abolish certain myth about Indian traditions.
- Representation of right version of Indian Culture on the social networking websites to spread the knowledge among the masses.

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## **Appendix - A**

### **The list of websites visited for Survey**

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1. [www.culturopedia.com](http://www.culturopedia.com)
2. [www.indiaculture.net](http://www.indiaculture.net)
3. [www.hindustan.net](http://www.hindustan.net)
4. [www.mysticalguide.com](http://www.mysticalguide.com)
5. [www.nrityam.org](http://www.nrityam.org)
6. [www.indianetzone.com](http://www.indianetzone.com)
7. [www.indian-heritage.org](http://www.indian-heritage.org)
8. [www.india.gov.in](http://www.india.gov.in)
9. [www.iccrindia.org](http://www.iccrindia.org)
10. [www.indiaculture.nic.in](http://www.indiaculture.nic.in)
11. [www.thebestofindia.com](http://www.thebestofindia.com)
12. [www.kamat.com](http://www.kamat.com)
13. [www.esamskriti.com](http://www.esamskriti.com)
14. [www.indianmirror.com](http://www.indianmirror.com)
15. [www.indiasite.com](http://www.indiasite.com)
16. [www.danceroutes.com](http://www.danceroutes.com)
17. [www.iispirituality.org](http://www.iispirituality.org)
18. [www.iloveindia.com](http://www.iloveindia.com)
19. [www.spicmacay.com](http://www.spicmacay.com)

20. [www.ayurvedandindia.com](http://www.ayurvedandindia.com)
21. [www.ayurveda.org](http://www.ayurveda.org)
22. [www.greenlotustherapies.com](http://www.greenlotustherapies.com)
23. [www.indiavideo.org](http://www.indiavideo.org)
24. [www.thecolorsofindia.com](http://www.thecolorsofindia.com)
25. [www.yicg.com](http://www.yicg.com)
26. [india\\_resource.tripod.com](http://india_resource.tripod.com)
27. [www.indialine.com](http://www.indialine.com)
28. [www.indianchild.com](http://www.indianchild.com)
29. [www.craftsinindia.com](http://www.craftsinindia.com)
30. [www.bestindiansites.com](http://www.bestindiansites.com)
31. [www.thisismyindia.com](http://www.thisismyindia.com)
32. [www.indiaprofile.com](http://www.indiaprofile.com)
33. [www.indiaart.com](http://www.indiaart.com)
34. [www.craftandartisans.com](http://www.craftandartisans.com)
35. [www.iaca.com](http://www.iaca.com)
36. [www.nativecircle.com](http://www.nativecircle.com)
37. [www.theincredibleindia.org](http://www.theincredibleindia.org)
38. [www.sights-and-culture.com](http://www.sights-and-culture.com)
39. [www.arts.indianetzone.com](http://www.arts.indianetzone.com)
40. [www.indian.ru](http://www.indian.ru)

41. [www.heritage-india.com](http://www.heritage-india.com)
42. [www.india-discovery.com](http://www.india-discovery.com)
43. [www.indidivine.org](http://www.indidivine.org)
44. [www.indiaatbest.com](http://www.indiaatbest.com)
45. [www.indiamike.com](http://www.indiamike.com)
46. [www.indianexpress.com](http://www.indianexpress.com)
47. [www.indiancultureonline.com](http://www.indiancultureonline.com)
48. [www.indiaclub.com](http://www.indiaclub.com)
49. [www.hyderabadonline.in](http://www.hyderabadonline.in)
50. [www.indianweddingcustoms.weddingeventsindia.com](http://www.indianweddingcustoms.weddingeventsindia.com)
51. [www.mynationindia.com](http://www.mynationindia.com)
52. [www.explore2india.com](http://www.explore2india.com)
53. [www.maharashtraweb.com](http://www.maharashtraweb.com)
54. [www.indopedia.org](http://www.indopedia.org)
55. [www.belurmath.org](http://www.belurmath.org)
56. [www.hindubooks.org](http://www.hindubooks.org)
57. [www.koausa.org](http://www.koausa.org)
58. [www.wahindiawah.com](http://www.wahindiawah.com)
59. [www.haryana-online.com](http://www.haryana-online.com)
60. [www.indianomy.com](http://www.indianomy.com)
61. [www.hinduism.co.za](http://www.hinduism.co.za)

62. [www.thehorizons.com](http://www.thehorizons.com)
63. [www.indiavisitinformation.com](http://www.indiavisitinformation.com)
64. [www.jambudvipa.net](http://www.jambudvipa.net)
65. [www.boloji.com](http://www.boloji.com)
66. [www.indiacultureblog.com](http://www.indiacultureblog.com)
67. [www.yugayatri.in](http://www.yugayatri.in)
68. [www.indian-culture.meetup.com](http://www.indian-culture.meetup.com)
69. [www.explore.oneindia.in](http://www.explore.oneindia.in)
70. [www.aboutindianculture.co](http://www.aboutindianculture.co)
71. [www.oneindia.in](http://www.oneindia.in)
72. [www.anonlineindia.com](http://www.anonlineindia.com)
73. [www.advaita-vedanta.org](http://www.advaita-vedanta.org)
74. [www.e-pao.net](http://www.e-pao.net)
75. [www.hindujagruti.org](http://www.hindujagruti.org)
76. [www.guideindia.co.in](http://www.guideindia.co.in)
77. [www.adishakti.org](http://www.adishakti.org)
78. [www.ignca.nic.in](http://www.ignca.nic.in)
79. [www.trustheritage.org](http://www.trustheritage.org)
80. [www.indiavisitinformation.com](http://www.indiavisitinformation.com)
81. [www.bhagavathgeetha.com](http://www.bhagavathgeetha.com)
82. [www.youngintach.org](http://www.youngintach.org)

83. [www.indiaonweb.com](http://www.indiaonweb.com)
84. [www.sabsebada.com](http://www.sabsebada.com)
85. [www.devi.net](http://www.devi.net)
86. [www.culturalsavvy.com](http://www.culturalsavvy.com)
87. [www.indianculturepromotion.com](http://www.indianculturepromotion.com)
88. [www.kgfindia.com](http://www.kgfindia.com)
89. [www.iccr.tripod.com](http://www.iccr.tripod.com)
90. [www.indianartsandculture.org](http://www.indianartsandculture.org)
91. [www.sanskriti.com](http://www.sanskriti.com)
92. [www.myindiamylove.com](http://www.myindiamylove.com)
93. [www.jainstudy.org](http://www.jainstudy.org)
94. [www.sanskritcenter.org](http://www.sanskritcenter.org)
95. [www.bhavan.net](http://www.bhavan.net)
96. [www.akhandjyoti.org](http://www.akhandjyoti.org)
97. [www.hindunet.org](http://www.hindunet.org)
98. [www.allindiaarts.com](http://www.allindiaarts.com)
99. [httpwww.biharlokmanch.org](http://www.biharlokmanch.org)
100. [www.garamchai.com](http://www.garamchai.com)
101. [www.allindiaarts.com](http://www.allindiaarts.com)
102. [www.ichf-us.org](http://www.ichf-us.org)
103. [www.jnicc.org](http://www.jnicc.org)

**104.** [www.india\\_resource.tripod.com](http://www.india_resource.tripod.com)

**105.** [www.shripuram.org](http://www.shripuram.org)

**106.** [www.spiritandsky.com](http://www.spiritandsky.com)

**107.** [www.iish.org](http://www.iish.org)

**108.** [www.Hinduwebsite.com](http://www.Hinduwebsite.com)

**109.** [www.gatewayforindia.com](http://www.gatewayforindia.com)

**110.** [www.hinduwisdom.info](http://www.hinduwisdom.info)

**111.** [www.dances.iloveindia.com](http://www.dances.iloveindia.com)