EXPLORE CULTURAL HERITAGE OF GUWAHATI

A Report Submitted in Partial Fulfillment of the Requirements for the 6thSemester B.Tech.Summer Internship

(Mode of Internship is ONLINE)

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DECLARATION

EXPLORE CULTURAL HERITAGE OF GUWAHATI

I declare that the presented work represents largely my own ideas and work in my own words. Where others ideas or words have been included, I have adequately cited and listed in the reference materials. I have adhered to all principles of academic honesty and integrity.

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ACKNOWLEDGEMENT

First of all it is a great pleasure to express my gratitude to NIT Silchar ,Assam for giving me this opportunity to be a part of this project. This report has been prepared for the internship that has been done in the National Institute of Technology, Silcharand in order to explore the cultural heritage parts of Guwahati. The aim of this internship is to be familiar to the real smart cities and implement those changes in Guwahati, so I have successfully completed the internship and compiled this report as the summary and the conclusion that have drawn from the internship experience. I would like to express my sincere gratitude to my internship coordinator Dr Malaya Dutta Borah ma'am who have given her valuable time and given me chance to learn something despite having her busy schedule and her great guidelines for internship. I am also thankful to Pranita Baro ma'am for her co-operative support and Lastly, I would like to thank Deepali Jain ma'am who helped me to clutch the rear opportunities to learn the real world situation. I am very grateful to all the teachers and seniors for providing several documents, papers, data, figures and services as well as sharing their experience with me and teaching me different techniques to build this project for to operate effectively and efficiently. Thus, the time in NIT Silchar very audacious and supportive to my career through which I have gained valuable work experience that will help definitely makes a favorable impression on me as a prospective future employer.

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ABSTRACT

This paper investigates how the historical and cultural heritage of cities is and can be underpinned by means of smart city tools, solutions and applications. Smart cities stand for a conceptual technology-and-innovation driven urban development model. By becoming `smart', cities seek to achieve prosperity, effectiveness and competitiveness on multiple socio-economic levels. Although cultural heritage is one of the many issues addressed by existing smart city strategies, and despite the documented bilateral benefits, our research about the positioning of urban cultural heritage within three smart city strategies (Barcelona, Amsterdam, and London) reveals fragmented approaches. Our findings suggest that the objective of cultural heritage promotion is not substantially addressed in the investigated smart city strategies. Nevertheless, we observe that cultural heritage management can be incorporated in several different strategic areas of the smart city, reflecting different lines of thinking and serving an array of goals, depending on the case. We conclude that although potential applications and approaches abound, cultural heritage currently stands for a mostly unexploited asset, presenting multiple integration opportunities within smart city contexts. We prompt for further research into bridging the two disciplines and exploiting a variety of use cases with the purpose of enriching the current knowledge base at the intersection of cultural heritage and smart cities.

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CHAPTER-1

INTRODUCTION

The project entitled EXPLORE CULTURAL HERITAGE OF GUWAHATI is a pilot project for a Ministry Of Cultural Affairs (Guwahati) to manage their Cultural Heritage System. The basic aim of the implementation of such management system to increase the higher visitor ratio and to provide the information to the users for the exploring Guwahati and its heritage Online.

The platform we have opted for this system is Cloud Platformis provided by “SALESFORCE” . The important aspect of cloud deployment is to simplification of infrastructure. Sales force management is a key functional activity and should contribute to the successful implementation of cultural heritage strategy.

The main purpose of developing this project to provide user information on the basis of “ Guwahati and its culture” being presently used in the higher cultural heritage management system for storing and retrieving the information of various historical sites who are registered in Guwahati and its Culture.This project also provides the details of its user in a database for the admin to their process of managing and storing records. This system can stores all the personal information of the users like their personal details,their percentage,their skill set,images,hobbies,emails,contact number etc.

MOTIVATION

Currently there is a large movement in the Assam Tourism Development Corporation (ATDC)to streamline processes and improve currentmethods to ensure tourists get to know about the culture, history and heritage of Guwahati. As with any business, this effort is difficult without an information at your fingertips" type of application. A well-designed web application for ATDC is a large improvement over the current methods of managing users and allows quick responses to upper management requests for information used to make cultural heritage sites decisions. Several problems with the current system have been identified. The current system would benefit from a various cultural Heritage sites of Guwahati record repository and communications platform in which all pertinent records are kept and from which, one can visit any place and can also calculate the tentative distance while sitting at his home. While currently in a state of transition from the old system to the new one, the EXPLORE CULTURAL HERITAGE SITES OF GUWAHATI assists user tofeedback us and share their views on various social media platforms. Additionally it should improve communication among us by using a common interface where information can be retrieved and stored while eliminating the data redundancy issues. Further, the primary objective of this project is to showcase the heritage sites in Guwahati to domestic and foreign visitors by sitting at one place only.

PROBLEM DEFINITION

An approach to investigate application of Cloud based delivery model for Cultural Heritage in Guwahati.

OBJECTIVES

- To study the emerging technologies that transforms a city to smart city.
- To Study about Cultural Heritage available in Guwahati,Assam.
- To study Cloud as a service in context of Smart CulturalHeritage.
- To investigate the use of Cloud based delivery model for Cultural Heritage in SmartCities
- To design and development of Cloud based delivery model for Cultural Heritage in SmartCities.

PROJECT OVERVIEW

The project focuses on developing an autonomous online management application that manages the historical sites and its visitors records and keeps a track over it i.e. how many users are in total, how many of them have visited our application , and how many of the users have shared the posts also, whether a user has given the feedback or not , it is managing all by itself i.e. one application-many functions and last but not the least, it has dashboard which gives apictorialand tabular representation of the same.

FUNCTIONAL REQUIREMENTS

PRODUCT- FEATURES

- Multi user : It allows multiple users to access the application parallely.
- Works in dynamic environment
- Can accommodate changes easily

ACTIONS

It varies from user to user since it is a multi-user application. If a user is

ADMIN

- Enter LoginDetails
- Manage user details
- View users who have givenfeedbacks
- ManageDashboard
- Upload anycontent

Admin will records details of of users visited , and a list of users will be created containing records of users who have feedback us at backend and at last will show the details of all users in the dashboard innumbers.

STUDENT

- Enter LoginDetails.
- Visit the cultural Heritage sites ofGuwahati.
- Review and share according to hisopinion.
- Feedbackus.

- Logout.

Student can only view and share the content and feedback us.

NON FUNCTIONAL REQUIREMENTS

- Availability:It is 24*7 accessible from any remotelocation.
- Capacity:It can record details of about 50000+ users & if the requirement is furthermore, more resources can be allocated by requesting the service provider i.e.Salesforce.
- User Experience: An User Experience would be user friendly since it is easy to access, easy to manage, easy toread.

SYSTEM REQUIREMENTS

This application can run on any computer with an internet connection and support the following browsers.

BROWSER	**COMMENTS**
Google Chrome, most recent latest version	Chromeapplies updates automatically. Salesforce makes every effort to test and support the most recent version. There arenoconfigurationrecommendations for Chrome
Mozilla® Firefox®, most recent stable version.	Salesforce makes every effort to test and support the most recent version of Firefox.
Microsoft® Internet Explorer® versions 9, 10, and11	If you use Internet Explorer, we recommend using the latest version that Salesforce supports. Apply all Microsoft software updates.
Apple® Safari® versions 5.x, 6.x and 7.x on Mac OS X	There are no configuration recommendations for Safari.

CHAPTER-2

LITERATURE-SURVEY

EXISTING SYSTEM

A survey has been made in various projects of Smart cities. We'll try to cover some case studies here:

TO STUDY ABOUT THE EMERGING TECHNOLOGIES THAT TRANSFORMSA CITY TO SMARTCITY

The emerging technologies have the potential of transforming the urban centers and cities in smart cities. This potential can be translated into various types of benefits provided to cities and citizens. Internet of Things (IoT),Cloud Computing blockchain are presented as the most promising technologies for enhancing the cities modus operandi. The research project on "Transforming urban centers into smart cities with emerging technologies" is part of the research line on "Emerging Technologies for Digital Transformation in the Public Sector" . The purpose of this research project is to explore how emerging technologies, such as Blockchain, Internet of Things (IoT), Big Data, Data Analytics, Artificial Intelligence (AI), machine and cognitive learning can transform the public sector, service delivery, decision-making, and support the sustainable development. This research line focuses on the adoption process and use-cases driven by the opportunities, benefits, potential weaknesses, and risks associated with new technologies and concepts in innovation and digital transformation. The project aims at developing a framework for transforming urban centers into smart cities with emerging technologies. The objectives of the framework are to analyze and observe the requested elements for the transformational process from a socio-technical perspective as well as to define the benefits resulted from the application of the emerging technologies into the cities. This framework can be proposed to government's decision-makers, officials and consultants in order to better understand and analyze the transformational effect, the potential of these technologies for enhancing smart cities and the foreseen benefits that can berealized.

CASE STUDY-1:BIRMINGHAM

Digital Birmingham (a council-owned partnership organisation) formed a Smart City Commission in July 2012 and launched the Birmingham Smart City Roadmap in March 2014. The roadmap sets out 49 actions grouped under three main themes: Technology and Place (which involves improving broadband connectivity and sharing open data), People (focusing on digital inclusion, improving citizens' ICT skills and implementing new business procurement processes) and economy (mainly around digitalising social care, improving energy efficiency and smart mobility). The roadmap will also build on Digital Birmingham's existing projects, such as investment in ultrafast broadband and a number of initiatives aimed to improve technology skills and encourage the use of data (such as Go on Birmingham and Hello Business). Through the Urban Traffic Control Major Scheme, £26 million was invested in integrating transport data from different agencies (highways agency, police etc.) into a single platform and the city is also participating in EU funded smart initiatives such as the Smart Spaces project and Discover.[17]

CASESTUDY-2:BRISTOL

Smart City Bristol, launched in 2011, aims to use smart technology to meet its ambition of reducing CO2 emissions by 45 per cent by 2020. The strategy, led by the council's Smart Cities team, focuses on smart transport, smart energy and smart data and includes pilot projects (such as 3e-Houses and Smart Spaces) which are mostly funded by the EU. Currently the city is exploring new mechanisms and sources of funding to scale up these projects, mainly through looking at international case studies and learning what models can be imported and used. In April 2013, the city was also granted £3 million from TSB through the Future Cities Demonstrator Programmetoopen its City Living Lab which will combine data from different sources and host hack events in order to encourage citizens and businesses to use them. The city council is also implementing a number ofchallenges and gathering citizens' feedback through initiatives such as the Bristol Open Data energy challenge and 'George's idealab'.[17]

TO STUDY ABOUT CULTURAL HERITAGE AVAILABLE IN GUWAHATI

India is one of the mostly preferred destinations for international tourists. Tourism is a very promising industry in India.India is a country with a large number oftourist spots and attractive features. India is a country known for its cultureheritage, history and natural resources. All the states and union territories have a good number of locations catering tothe domestic and international tourists. Assam is a state in northeastern India, south of the eastern Himalayas alongthe Brahmaputra and Barak Valley. Assam is known for Assam tea and Assam silk. The first oil well in Asia was drilled here. Assam and adjoining regions have evidences of human settlements from all the periods of the Stone ages.The hills atthe height of 1,500–2,000 feet (460 to 615 m) were popular habitats probably due to availability of exposed doleritebasalt, useful for tool-making.[12]

VARIOUS CULTURAL HERITAGE PARTS OF GUWAHATI

1.KAMAKHYA TEMPLE:The sculptures of the Kamakhya temple are the earliest example of thesculptural art of Assam. The sculptures of the Kamakhya temple reflect the characteristic features of different times due to the reconstruction of the temple in many times.Sculptural evidences informed that the sculptural activities were started from the Gupta times. Numerous sculptural pieces show the influence of Gupta art. For example, the most of the life size images of the garbhagriha reflect the idea of Gupta artistic style. Besides, some floral motifs are influenced by the Gupta art. Among the different subject matters, religious sculptures occupy the most of the surfaces of the temple. Among the religious images, most of them are displayed on the surfaces on the outer walls of the garbhagriha. Of the images, Siva's terrific aspect plays predominant role due to the influence of Tantricism of the temple. The images are remarkable for liveliness in their poses and moods. These are carved with the great liberty, which is extremely bold as well as assertive.It can be said that the sculptures are influenced by the art of Orissa because the temple wall contains the animated motif like lion on the elephant is very similar to the art of Orissa, where this type of motif is used as the architectural devices. Among the secular subject matter, some unique representations are illustrated such as the mother and child, female engages in supplying water to a male, man carrying a load, robust male etcwhich are the infrequent

representations in the temple art. These kinds of compositions are applied to the temple art for giving the moral values. Some of the sculptural parts revealed that possibly any master artists created such types of rich works in this temple. Amalgamations of the life size images with the floral motifs of the outer wall of the garbhagriha provide an extremely pleasant look to the viewers. Dance poses of Apsaras and Gandharvas also produce the Shringar rasa. The Adbhuta rasa, which is the expression of wonder found in the floral designs as well as in geometrical designThe effects of light and shade on the sculptural images are important matter to the temple art. The life size images are carved out in high relief therefore, the figures well maintained the effects of light and dark shades in daylight.[2]

Fig 2.1 Kamakhya Temple

2.PEACOCK ISLAND: Peacock Island also known as Umananda Island (from Assamese Uma, another name for the Hindu goddess Parvati, the wife of Shiva; and ananda, "happiness") is the smallest river island in the midst of river Brahmaputra flowing through the city of Guwahati in Assam, a state in northeast India. The British named the island Peacock Island for its shape. According to Hindu mythology, Shiva created the island for his wife Parvati's happiness and pleasure. Shiva is said to have resided here in the form of Bhayananda. According to a myth in Kalika Purana, Shiva burnt Kamadeva with his third eye on Umananda when he interrupted Shiva's deep meditation, hence its alternative name Bhasmachal (Assamese: bhasma, "ash"; and achal, "hill"; literally, "hill of ashes").The Kalika Purana states that Urvasikunda is situated here and here resides the goddess Urvasi who brings Amrit (nectar) for the enjoyment of Kamakhya and hence the island got the name Urvasisland. It is believed that, worship here on Amavasya day when it falls on Monday brings the highest bliss. The Siva Chaturdasi is the most colourful festival that is held here annually. Many devotees come to the temple on this occasion for the worship of the deity.[3]

Fig 2.2 Peacock Island

3.ASSAM MUSEUM: In the present time the role of museum is not only confined to give amusement to the viewers. The notion of a museum gradually changed. It ceased to be just a collection of objects- what we today called vastu-sangrahalaya (treasure of objects). It began to be seen as an institution reflecting and imparting knowledge and education to the society. The Assam State Museum not only imparting knowledge by displaying various objects in its galleries but also organized seminars, lectures and exhibitions to popularize the importance of preservation and exhibition of cultural heritage of the reign. Besides the Museum has a regular publishing programme. The publication of any museum serves as the very important media of communications. Knowledge, in the trust sense of the term is transmitted from one individual to another or one generation to another. With these ethics, the Assam State Museum at Guwahati since last 76 years of its history has been rendering service to the people with best of it efforts andsincerities.[4]

Fig 2.3 Assam Museum

4.SILK LOOM IN ASSAM: There has been a tremendous change in the socio-economic scenario of the silk loom sector as a whole. The sector that had once attained global recognition and accreditation because of its uniqueness, beauty, artistic work has now lost its identity, charm and has failed to meet the requirement in the global market due to various factors. Efforts from the state as well as the central government along with the owners of the silk loom industries are necessary to save this heritage sector. The increase in wage is considered to bethemost important matter as low wage has been identified as the major problem of the weavers to maintain their livelihood. The government can subsidise the sector by providing credit, building necessary social, economic and financial infrastructure, arranging marketing campaigns worldwide. There should be the provision for loans with low interest rate for the explorations workers. Protection of the weavers and the sector should be identified as one of the major agenda. They must get the benefit of various acts of the government for protecting the interest of workers. Sualkuchihas to depend for raw materials from outstation markets which are costly. Therefore, the government should monitor the price by putting a standard level for all the goods and materials so that it will be accessible to the owners and weavers at an affordable budget. There is also an urgent need to put a ban on the selling of cheap materials imported from other places in the name of original silk products, because these low quality machine-made materials have brought defamation to the

traditional silk loom sector. This has led to loss of work for many weavers. It is also very important to improve the relationship between the owners and the workers in this sector. Proper health and education facilities should be there for the workers and their children. Establishing cooperative societies for the workers, providing salary on time, training, funding, supply of raw materials, creating more employment opportunities and ensuring regular work in the sector, ensuring better work environment are viewed as important factors for the overall development of the sector and livelihood of theworkers.[5]

Fig 2.4 Silk Loom in Assam

5.SARAIGHAT BRIDGE: Saraighat Bridge is the first of its kind a rail-cum-road bridge built over the river Brahmaputra in Assam. Saraighat Bridge is the vital link between North East region and the restof the country. Built immediately after the Indo-Chinese war it has already completed 50 years of its existence in2012.The bridge has a national highway on top and railway tracks below. National highways 31 & 27 run on this Bridge to and from Guwahati. Total length of this bridge is 1492 meters (about 1.5 Km).TheSaraighat Bridge is one great place to hang-out if you wish to view the River Brahmaputra in all its glory. The pleasure of standing in the middle of the Bridge and view the Brahmaputra River in 360 degrees is unexplainable. For the photographers it is going to be a real treat since it provides awesome angles of the river, especially at sunset. After visiting the SaraighatGhat, go on a ferry ride from Guwahati underneath the bridge.In Guwahati River Cruises on River Brahmaputra is quite popular among tourists and locals. You have two main options, either venture out for a few hours on the river or take a full-blown cruise on the Brahmaputra.[6]

Fig 2.5 Saraighat Bridge

6.UMANANDA TEMPLE: The Umananda temple, located on the Peacock Island, is one of the important temples of Guwahati. Situated in the middle of River Brahmaputra, this temple is dedicated to the worship of Lord Shiva.

During the festival of Shivratri, every year, a large number of devotees visit this temple.On the instructions from King Gadadhar Singh of the Tai-Ahom dynasty, the temple was constructed in 1694 AD by Bar PhukanGarhganyaHandique. There are plenty of engravings and sculptures that adorn the rock walls of this temple. These engravings and sculptures depict the craftsmanship of the local Assamese artisans.The engravings done on the walls include Hindu gods like Surya, Shiva, Ganesha and Devi. Apart from these, sculptures of Lord Vishnu and his ten incarnations can also be found in the vicinity of this temple.The area where this temple has been raised is known as Bhasmachala. Therefore, the island on which this temple is constructed is also known as Urvashi Island.In 1897, a considerable portion of this temple was damaged owing to the effects of a devastating earthquake. However, the damaged portion was later reconstructed by a rich local merchant. On reconstruction, he also added Vaisnavite inscriptions to the interior part of this temple.According to a popular belief, it is said that worshipping here on an Amavasya day, especially falling on Monday, brings highest bliss to the worshipper. Apart from this, Shiva Chaturdashi is another important festival which is held here annually.The only way to reach this temple is to board ferries and motor launches available at the UmanandaGhat.[7]

Fig 2.6 Umananda temple

7.GUWAHATI PLANETARIUM: This is one of its kind centre of astronomical education and research in Assam and the entire North Eastern region of India The Guwahati Planetarium is unrivalled in Assam and rest of northeast India with its distinctive dome and sloping walls that sets it apart in the skyline of the area. The Planetarium uses the Japanese Goto instrument. The hardware includes the Chronos starfield projector, Digital HD video projectors, and the Dolby sky theatre's sound system. The show software is also supplied by Goto.Besides daily shows, the Planetarium also regularly organises seminars, workshops and conferences for the astronomy fraternity, and exhibitions, quizzes and outdoor viewing facilities during eclipses for students and the local community.Facilities at the Planetarium include a library.The Guwahati Planetarium, is a sincere attempt to reach the young and scientifically inclined minds and provide them a glimpse of the available treasure trove assembled over centuries by the human explorers. Apart from the regular Sky watching sessions conducted by the experts at the planetarium, special shows projected on a dome shaped overhead screen are the star attraction of the Planetarium. These shows are available in Assamese and in English and the timings are as convenient with enough entertainment at the planetarium museum and Science section to keep enthusiasts busy.The Planetariumhas a unique hybrid planetarium projection system, the first one of its kind in the entire northeast region. It is the secondplanetarium in India to get such a system, the first one being New Delhi Planetarium .Apart from the projection system, an astronomical gallery is soon going to be launched by the Creative Museum Designers(CMD) at the planetarium. The state science and technology department has already released funds for the upcomingproject.[8]

Fig 2.7 Guwahati Planetarium

8.VASHISTHA ASHRAM: Vashistha Ashram, located in the Sandhychal hills, is an important pilgrimage centre. Constructed in the second half of the 18th century, the temple was built by the Ahom king, Raja Rajeswar.This ashram is the last existing monument, which was constructed by the rulers of the Ahom dynasty. The ashram is the meeting point of three rivulets namely, Sandhya, Kanta and Lalita.According to a popular belief, it is said that a dip in the water enhances a person's life and also washes off the sins committed. In addition, there are several legends associated with sage Vashistha and this ashram.According to one of the popular legends, it was said that the hermit Vashistha used to perform his 'sandhya' in a stream near his ashram, which was also his home. The sage became agitated due to the ardent games played by Lord Indra with his queen Shachi and other heavenly women in the stream, as the water became impure.As a result of this, the sage cursed Indra that he would have sexual contact with a Daitya woman. This curse transformed Indra into a normal person and the curse of Vashistha also came true.However, Lord Indra granted the Daitya woman with a blessing that her son would become a king. Her son later became the progenitor of the Ahom Kingdom and was the ruler of the entire region of Assam. According to another legend, it is believed that the sage gained spiritual success by dwelling into the secrets of Sakta practices.[9]

Fig2.8 Vasistha Ashram

9.NEHRU STADIUM: Nehru Stadium, is a multi-purpose stadium in Guwahati, Assam, India and managed by the Board of Sports, Government of Assam. Radha Govinda Baruah supervised, constructed and named the stadium as Nehru Stadium. It is used both for football and cricket matches. The stadium holds 15,000 people at most and was built in 1962. So far it hosted 13 One Day Internationals matches and many matches of top domestic cricket tournaments like Ranji Trophy, Duleep Trophy and Deodhar Trophy. In football it regularly hosts prestigious Bordoloi Trophy and GSA Super Division League. The stadium also hosted Santosh Trophy and Federation Cuptournaments.[10]

Fig 2.9 Nehru Stadium

10.ASSAM ZOOLOGICAL CUM BOTANCICAL GARDEN: The Assam State Zoo and Botanical Garden is located near RG Baruah Road. Sprawling over an area of 130 hectares, it is the only zoo where there is a natural forest. On the other hand, the botanical garden is located within the same vicinity, which is also known as Guwahati's green retreat.Rich in flora and fauna, this zoo and botanical garden is also home to some of the rare and endangered species of wildlife. Swamp tapirs, white tigers, leopards and the great Indian one-horned rhinoceros are some of the animals that can be seen here. This zoo is also home to the African two-horned rhino and is rich in some of the rare species of birds.Established in 1982, the Assam State Botanical Garden is home to approximately 44 different varieties of orchids.. There are also some special varieties of orchids, which are typical to the mountainous region of the state. Apart from this, the garden also houses a variety of palm trees, conifers, herbs and shrubs. The garden sprawls over an area of 82hectares.[11]

Fig 2.10 Assam Zoom Cum Botanical Garden

TO STUDY CLOUD AS A SERVICE IN CONTEXT OFSMART CULTURALHERITAGE

The Smart Cultural Heritage combines all the -

- UrbanFactors
- the novel digitaltechnologies
- with tangible and intangible heritage of thecity

Smart Cultural Heritage could be developed using Fifth Generation (5G) network technologies, including Cloud Computing (CC), Mobile Edge Computing (MEC) or Fog infrastructures, sensors and IoT devices and services within the cultural places. In this context, the "as a Service" model which indicates the ability to reuse the cloud resources on demand could be considered. The main approach of the "as a Service" model is called as Software- Platform-Infrastructure (SPI). SPI refers to the three main delivery models of cloud based services, namely the Software as a Service (SaaS), the Platform as a Service (PaaS) and the Infrastructure as a Ser- vice (IaaS). The entire cloud computing solutions are based on the SPI.

This paper introduces a new delivery model for providing cloud based cultural ser- vices to users through advanced network infrastructures in Smart Cities environments. The proposed model is called Smart Cultural Heritage as a Service (SCHaaS) and aims to promote and preserve the cultural heritage through smart applications and participatory processes. This model also aims to be customized according the special cultural characteristics of a city and the needs of its citizens.

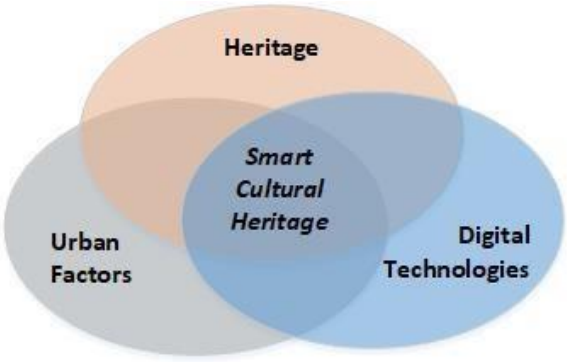

fig 3.1 pictorial representation of Smart Cultural Heritage

CASE STUDIES

- **PURE LAND CHINA:** Augmented Reality is among the technologies that enhance the cave's architectural and photographic representations with animation, 3-D modelling, pictorial recolouring, digital enlargement and sound design.[1]

- **REKRAI IN IRAQ:** it also used deconstruction and preservation technology to save the pictures of the archeologicalsites andmonuments.[1]

- **ZAMANI PROJECT:** The University of Cape Town and collaborators have spent over a decade documenting Africa's most important cultural and heritage buildings, sites and landscapes. The project teams have utilised data generated from GIS, 3D computer models and other spatial data. The site acts as a data repository with geo visualisations, model reconstructions, and panoramas.[1]

- **THE O DEVICE:** e O-device is a digital trail guide that uses an internal positioning system to locate the visitor in each of the exhibition spaces of MoNA. The O device presents different curatorial texts, video and audio about each ofthe artworks in the vicinity of the visitor. Content can be personalised and saved by the visitor for access later through a web browser. The visitor can directly download the O app to an iPhone, e.g., through wi-fi within MoNA, or use a MoNA O device. The O app can also be used off site.[1]

- **STREET MUSEUM MOBILE APP:** is an AR enabled App for smartphones for exploring a variety of historic landmarks and unique sights of London The App also allows users to select a destination from a London map. The user can access and download images, photos and paintings of the location from the Museum of London collections. The App can be downloaded to an iOS or an Android device and used from home and as a post visit experience.[1]

- **BARCELONA LANDSCAPE WEBAPP:** Meaning 'landscape' in Catalan, Paisatge is an interactive Webapp that provides a digital trail around the City of Barcelona to discover the city's architectural and landscape features. The App allows for real-time discovery of landmarks in the proximity of the visitor and sends alerts of events in the vicinity[1]

- **CANADA MUSEUM:** The Canadian Museum for Human Rights Mobile App Journey of Inspiration is a fully accessible selfguided tour using audio, images, text and video, interactive map, online ticketing, and information to help plan the visit Included is an interactive panorama (AR) feature and an interactive "mood meter" feature allowing the visitor to share how they feel and see the results of others as they move through theMuseum[1]

- **THE PEN:** The Pen is a high-tech device that enables visitors to collect "objects" from around the galleries and create their own designs on interactive tables. The Pen uses NFC-reading technology. At the end of a visit, objects collected or designed by the visitor using the Pen are accessible online through a unique web address printed on the visitor's ticket. These can be shared online and stored for later use in subsequentvisits[1]

- **THE COLLECTION WALL:** standing 5 feet by 40 feet, is a multi-touch MultiTile system that allows multiple users to explore the digital collections of CMA in real time and thematically. The Wall is updated every few minutes with high-resolution images, new exhibition data, and the frequency with which each artwork has been "favourited" on the Wall and/or from the ArtLens App (the CMA collections mobileapplication)[1]

- **SKIN & BONES:** is an AR application that superimposes a virtual world onto physical objects held in the gallery, by directing the camera of a device towards the object. With the App, visitors also test natural history skills playing games, such as identifying a bat by its distinctivecall[1]

- **AI WEI WEI:** The Ai WeiWei application provides the user with an immersive tour related to the Ai WeiWei exhibition held at the Royal Academy London, 20 January 2016 – 12 January 2017. The exhibition was captured in photorealistic stereoscopic 3D and consists of navigable 360° imagery, video and audio channels. A user can access the tour from the Royal Academy website, alongside commentary from the exhibition's curators and interviews with the artist.[1]
- **ULTIMATE DINASOURS:** The ROM Ultimate Dinosaurs App was designed for the 2012 Exhibition and made available for iPhone, iTouch and iPad to allow users to experience dinosaurs with AR enabled content and functions (e.g., scanning skeletal casts to bring them alive). The App could be used both in the exhibit itself and also outside by interacting with selected ROM advertising points across the Greater Toronto Area, including transit shelters and print advertising.[1]

TO INVESTIGATE THE USE OF CLOUD BASED DELIVERY MODELFORCULTURAL HERITAGE IN SMARTCITIES

With the help of cloud computing various services can be available on clouds and citizens of smart city can use these services very easily vie internet on their smart phones, laptops, PCs, tablets etc Now a days, Cloud computing is widely used in various fields. Cloud is just the metaphor of Internet. All things are available on clouds and users can use all applications, data as and when they need. How cloud computing is helpful for development of smart city and which network structure is good for maximum uses for infrastructure which is used for making the smart city with the help of cloud is also taken. The citizens of smart city can assess all application on their smart phones through clouds very easily.

All the tools and enablers that support data-based decision-making in a smart city magnify the flood of data challenges confronting municipal IT departments. Analytics, collaboration and Open Data can place substantial storage burdens on municipal IT systems. This is loud and clear in a recent survey we conducted in which 33% of government IT managers in the US cite "data storage growth" as their top IT challenge. Compounding the problem, the always-on, 24x7 expectations of government service availability means that IT managers need a sophisticated backup strategy, which may also need to comply with strict measures on the duration and means of storage. With the exponential growth in the amount and type of data, as well as the additional computing resources required by analytic-based decision tools, municipal IT departments will struggle to continually invest to maintain a traditional, largely inflexible, on-prem infrastructure to support these workloads. What municipal IT departments need is a new way to procure IT resources that can supplement current systems; one that enables the mayor, city council and departments to engage in data-driven decision-making and transition their city into a Smart City. Cloud computing is that new way.

Government has adopted cloud less quickly than other industries. Security and compliance concerns have historically been the main reasons keeping governments from being early adopters. However, this is changing as cloud service providers focus more on security and compliance issues, including in some cases offering government-certified versions of their services. As a result, government IT departments are increasing their use of cloud services. In fact, a recent Frost & Sullivan survey found that 37% of regional and local government IT managers in the US and Europe are currently using cloud computing, including software as a service (SaaS), while 57% are expected to be using it by2016.

CASE STUDY

Barcelona embarked on the smart city journey 10 years ago in an informal fashion resulting in many smart city projects now dispersed in various departments across the city, currently being collated under a single program. The Barcelona region, once in need of redevelopment, has been transformed into a living test site for piloting new technologies. XaviesTrias, mayor of Barcelona since 2011, has recognized the importance of digital technologies for the future prosperity of thecity.

In his words in outlining his commitment states that Barcelona "…should not waste the opportunity we have to apply these new technologies to improving people's quality of life, by generating a new "economy of urban innovation" based around smart cities. To progress this agenda he formed Urban Habitat, a government wide management structure to promote collaboration across water, energy, human services and environment agencies. Whereas, housing and urban planning were also grouped together. To further cement cross agency collaboration, the Smart City Personal Management Office, oversaw all projects with a smart city aspect. While there are over 100 projects with a smart city angle, 13 are highlighted as strategic for the smart future of Barcelona, tackling the necessary infrastructure to support smart city applications, kit out city assets with intelligent sensors, and define smart city publicservices.Tothis end, the telecommunications network is revamped to integrate fiber optic networks, and Wi-Fi networking, public and a centralized management system enabling the interoperability and prioritization of mobility, public transport and urban infrastructure, applying concepts such as priority and intermodality to make more efficient and sustainable mobility in cities. This is underpinned with intelligent data project collating information from smart assets and public service organizations with the view to opening these up to the public. New public services are progressed such as energy projects relating to the urban lighting of Barcelona, creating microgrids to create local generation and consumption of green energy, tele management of irrigation urban green spaces and electric car mobility options, as well as, smart parking options to enable speedy parking avoiding unnecessary city traffic. Citizens will have contactless and mobile apps to use cityservices.

Some projects focus more generally on a mentality change around smart city agendas. The O-Government project, for example, seeks to gain support for Open Government, strategy and roadmaps and improve transparency, 36 2 Big Data and Analytics for Government Innovation open data and civicparticipation.

The "Citizen compromise to sustainability 2012–2022" seeks to gain definition and traction for a city roadmap that can provide a more equitable, prosperous and self-sufficient environment to its people.The regeneration of the Barcelona region was a public-private partnership were companies, universities, research, and communities work in close

proximity with municipal leaders to exchange knowledge and streamline innovation, but also ensure inviting and engaging urban planning by subsidizing housing and developing green spaces. Local and international, private and public funding was used for infrastructure development and the testing of new public services. The government facilitated access to public funds by institutionalizing InnoActiva, a consultancy agency which to supports private companies to make their case to public authorities and institutions. Following the Silicon Valley cluster model, it is setting up clusters in areas that they can develop a competitive advantage. Hence, Barcelona region is oriented to attracting talent and expertise in Media, Information and Communication Technologies, medical technologies, energy and design. As to big data and analytics issues, open data is actually a core part of Barcelona's smart city event. Public and business access to information such as electionresults,population,public facilities,oreconomysitsinapublicrepositorycalledOpenDataBCN.Microsoftforexample utilized data relating to a town festival called "La Merce" as a pilot to providing improved crowd management solutions.

To this end, data feeds from social media, credit card transactions, web site visits, customer service inquiries, GPS data, traffic status, weather data, and parking was collected and analyzed. These data sought to gain insights about people's perceptions of the festival's entertainment and food venues, citizen interests, people mobility patterns, and medical and crime incidents that can help the planning and management of the next event (Vienna University of Technology 2014). The city also pilots the provision of services based on mobile identification technologies. Through a smartphone app, citizens can access information about parking tickets and car towing destinations, request public subsidies for nonprofit activities, and the like, providing a proof of concept and of technology and getting the necessary public engagement to move to the next level (Davenport and Prusak 1997). Consequently, public transport smart apps are ahead of their generation due to popular demand. In Barcelona transport information is based on a hyper-reality app. Anyone can obtain information on bus stop locations, location, lines and even be directed to it by simply pointing a smartphone camera in any direction, working wonders for citizens new to an area, tourists and even blind people who can be oriented towards their target destination using voice directions or Microsoft (2014). Public engagement also manifest in developmental work for the smart city. Sentilo, for example, is an open source sensor and actuator platform sponsored by the Barcelona City Council, and designed by an opencommunity.Barcelona's open-source, smart city platform, engages local talent in smart city development, ensures technology and provider independence and data stewardship and remains with the public, under its stewardship and safeguards civil liberties. With the view to establish the city's reputation as a smart city, Barcelona also drives the Smart City Protocol initiative which seeks to connect global cities in pilot projects to address common challenges (Bain and Sentilo 2014). Barcelona is a small cosmopolitan city with the vision to grow and an exemplar for smart city development that remains open, transparent, and democratic through an exchange of all capital resources from capital and infrastructure to knowledge and talent. While for most, smart city applications are still considered a nice-to-have feature in our city life, crisis management is the acid test for any smart application. All emergency services share a common requirement, when it comes to information management. They need to accurately analyze life critical, real-time information from diverse sources, in order to deploy and manage emergency service workflows (Gangadharan 2013).

During the Haiti earthquake in 2010, emergency services needed to be dispatched to the area to support the

government cope with the circumstances. Instead, a company specializing in technology design for emergency services such as natural disasters and diseases, offered support to the emergency services and people. Within 48 h the company has set up the telecoms infrastructure and gain buy in for setting up an emergency response number. The company offered a message-integrated communications from two mobile network companies; incoming aid requests were received in Haitian Creole. These were routed to Riff/EIS for analysis (Alehegn2010).

Riff has the capability to automatically extract features, classify data and tag data and their metadata (e.g. source and target geo-location, time, route of transmission) and before it can process it via algorithms. The analytics module can detect relationships between these extracted features within a collaborative space or across different collaborative spaces. Riff can also combine information from GeoChat, a collaboration tool geolocating human comments, observations and reports to make information richer and relevant. Riff then shared information with Crowdfloweranother workflow provider, handling the distribution of tasks to a bilingual volunteer workforce for translation, tagging, and geocoding. Information was then forwarded to Ushahidi, a website initially developed to map reports of violence in Kenya now turned a global crowdsourcing platform with humanitarian goals. 'Ushahidians', as a community of interest helped to map, accurately geotag information toprovide accurate coordinates to the search and rescue team on the ground .[1]

KEY FINDINGS

However, there are some advances towards developing platforms for smart cultural heritage utilising enabling technologies that underline smart city implementation. Among the enablingtechnologies,

- mobile broadband is pervasive across the case study examples in use and/or in access. The cultural heritage sector has been an early adopter of mobile technologies in user engagement and the visitor experience in the development of mobile apps. It is also the most accessible and available of the technologies to the broadest spectrum of users, irrespective of their location (Roffia et al. 2005, Casella & Coelho 2013, Yovcheva 2012, Yovcheva et al. 2014).
- Wireless Sensor Networks (WSN) are another layer of infrastructure that is increasingly common supporting different smart scenarios. Smartphone tours and devices that are context-aware figure in most of the examples, such as the indoor digital trails of the O-Device and Journey of Inspiration, and city trails of Paisatge and StreetMuseum.
- The application of NFC technology provides a more fine-grained context-awareness that allows users to receive customised information and a more realistic experience in close proximity, e.g., users can read or listen to comprehensive guides about landmarks they discover, while watching animations or playing games. The Pen at Cooper Hewitt builds on NFC reading technology to enable personalised and individual interaction.
- The use of BLE enabled beacons across the Canadian Museum for Human Rights, supports a digital trail that is layered with narrative and augmented reality. 120 universal access points also provides improved visitor navigation and accessibility for sight- and hearingimpaired visitors. Sign language, for example, is available through a dedicated app.Absent among enabling technologies was the evidence of the use of :
- Cloud computing platforms, although there are proposed smart cultural frameworks in the literature that include cloud

platforms (Angelaccioetal. 2012, García Crespo et al. 2016). Across the sample studies, it was difficult to determine use of cloud infrastructure due to the lack of available technical literature on the architecture of systems. In the cultural heritage domain, the Europeana Cloud is one of the larger cloud-based infrastructure projects in operation, hosting several million digital items, and supporting data services arising from the Europeana Open Data and associated programs.

- IoT, as a nearly synonymous term with smart cities, remains an evolving technology, and has not reached an operational level of integration in smart cultural heritage, although there is potential for IoT to underpin various smart cultural services (Chianese&Piccialli 2014, Jaraetal. 2015). The EU funded DATABENC (2014) initiative piloted an IoT service-oriented framework for an art exhibition of sculptures within the MaschioAngioino castle in Naples. Architectural components comprise an IoT enabled environment, with WSNand NFC.

- NFC(Near Field Communications) subsystems (Amato et al. 2013, Chianese&Piccialli 2014). More recently, an IoT platform supporting sensors and mobile devices is being architected for Gallery One of the Cleveland Museum of Art in which The Collection Wall and ArtLens mobile app are key features (Alexander2014)

- Visualisation technologies Forms of geovisualisation, from floor guides to location points and thematic maps, are pervasive and essential features of the applications and services across the selected case studies. This underpins a primary characteristic of smart environments, that of location-awareness relating to the user, place, and surrounding objects at any one time. Geovisualisation also reinforces other visualisation technologies such as AR which is bound to a location point and wayfindingactivities.
- 3D visualisation, including computer generated objects, figured prominentlyin thoseexamples with AR applications and immersive environments, such as Pureland 360 and Ai WeiWei 360, offering rich and layered forms of information. The digital 3D models in the preservation and reconstruction examples, Rekrei and Zamani, highlight that the protection of heritage and culture must remain a high priority for all cultures. These online collections of 3D reconstructions representing endangered or destroyed artefacts, cultural landmarks and monuments bring new resonance to the role that “virtual museums” can play in terms of knowledge and wider accessibility of cultural heritage (Stylianietal. 2009). The worldwide engagement of thousands of users supporting Rekrei’s mission, in particular, also profiles the potential role of citizens in collectively protecting global cultural heritage, and that we do not need to be physically in the same place to participate in thisgoal.
- The pervasiveness of AR and/or AR elements in the selected projects supports the adoption growth of this technology in the cultural heritage sector as a popular visualization paradigm, arising from tourism applications (Yovcheva 2012, Yovchevaetal. 2014) to educational and exhibition spaces (Cassella& Coelho 2013, Garcia-Crespo 2016, Risseeuwetal. 2016). Museums, galleries and other cultural organisations have been triallingARsystems for several years, such as in the example of ARCHEOGUIDE, and the National Science Museum in Tokyo, in which AR technology was used to overlay “flesh” onto the dinosaur skeletons on display (Kondo et al.2007).
- The Skin &Bones AR app at the National Museum of Natural History has advanced this use, to bring dinosaur

skeletons and fossils alive through a mix of AR, animation and gamification. The Museum has also provided the opportunity for children to use the AR app at home with a downloadable resource that simulates the museum experience.

- The potential of AR in outdoor settings is exemplified by the Museum of London's highly successful Street Museum app that has been available as a downloadable app for over five years. The ROM Ultimate Dinosaur exhibition brought dinosaurs to life in the city of Toronto at bus shelters and public spaces with signposted instructions on how to activatetheAR experience. RecoVR Mosul and Ai WeiWei both use AR elements in that they use the real environment as a background with overlaid information ontop.
- The applications are themselves accessible through web browsers as photorealistic 360° panoramas, but alternatively can be experienced as 3D immersions in virtual reality (VR). The potential intersections of VR and smart environments are yet to be exploredfurther.
- Over half of the case studies employed two or more enabling technologies and two or more visualization types. The high availability of mobile apps among most of the studies suggests that this an important criterion in making accessible more readily digital content and allowing users further flexibility in how, when and where they may want to access the content, and share it. Of the downloadable apps, all were available on iPhone or iPad, revealing, perhaps, that iPhone had an earlier start in the sector as a user engagementdevice.
- This also brings to the foreground a related and larger question of accessibility across the case studies. Rekrei and Zumani are two examples providing relatively low barriers to access content by a distributed audience. There is a means to directly contribute content as in the case of Rekrei. Of note both these projects are largely community sourced and fall outside of more established cultural heritage organisations. Community engagement in the co-design of smart and open services is a characteristic of participatory planning that is starting to gain traction in smart city agendas (Saunders &Baeck2015).
- In most of the case examples audiences can interact with the content through native web browsers. In locations with a ready infrastructure, such as free Wi-Fi and/or WSN, accessibility is also increased. In the smart cities of London and Barcelona, the barrier is lowered for visitors to use digital trail apps around the city, such as StreetMuseum and Paisatgerespectively, but interactivity options may be less, or less intense, compared to what might be achieved in an architected indoor environment, for example.
- A final and related observation concerns the pervasiveness of personalization options for users in most of the case studies, for instance, to tag and share "favourites" as in the examples of the Collection Wall and The Pen. The ability to save digital trails and other content for a post visit experience (usually accessible through a web link) was a key feature in more than half of the case examples. This continuity of the user experience is an important one, and one that could potentially lead to insights into the development of smart cultural services.

TO DESIGN AND DEVELOPMENT OF CLOUD BASED DELIVERY MODELFOR CULTURAL HERITAGE IN GUWAHATI

A new web application providing access to cultural heritage information about Assam could prove to be a major asset to visitors, museums and historical sites. The application named EXPLORE CULTURAL HERITAGE SITES OF ASSAM, has been designed for mobile devices through the Salesforce CLOUD project The app allows users to access and use cultural content from the cloud-based platform. The project taps into the potential of smartphones and PCs. The concept is that mobile features such as geo-location and real time interaction can be used to provide personalised up-to-date and interactive cultural heritage content, in real time. 'The main objective of the SalesForce CLOUD project has been to enable more active cultural engagement,' explains project coordinator Malaya Borah Dutta from the National Institueof TechnologySilchar, Assam. 'This will help to open up learning about cultural heritage.' The EXPLORE CULTURAL HERITAGE SITES OF ASSAM web application is currently available for PCs.In the future, this application could be integrated with other devices to engage customers with cultural heritage in different environments, such as at home (e.g. with a Smart TV), on site or during a visit. Cloud computing is about sharing computing resources rather than having local servers or personal devices handle each individual application. In this sense, 'cloud' is a metaphor for 'the Internet,' where services — such as servers, storage and applications — are delivered to an organisation's computers and devices through the internet. This means that high performance computing power to perform tens of trillions of computations per second can be tapped into for consumer-oriented applications. Salesforce uses the cloud to provide an adaptive cultural experience according to user interests, likes and habits. 'Visitors benefit from receiving a personalised cultural experience, and enjoy a more interactive cultural visit. The innovation will also help cultural institutions attract more visitors, and by getting a better insight into visitor preferences, help them to improve and adapt their exhibitions.' Indeed, a central aim of the project has been to increase the active participation of general public in cultural events and experiences, by inviting them to contribute with new content and opinions and to share information, before, during and after a visit. Cultural heritage institutions often use a range of digital technologies in order to attract, engage and retain visitors, but often success islimited. Salesforceopen the possibilityofinteractiveengagement. Inordertoleaveasustainablelegacy, the SalesForce CLOUD team expects that the concept will be rolled out at other sites, in order to reach a wider audience of end users and culturalinstitutions.

FINDINGS:

- Do they manage their records on uservisited?
- Do they have such an application which can do thesame?
- Do they have an automate system which can ease theirworkload?
- Do they have an application which can dynamically Store, Edit, Update Details of users?
- Do they have an application which can particularly help to rate by offering feedbackfeature?
- Do they have a cloud database which guarantees that their data is safe from any kind offailure?

RESEARCH GAPS: It is observed that all countries as stated above is uses a manual as well automatic system to handle cultural heritage data which is unreliable andcostly.

PROPOSED SYSTEM

To build an application that can cope up the research gaps identified in the above i.e. an application that can manage and stores all the details of users such as record of visited users, review and share the culturage heritage parts of guwahati, details of their feedback andmanage their seprate dashboard

FEASIBLITY STUDY

- **TECHNICAL FEASIBILITY**

since the project is using tools and techniques that are cloud based which is provided by the Salesforce platform. It is technically feasible with some special expertise and properguidance.

- **ECONOMIC FEASIBILITY**

Initially, it would cost more to an organization since the services and resources provided by Salesforce platform are costlier but overtime it will pay back in the form of result that will come out and beneficial for an organization.

- **TIME FEASIBILITY**

The goals can be set & modules can be prepared if the proper planning is present.Therefore,it is also time feasible i.e. this project idea can be converted into operational project within specified time limit**.**

- **OPERATIONAL FEASIBILITY**

As the project is cloud based andits user interface would be so user friendly, it would be easy to use its functionality so anyone who's determinant to operate will find it easy to work on it. Hence,it is operationally feasibility i.e. people working for organization will find it easy to operate.

CHAPTER-3

PROPOSED WORK

METHODOLOGY

ALGORITHM

- Start
- Firstly user has to visit the Homepage .
- Secondly, user visits " EXPLORE CULTURAL HERITAGE OF GUWAHATI"
- If the user is interested or he likes the sites then he can review them by various using emoticons provided and also user can share those sites using share buttons.
- Nextly , the user can register himself
- Nextly , the user is user then he can log into his account then if he wishes to update his profile or want to change the password , then he can simply manage his dashboard
- And nextly, he can feedback us too.
- And finally he can safely logout himself.
- And for the admin part , if the user is Admin then admin can manage his dashboard where he can count the total number of users registered and also he can see the total number of feedbacks received.
- Also he can go to manage student panel to see the details of the all the students along with their detailed description.
- Also he can check the total number of feedbacks received and from whom it has been received.
- If the admin wishes to change his password then he can simply change his password by going to the update password option button available in the top side.
- Finally, the can also logout .
- End

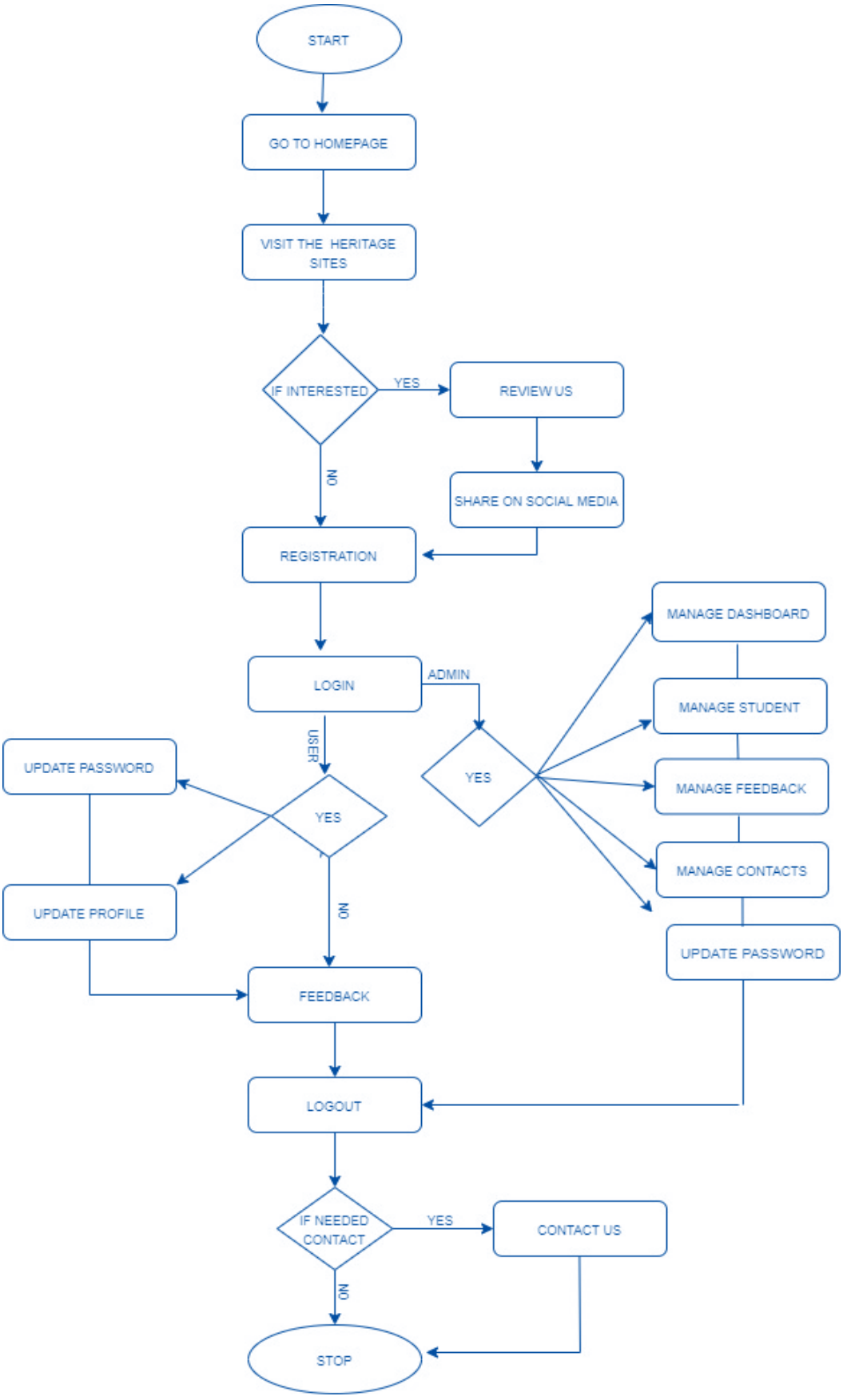

Fig 3.1 Flow Chart Diagram

MODULES AND THEIR FUNCTIONALITIES

- **User**-This module stores the user personal details like name, email,contact number,image etc.
- **Admin**-This module stores and manages the details of all visitors along with their feedbacks.
- **Contact**-This module stores the contact of all the users
- **Dashboard**-This module graphically represent the number of user visited in this project.

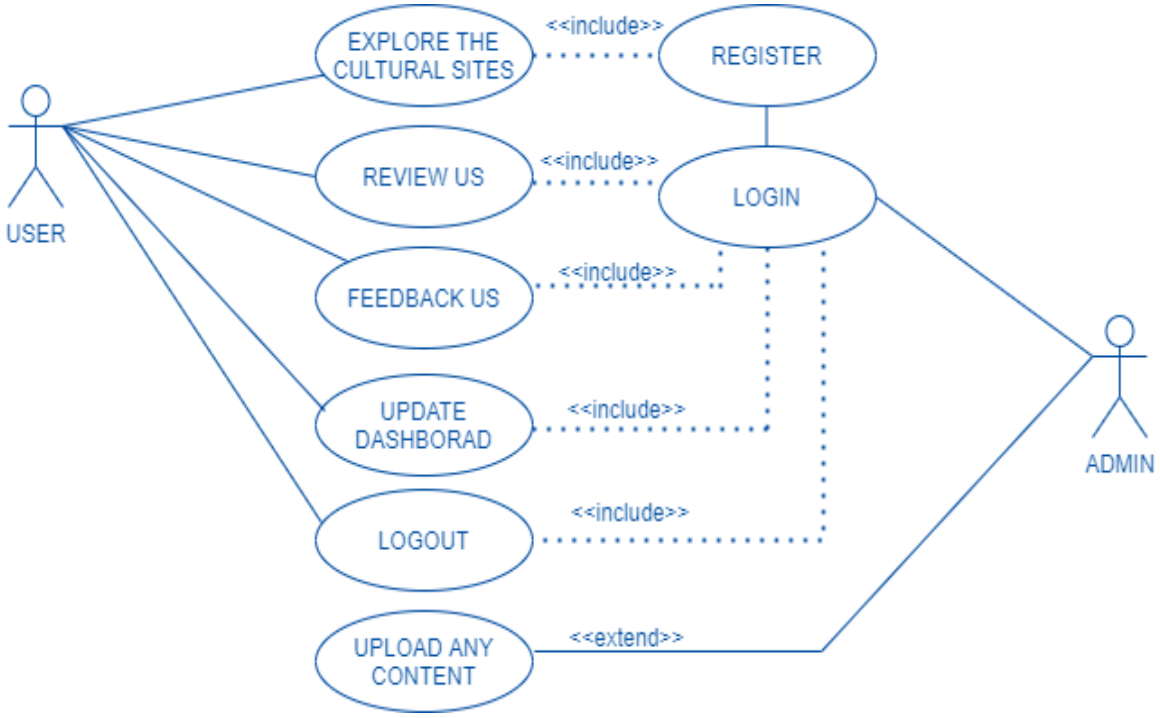

Fig 3.2Use Case Diagram

USE CASE DESCRIPTION:

LOGIN

Brief Description**:**It describes how a user logs into the Explore Cultural Heritage Sites Of Guwahati.

Actors :Following actors interact and participate in this use case: Student,Admin.

FLOW OF EVENTS

- Basic Flow:This use case starts when the actors wishes to login to the Explore Cultural Heritage Sites Of Guwahati. The system requests that the actor enter his/her name, password and role and then system validates all the entries done by the actor.
- Alternative Flow:If, the entries entered by actor are invalid, the system shows an error message. The actor can choose either return to the beginning of the basic flow or cancel the login.
- Special Requirements:None.
- Pre-Conditions:All users must have a user account created for them in the system,prior to executing the usecase.
- Post-Condition:If the use case was successful, the actor is logged into the system.If not the system state is unchanged
- Extension Points: None

MANAGE USER RECORD

Brief Description:This use case facilitates the user to manage records i.e. insert ,edit and delete the students records.

Actors:Following actors interact and participate in this use case: Student.

FLOW OF EVENTS

- Basic Flow:This use case starts when the actors successfully login into the application and now actor can manage the student record by inserting new records or by editing previously saved records or by deleting studentrecords.
- Alternative Flow: If in the basic flow, the actorsentries are invalid, the system shows an error message. The actor can choose whether to return to the beginning of the basic flow or cancel thelogin.
- Special Requirements:None.
- Pre-Conditions:All users must have a user account created for them in the system,prior to executing the use case.
- Post-Condition: If the use case was successful, the actor is logged into the system. If not the system state is unchanged.
- Extension Points:None

MANAGE ADMIN RECORD

Brief Description:This use case facilitates the system to managei.e. insert,edit and delete the user and feedback record and information.

Actors:Following actors interact and participate in this use case:Admin.

FLOW OF EVENTS

- Basic Flow:This use case starts when the actors successfully login into the application and now actor who is can manage the student record by inserting new records or by editing previously saved records or by deleting studentrecords.

- Alternative Flow:If in the basic flow, the actors entries are invalid, the system plays an error message. The actor can choose either return to the beginning of the basic flow or cancel the login.
- Special Requirements:None
- Pre-Conditions:All users must have a user account created for them in the system,prior to executing the use case.
- Post-Condition:If the use case was successful, the actor is logged into the system. If not the system state is unchanged.
- Extension Points**:** None

FEEDBACK SYSTEM

Brief Description:This use case is use to provide a view to manage the details of all users who have feedback us

Actors:Following actors interact and participate in this use case: Student and Admin

FLOW OF EVENTS

- Basic Flow:This use case starts when the actors successfully login into the Application and by this use case and this system can generate the feedback system to show the feedbacks of the users.
- Alternative Flow:If in the basic flow, the actors entries are invalid, the system plays an error message. The actor can choose either return to the beginning of the basic flow or cancel the login.
- Special Requirements:None
- Pre-Conditions:All users must have a user account created for them in the system, prior to executing the use case.
- Post-Condition:If the use case was successful, the actor is logged into the system. If not the system state is unchanged.
- Extension Points:None

MANAGE DASHBOARD

Brief Description:This use case is use to manage Dashboard.

Actors:Following actors interact and participate in this use case: user and admin

FLOW OF EVENTS

- Basic Flow:This use case starts when the actors successfully login into the Application and by this use case cultural heritage system can Manage Dashboard.
- Alternative Flow:If in the basic flow, the actors entries are invalid, the system plays an error message. The actor can choose either return to the beginning of the basic flow or cancel thelogin.
- Special Requirements:None
- Pre-Conditions:All users must have a user account created for them in the system,prior to executing the use case.
- Post-Condition:If the use case was successful, the actor is logged into the system. If not the system state is unchanged.
- Extension Points:None.

LOGOUT

Brief Description:This use case is used to logout from the application.

Actors:Following actors interact and participate in this use case: admin and students.

FLOW OF EVENTS

- Basic Flow:This use case starts when the actors successfully login into the Application.
- Alternative Flow:If in the basic flow, the actorentries are invalid, the system plays an error message. The actor can choose either return to the beginning of the basic flow or cancel thelogin.
- Special Requirements:None
- Pre-Conditions:All users must have a user account created for them in the system,prior to executing the use case
- Post-Condition:If the use case was successful, the actor is logged into the system.If not the system state is unchanged.
- Extension Points:None.

System analysis or Propsed work is a detailed study of various operations performed by the system and the relationship within and outside of the system that is it includes finding out in more detailed what the system problem are and what are and what are the different new changes the user wants.

CLASS DESIGN

A class diagram in the Unified Modeling Language is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations, and the relationships among objects.

Here,we have four classes as follows:

- User:It include username,emailid , reg_id ,dateofbirth ,image,hobbies,gender,semester,programme,password ,mobile number and given functions:manage dashboard(), update password ( ), update profile ( ) and give feedback
- Admin:Itincludes admin_id,username,password and functions include managedashboard(),manage student( ),check feedback( ), check the contact list( ), upload any content( ).
- Feedback system: It includes content,user_idand functions include efficiency( ),knowledge gained( ),studentpanel ( ),admin panel( ),rating of the whole project( ) etcas stated in the class diagram
- Logout system: It lets user logout from the panel.

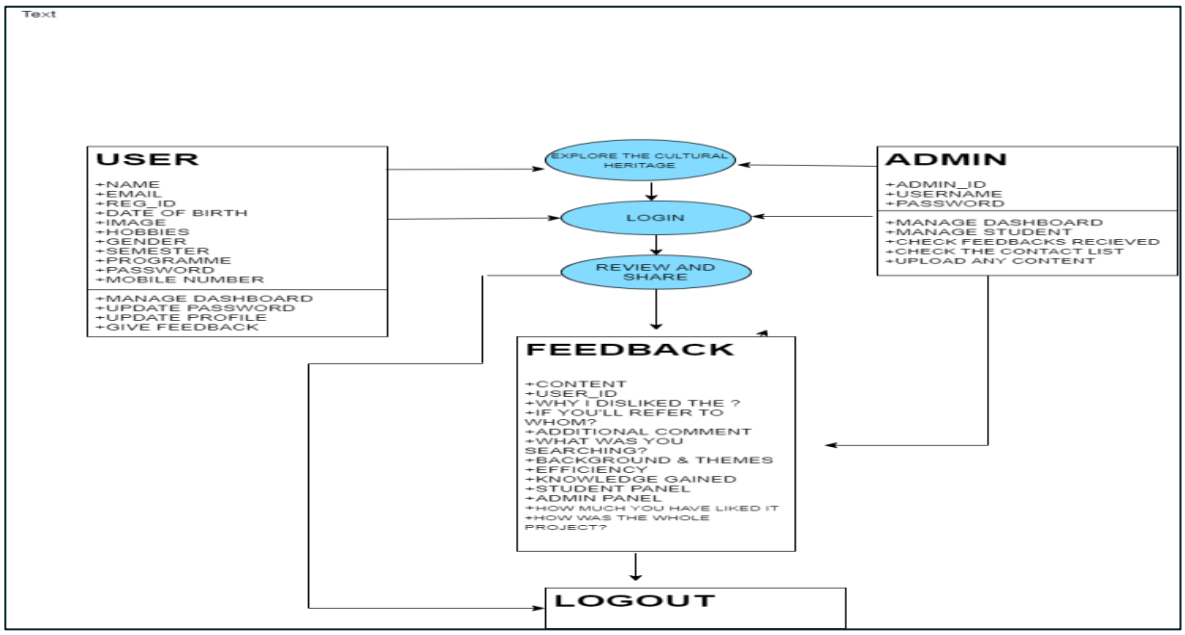

Fig 3.3Class diagram

SEQUENCE DIAGRAM

Sequence Diagrams are used primarily to design, document and validate the architecture, interfaces and logic of the system by describing the sequence of actions that need to be performed to complete a task or scenario. UML sequence diagrams are useful design tools because they provide a dynamic view of the system behavior which can be difficult to extract from static diagrams or specifications.

- First,cultural Heritage management system user have toregister
- Secondly they will use their username and password tologin.
- Next,Explore the cultural heritage sites ofGuwahati.
- Next,Can see the map for calculating tentative distance for a particular historicalplace.
- Next,Review and rateus
- Next,Go to yourdashboard
- Next,Feedbackus
- Next, manage yourdashboard
- Lastly logout.

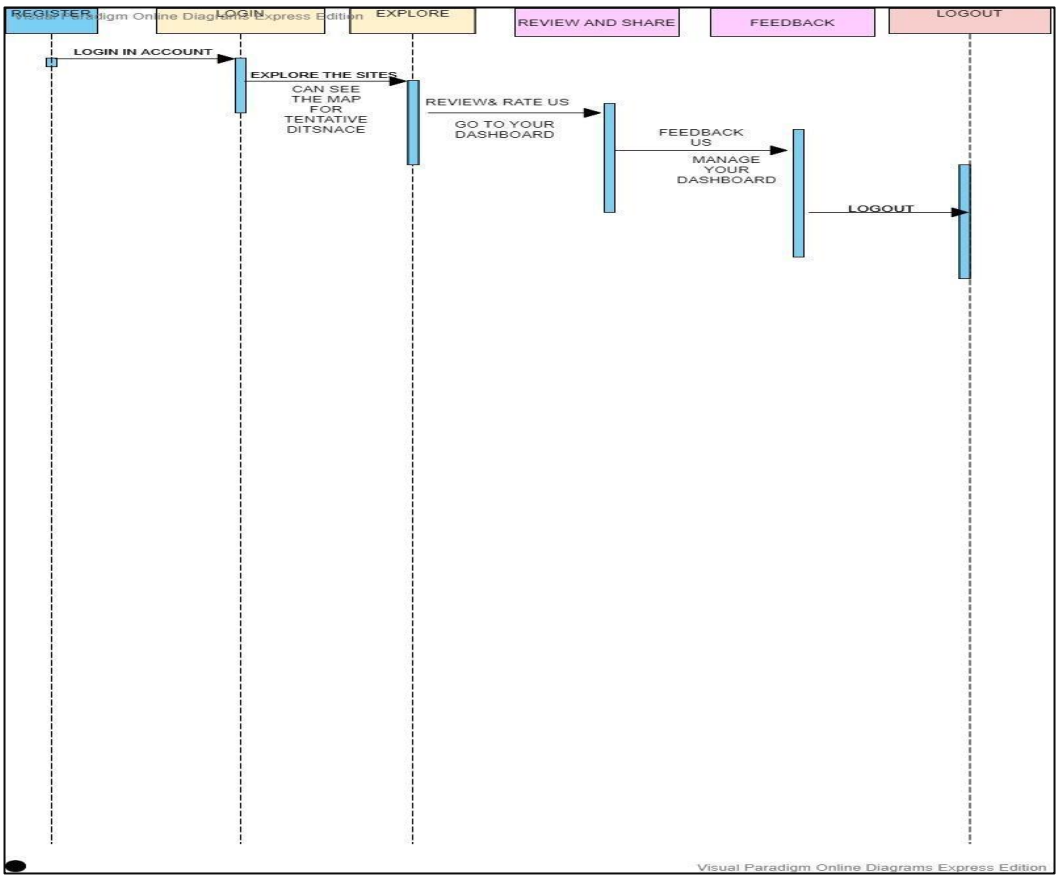

Fig 3.4Sequence Diagram

ACTIVITY DIAGRAM

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. Activity diagrams show the overall flow of control.

Cultural Heritage System will perform following activities:

- First, user will registerhimself
- Enter login details to get logged into hisaccount
- Explore the Cultural Heritage Sites ofGuwahati.
- Now,if user is interested in the the cultural heritage management system criteria of the particular project, he can review and share on his socialmedia.
- After sharing he can also give feedback,ifinterested.
- After rating and feedback us, he can logout from hisaccount.
- Otherwise he can directly get logout from his account if he is not interested in giving thefeedback

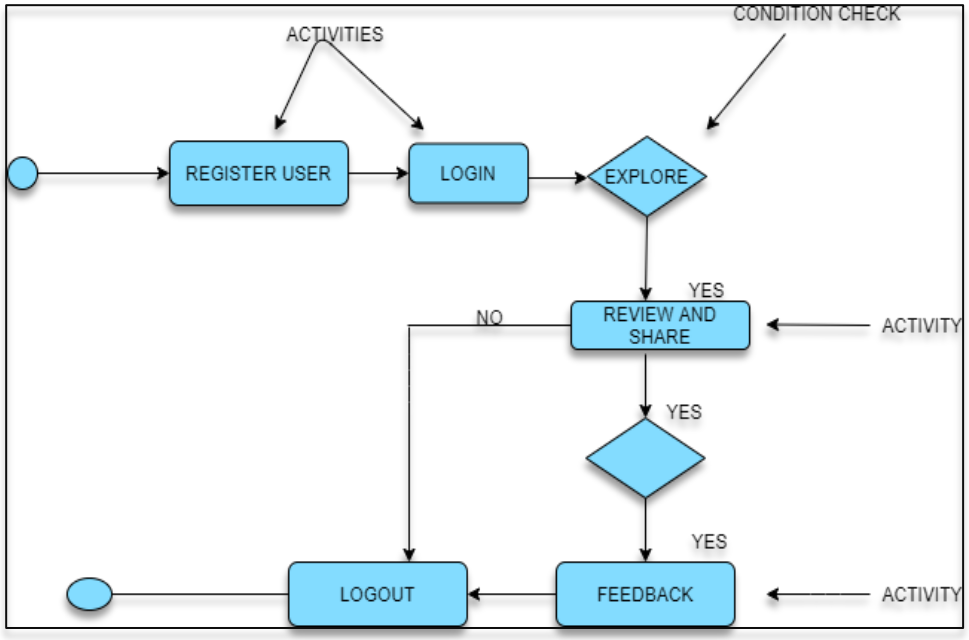

Fig 3.5 Activity Diagram

E-R DIAGRAM

An entity relationnship model, also called an entity-relationship (ER) diagram, is a graphical representation of entities and their relationships to each other, typically used in computing in regard to the organization of data within databaseand within system.

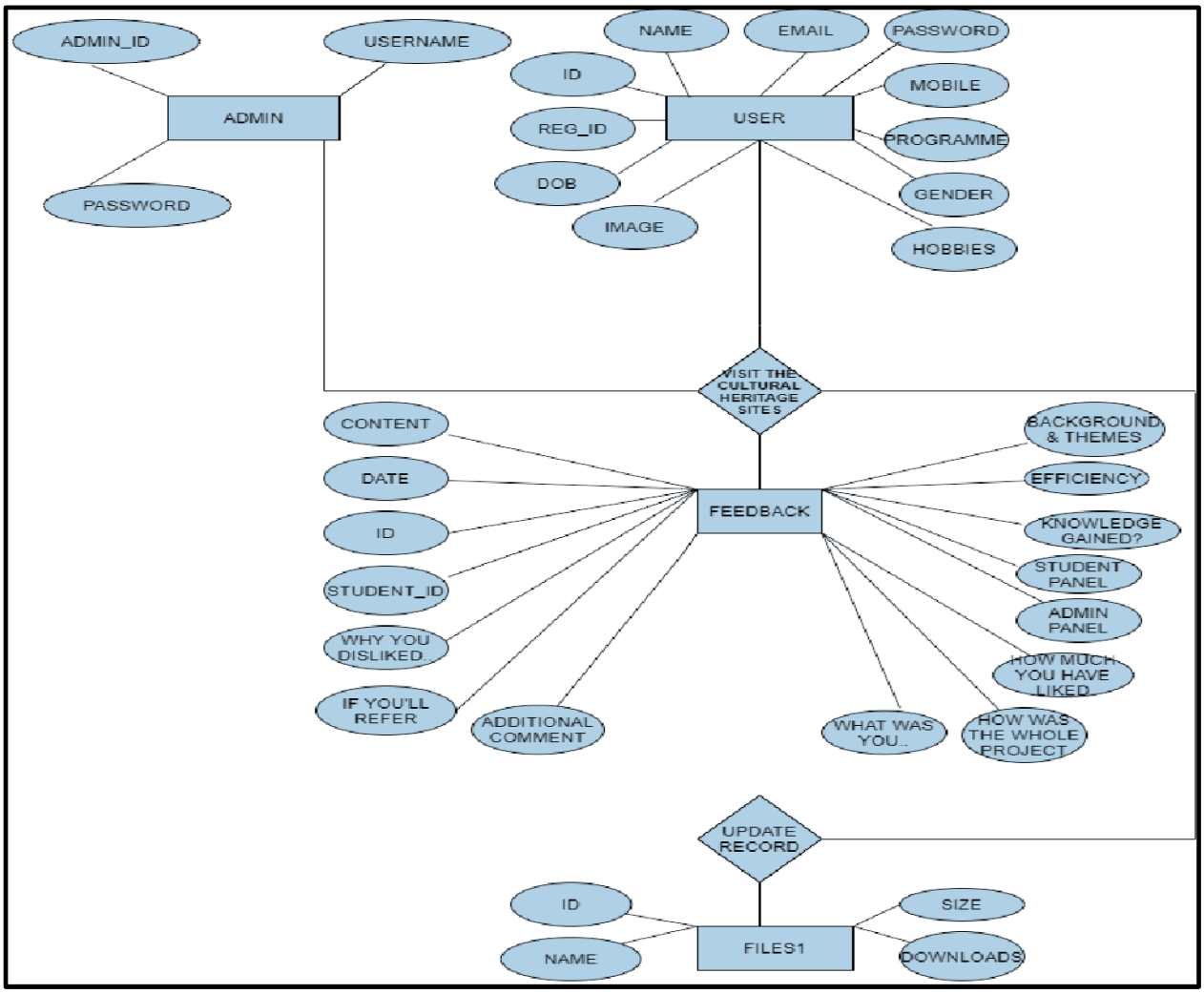

Fig 3.6E-R Diagram

CHAPTER-4

CORE/CODE

Table 4.1: Admin

FIELD	API	DATATYPE
Admin_id	Admin_id	Int(11)
user	username	Varchar(50)
pass	password	Varchar(50)

Table4.2 : user

FIELD	API	DATATYPE
ID	Id	Int(11)
Name	Name	Char(40)
Password	Pass	Varchar(40)
Mobile	Mobile	Bigint(11)
Programme	Programme	Varchar(20)
Semester	Semester	Varchar(10)
Gender	Gender	Varchar(40)
Hobbies	Hobbies	Varchar(40)
Image	Image	Varchar(50)
Dateofbirth	Dob	Date
Registration id	Reg_i	Varchar(20)

Table4.3 : files1

FIELD	API	DATATYPE
Id	Id	int(20)
Name	Name	varchar(225)
Size	Size	int(11)
Downloads	Downloads	int(11)

Table4.4 :Feedback

FIELD	API	DATATYPE
Id	Id	Int(11)
Student_id	Student_id	Varchar(50)
Faculty_id	Faculty_id	Varchar(50)
Content	Content	Enum(‘5’,’4’,’3’,’2’,’1’)
Whole project accordingto your rating	Whole project accordingto your rating	Enum(‘5’,’4’,’3’,’2’,’1’)
Background & themes	Background and themes	Enum(‘5’,’4’,’3’,’2’,’1’)
Efficiency	Effieciency	Enum(‘5’,’4’,’3’,’2’,’1’)
Knowledge gained	Knowledge gained	Enum(‘5’,’4’,’3’,’2’,’1’)
Student panel	Student panel	Enum(‘5’,’4’,’3’,’2’,’1’)
Faculty panel	Faculty panel	Enum(‘5’,’4’,’3’,’2’,’1’)
Admin panel	Admin panel	Enum(‘5’,’4’,’3’,’2’,’1’)
How much you have liked it	How much you have liked it	Enum(‘5’,’4’,’3’,’2’,’1’)
How was the whole project	How was the whole project	Enum(‘5’,’4’,’3’,’2’,’1’)
What was you searching for	What was you searching for	Enum(‘5’,’4’,’3’,’2’,’1’)
Additional comments	Additional comments	Enum(‘5’,’4’,’3’,’2’,’1’)
If you will refer	If you will refer	Text
how much i dislike the content	how much i dislike the content	Text
Date	Date	Date

CHAPTER-5

OUTPUTS

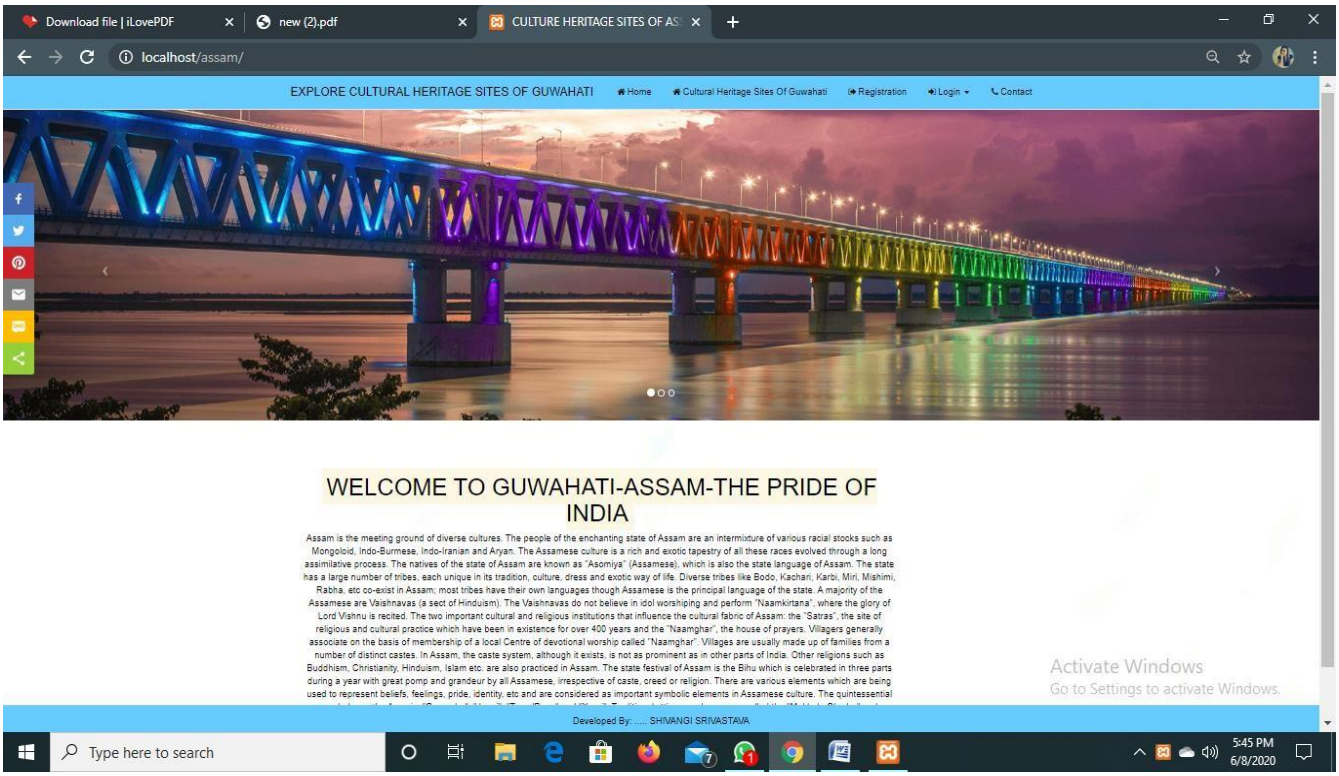

fig5.1 home page for "explore cultural heritage of Guwahati"

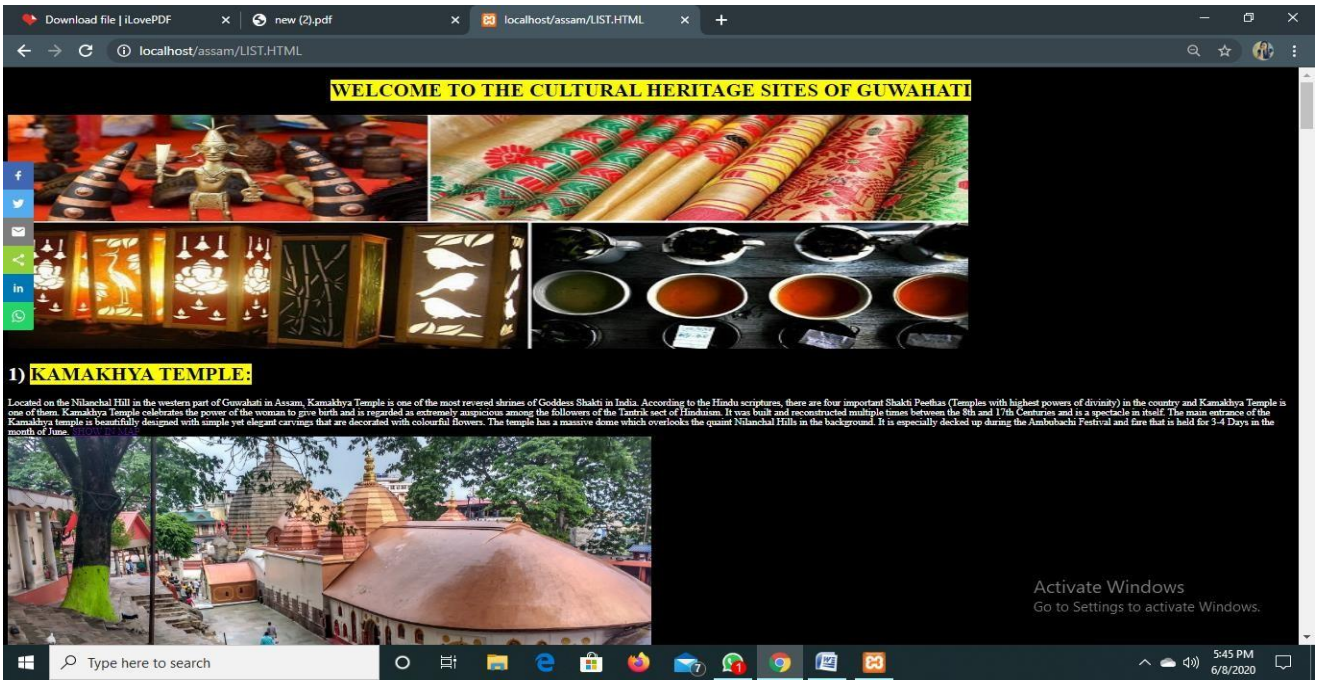

fig5.2cultural heritage parts page of"explore cultural heritage of Guwahati"

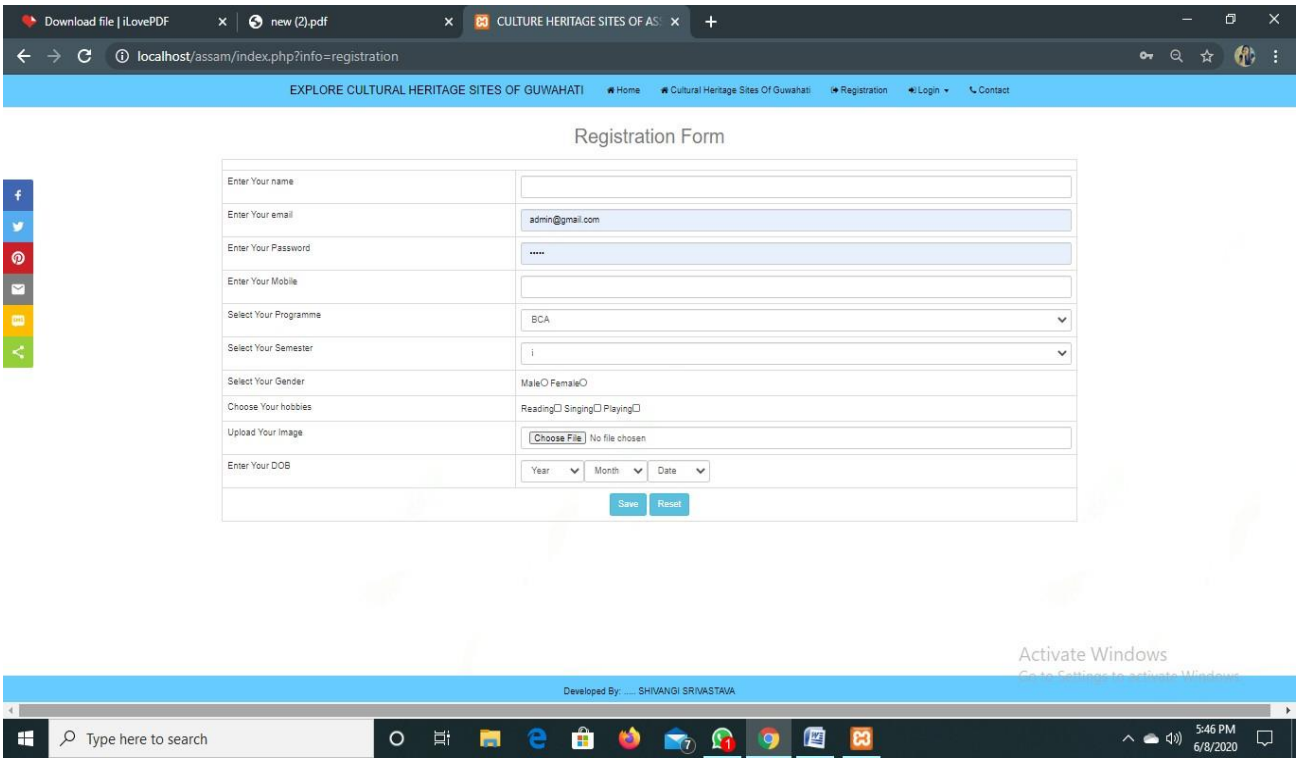

fig 5.3 registration page for "explore cultural heritage of Guwahati"

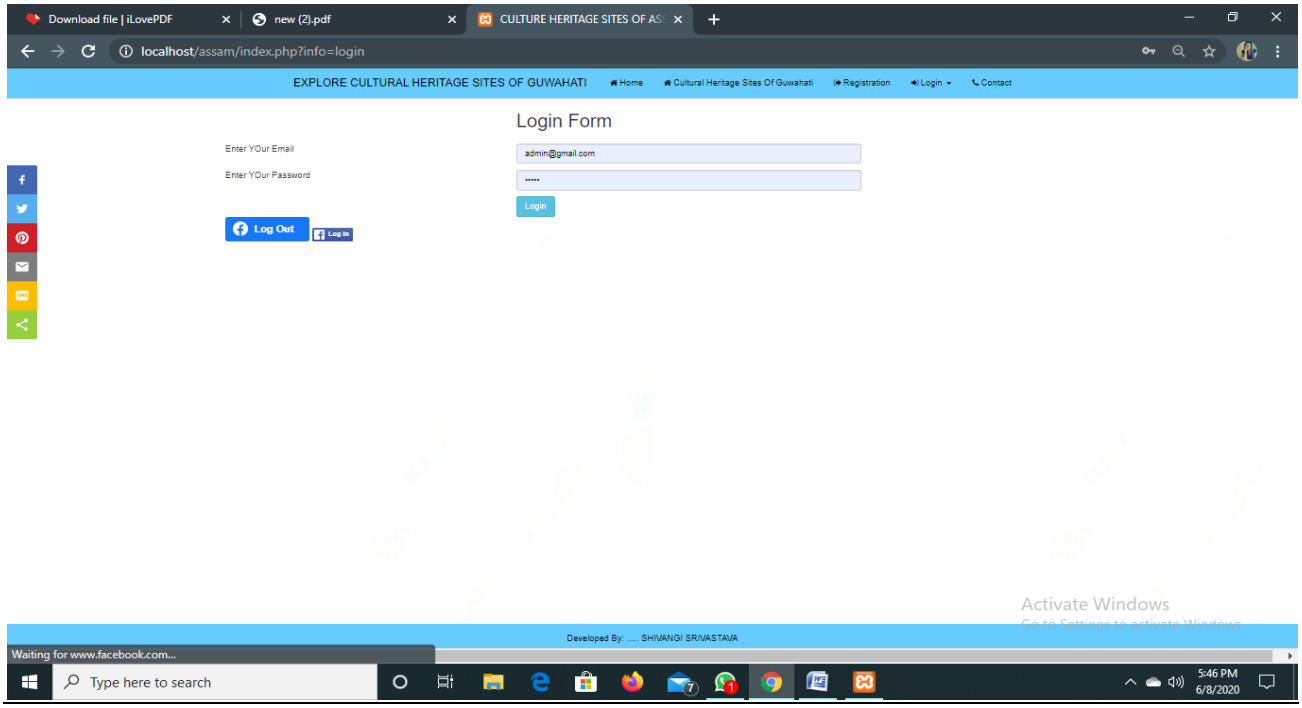

fig 5.4 login page for "explore cultural heritage of Guwahati"

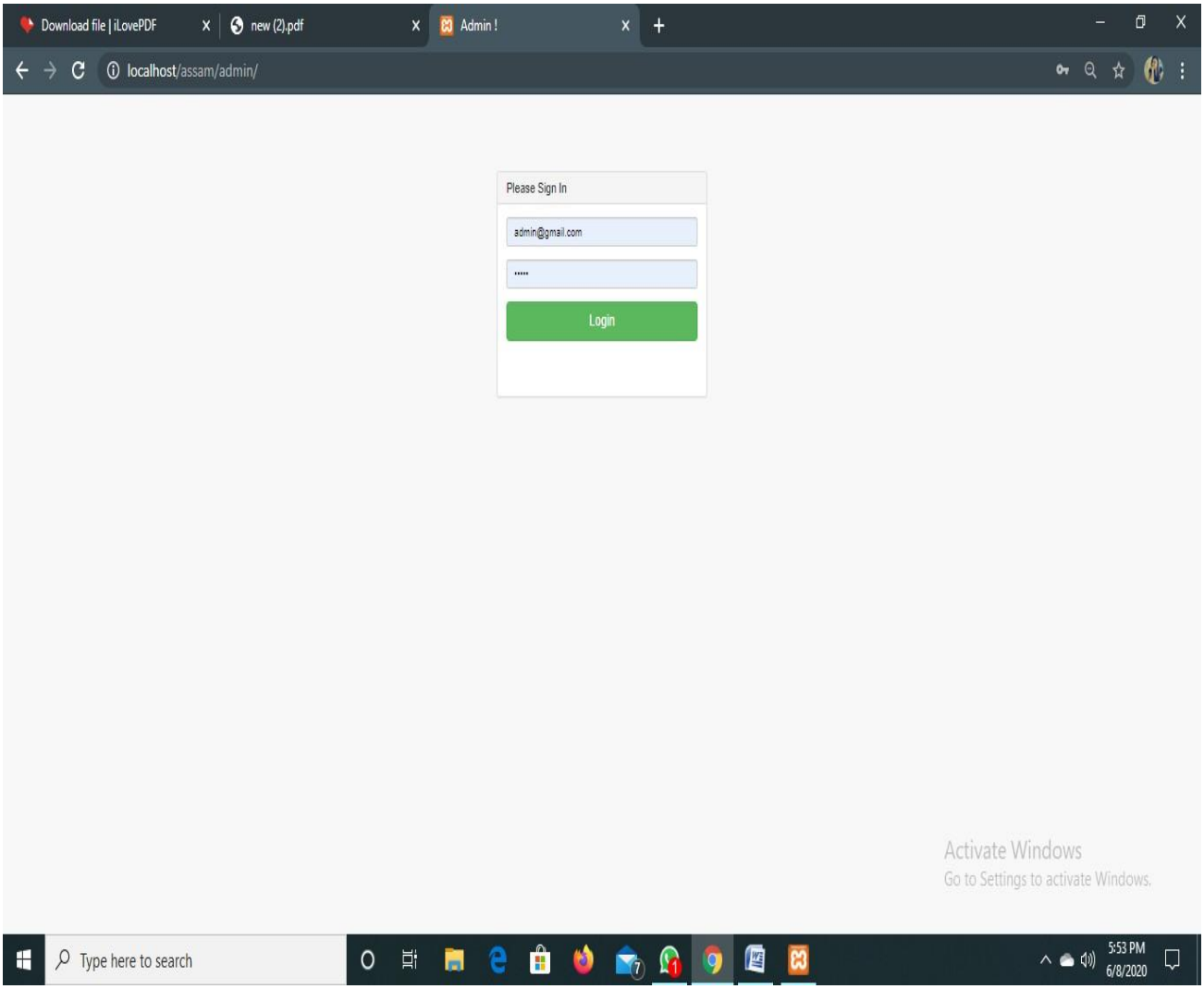

fig 5.5admin login page for “explore cultural heritage of Guwahati”

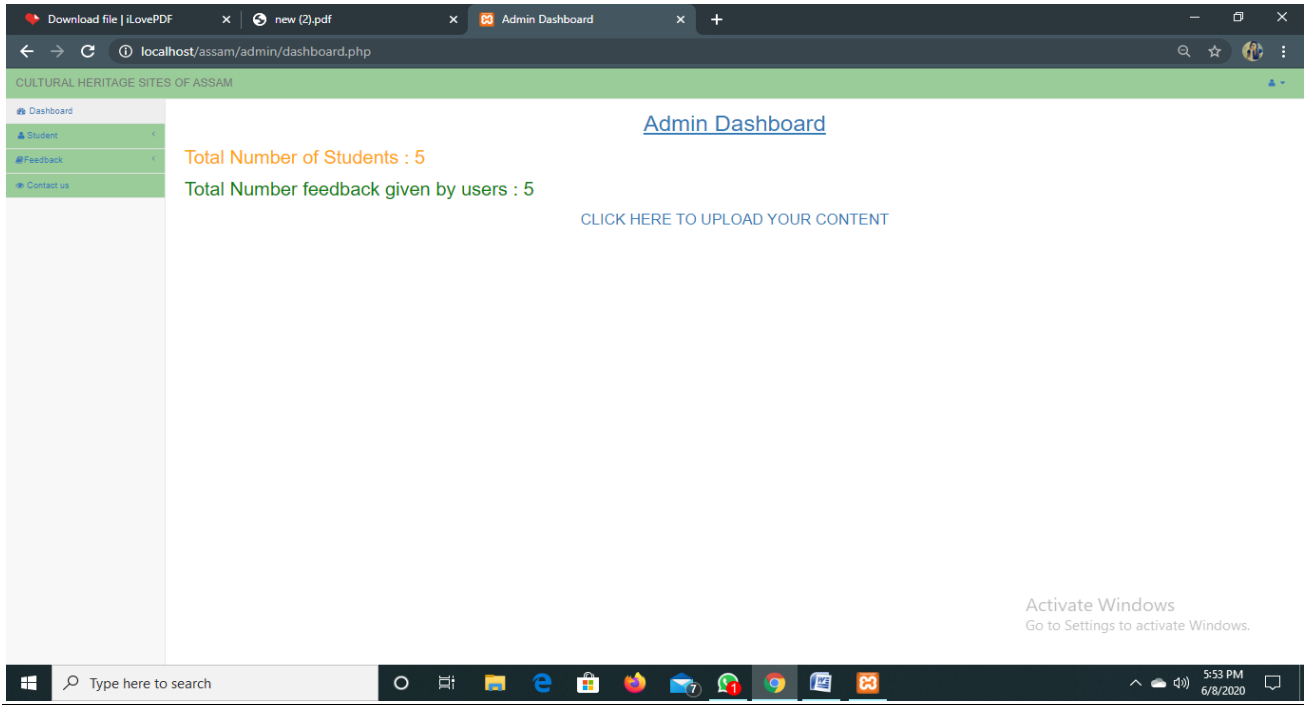

fig 5.6 admin dashboard for “explore cultural heritage of Guwahati”

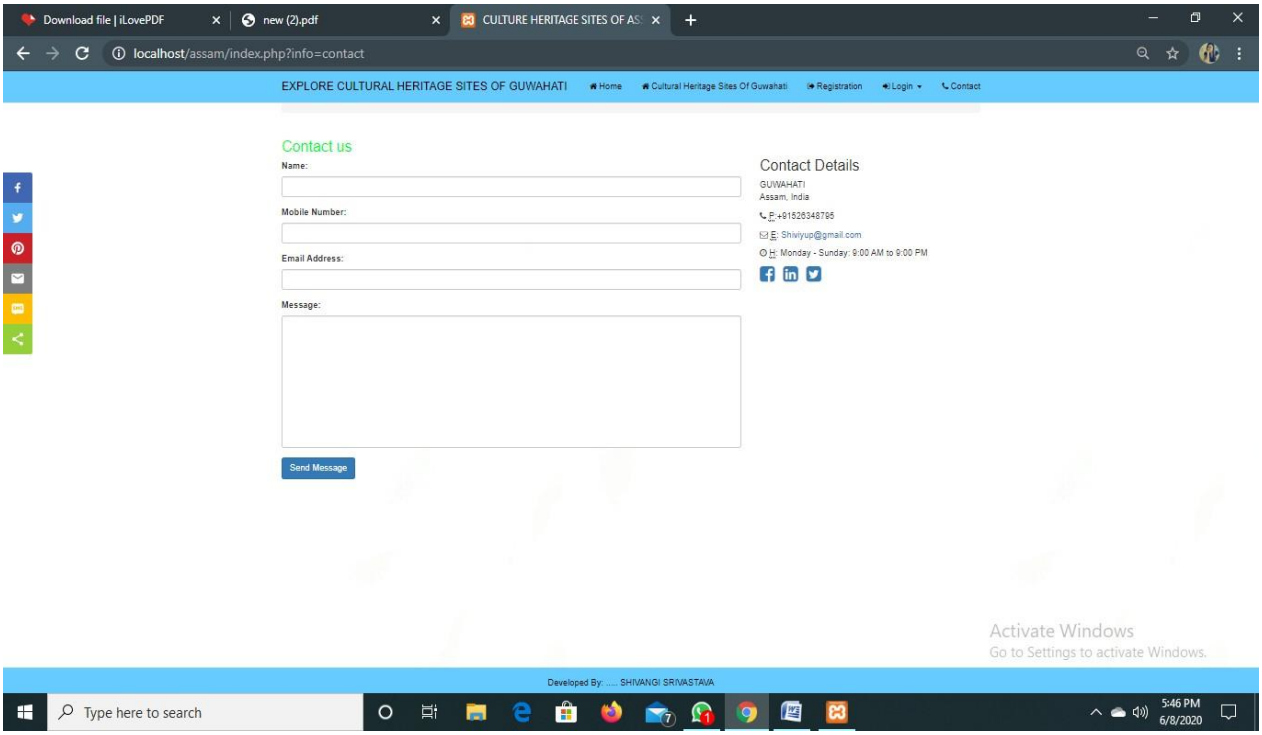

Fig 5.7contact page for "explore cultural heritage of Guwahati"

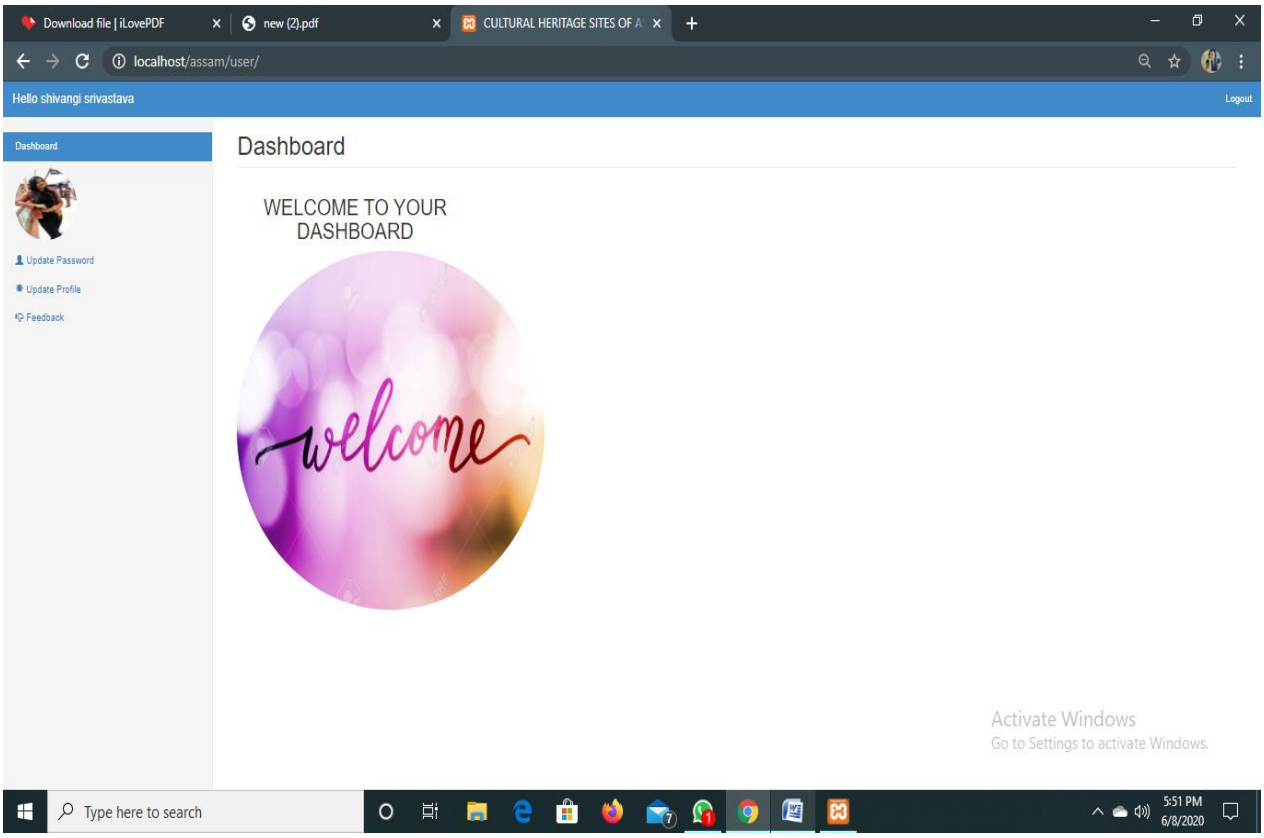

fig 5.8 student dashboard of "explore cultural heritage of Guwahati"

CHAPTER-6

CONCLUSION

Our Proposed System " EXPLORE CULTURAL HERITAGE OF GUWAHATI" is a Dynamic cloud based Application developed on platform provided by "Salesforce" for Assam Department Of Cultural Affairs to increase the number of tourists to visit the cultural heritage parts of Assam online and also be able to find the details about it, as well as gracefully maintaining the records on a database.

Also, it has provided transparency between the Cultural Heritage Sites Of Assam and visitors as students.Since students are able to login and view the information about the Assam and its culture, its famous sites and details about it, also they will be able to submit their feedbacks according to their views on clicking their dashboard after login procedure.Similarly,also we have provided an Admin panel with dashboard where we can view that "how many total number of students who have visited the website and registered with us also we can view about how many total feedbacks we have received and by whom."

Also the admin can upload any data in the form of document or (.doc). " Our System ensures in ease workload of Ministry Of Culture by allowing multiple user login i.e. student and admin providing "flexibility" in storing large number of visitors records, "Data Back-up" since it is present on Cloud Database,"Security" since data is safe and secure from unauthorized access or from any physical damage due to earthly disaster, "cost-effective" in long term, "Dynamic" since it is open for change and can adopt in any environment. Thus, our system ensures a strong bond between student, faculty and admin as it binds all of them together through this Cloud BasedApplication.

OUTCOMES

- The Smart Cultural Heritage will help cities to become smarter in a sense that they can maximize their cultural footprint while at the same time can promote social and economic opportunities for their inhabitants (i.e. serving the creative industries) and thus to accommodate population growth.
- The Smart Cultural Heritage City Indicators should enter dynamically to the core of the Smart Cities Design and the process should be standardized. But the desired standardization should not end to the horizontal overview of what is smart in cultural heritage.
- Even the slightest cultural element can be crucial for the preservation of the physiognomy of a place, like the image or the smell of the blossomed trees in a neighborhood.
- The evolvement of the local society and the local stakeholders and the constant evaluation of the system are necessary, so as to assure the preservation of diversity and protection, monitoring and enhancement of the local cultural heritage. Finally, the network should all allow the management of infrastructure through a central controller system.
- As the Internet of Things paradigm constitute a powerful tool to address the design of the complex connection between new technologies, knowledge to be transmitted and visitors of Cultural Heritage environments, the gap between the technological reality and the application requirements may be considered the factor which most seriously limits a widespread deployment of ubiquitous solutions in exhibits or museums environments.

- In fact, there is still more work that has to be carried out to effectively enforce viable ,productive and non-invasive applications in Cultural Heritage domain, where heterogenous devices, environments and people areinvolved.As an effort in this direction, the surveys discussed in (chapter 2)above presents an intelligent hardware/software framework which is intended to shorten the distance existing between cultural environmentand its visitors, supporting a cultural space mutation with concrete solutions intendingto increase people enjoyment and knowledge diffusion. The rationale of this infrastructure's design derives from the need to simplify a context-aware the access to the culturalobjects, to their knowledge and connections, of a typical Cultural Heritage scenario, and to ensure that content and technological containers are effective with respectto its end-users. The fundamental role is played by the technology, especially that ofWSN and Bluetooth, as a facilitator of the integration between real and digital dimension in a space that mustbecome intelligent.

  .

MEASURES FOR EFFECTIVE DEVELEOPMENT FOR CULTURAL HERITAGE INASSAM

- Well- Planned Publicity- Intensive campaign should be carried out by government and private agencies both at national and international levels to project the cultural resources of thestate.
- Promotional venture of potential tourism products - Tourism promotional activities of the state should be parallel supported by promotional venture of potential tourism products like indigenous craft, folk art, performing art, music and other cultural components. Moreover, some long term projects such as the establishment of district cultural museum can also be taken up which could illustrate the history and traditions of adistrict.
- Involvement of indigenous people- The policies and programs of tourism development should involve the indigenous people (any ethnic group who inhabits the geographical region with which they have the earliest historic connection) in which potential resources are located as these peoples are nearer to environment in which these are to be developed. They should be made aware of the value of cultural resources in tourism development through education. Bringing them to discuss the relevant problems would greatly assist the policy maker. They could contribute to issues such as organization of cultural activities, reception of tourist,etc.
- Promotion and renovation of major monuments and ruins – Renovation of monuments and ruin sites should be done to preserve their antique characteristics. All such sites should have provision to display their history and significance to facilitate tourist as well as the locals to rediscover thepast.
- Improved infrastructure – Both the government and private tourism agencies should try to promote infrastructural facilities for tourist to enjoy their stay in the areas of attraction. Socio-political tranquility- The government should see that socio-political rest prevails in theregion

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APPENDIX

CODE FOR ABOUT.PHP

```
<div class="row">
<div class="col-lg-12">
<h1 class="page-header" align="center"><font color="#00FF33">WELCOME TO GUWAHATI-ASSAM-THE PRIDE OF INDIA</font></h1>
</div>
</div>
<div class="row" style="margin-bottom:50px;margin-left:50px">
<H1>ABOUT GUWAHATI'S CULTURE</H1>
<P>Assam is the meeting ground of diverse cultures. The people of the enchanting state of Assam are anntermixtureof various racial stocks such as Mongoloid, Indo-Burmese, Indo-Iranian and Aryan. The Assamese culture is a rich and exotic tapestry of all these races evolved through a long assimilative process. The natives of the state of Assam are known as "Asomiya" (Assamese), which is also the state language of Assam. The state has a large number of tribes, each unique in its tradition, culture, dress and exotic way of life. Diverse tribes like Bodo, Kachari, Karbi, Miri, Mishimi, Rabha, etc co-exist in Assam; most tribes have their own languages though Assamese is the principal language of the state. A majority of the Assamese are Vaishnavas (a sect of Hinduism). The Vaishnavas do not believe in idol worshiping and perform "Naamkirtana", where the glory of Lord Vishnu is recited. The two important cultural and religious institutions that influence the cultural fabric of Assam: the "Satras", the site of religious and cultural practice which have been in existence for over 400 years and the "Naamghar", the house of prayers. Villagers generally associate on the basis of membership of a local Centre of devotional worship called "Naamghar". Villages are usually made up of families from a number of distinct castes. In Assam, the caste system, although it exists, is not as prominent as in other parts of India. Other religions such as Buddhism, Christianity, Hinduism, Islam etc. are also practiced in Assam. The state festival of Assam is the Bihu which is celebrated in three parts during a year with great pomp and grandeur by all Assamese, irrespective of caste, creed or religion. There are various elements which are being used to represent beliefs, feelings, pride, identity, etc and are considered as important symbolic elements in Assamese culture. The quintessential symbols are the Asomiya"Gamucha", "Jaapi", "TamulPaan" and "Xorai". Traditional attire worn by women called the "Mekhela Chador" and Assamese jewellery also form an integral part of the Assamese-Guwahati's culture.</P>
</div>
</div>
```

CODE FOR CONTACT.PHP

```
<?php
include('dbconfig.php');
extract($_POST);
if(isset($save))
```

```
{mysqli_query($conn,"insert into contact values('','$n','$m','$e','$msg',now())");
  $err="<font color='green'>Admin Will Contact you soon</font>";
}
?>
<div class="container">
<div class="row">
<div class="col-lg-12">
<ol class="breadcrumb">
</li></ol>
</div>
</div><div class="row">
<div class="col-md-8">
<h3><font color="#00FF33">Contact us </font></h3>
<form name="sentMessage" method="post" id="contactForm" novalidate>
<?php echo @$err; ?>
  <div class="control-group form-group">
    <div class="controls">
<label>Name:</label>
<input type="text" class="form-control" name="n" required data-validation-required-message="Please enter your name."><p class="help-block"></p>
</div>
</div>
<div class="control-group form-group">
div class="controls">
<label>Mobile Number:</label>
<input type="number" class="form-control" name="m" required data-validation-required-message="Please enter your phone number.">
</div>
</div>
<div class="control-group form-group">
<div class="controls">
<label>Email Address:</label>
<input type="email" class="form-control" name="e" required data-validation-required-message="Please enter your email address.">
</div>
</div>
<div class="control-group form-group">
```

```
<div class="controls"><label>Message:</label>
<textarea rows="10" name="msg" cols="100" class="form-control" id="message" required data-validation-required-
message="Please enter your message" maxlength="999" style="resize:none"></textarea>
</div>
</div>
<div id="success"></div>
<button type="submit" name="save" class="btnbtn-primary">Send Message</button>
  <h1></h1>
</form>
</div>
<div class="col-md-4" style="margin-top:30px">
<h3>Contact Details</h3>
<p>
   GUWAHATI <br>Assam, India <br>
</p>
<p><i class="fa fa-phone"></i>
<abbr title="Phone">P</abbr>:+91526348795</p>
<p><i class="fa fa-envelope-o"></i>
<abbr title="Email">E</abbr>: <a href="mailto:shiviyup@gmail.com">Shiviyup@gmail.com</a>
</p>
<p><i class="fa fa-clock-o"></i>
<abbr title="Hours">H</abbr>: Monday - Sunday: 9:00 AM to 9:00 PM</p>
<ul class="list-unstyled list-inline list-social-icons">
<li>
<a href="https://www.facebook.com/shivangi.srivastav.7547/"><i class="fa fa-facebook-square fa-2x"></i></a>
</li>
<li>
<a href="https://www.linkedin.com/in/shivangi-srivastava-86b155169/"><i class="fa fa-linkedin-square fa-
2x"></i></a>
</li>
<li>
<a href="https://twitter.com/home"><i class="fa fa-twitter-square fa-2x"></i></a>
</li>
</ul>
</div>
</div>
</div>
```

```
<br/><br/></div>
```

CODE FOR INDEX.PHP

```
<?php
session_start();
 require('dbconfig.php'); ?>
<!DOCTYPE html>
<html lang="en">
<head>
<script async src="https://platform-
api.sharethis.com/js/sharethis.js#property=5ed6038bc84977001234f0d7&product=sticky-share-buttons"></script>
<meta charset="utf-8">
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-scale=1">
  <title>CULTURE HERITAGE SITES OF ASSAM</title>
  <link href="css/bootstrap.min.css" rel="stylesheet">
<link href="css/modern-business.css" rel="stylesheet">
<link href="font-awesome/css/font-awesome.min.css" rel="stylesheet" type="text/css">
</head>
<STYLE>
body{
background-color:black;
background-image: url('IMAGES/WHITE1.jpg');
}
</STYLE>
<nav class="navbar navbar-default navbar-fixed-top" role="navigation" style="background:#66CCFF">
<div class="container" >
<div class="navbar-header">
<button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#bs-example-navbar-collapse-1">
<span class="sr-only">Toggle navigation</span>
<span class="icon-bar"></span>
<span class="icon-bar"></span>
<span class="icon-bar"></span>
</button>
<a class="navbar-brand" href="index.php" style="color:BLACK"> EXPLORE CULTURAL HERITAGE SITES OF
GUWAHATI</a>
</div>
```

```
<div class="collapse navbar-collapse" id="bs-example-navbar-collapse-1">
<ul class="nav navbar-nav navbar-right">
  <li style="color:BLACK">
<a style="color:BLACK" href="index.php"><i class="fa fa-home fa-fw"></i>Home</a>
</li>
  <li style="color:BLACK">
<a style="color:BLACK" href="LIST.HTML" info="Cultural Heritage Sites Of Assam"><i class="fa fa-home fa-fw"></i>Cultural Heritage Sites Of Guwahati</a>
</li>

<li><a style="color:BLACK" href="index.php?info=registration"><i class="fa fa-sign-out fa-fw"></i>Registration</a></li>
  <li class="dropdown">
<a style="color:BLACK" href="#" class="dropdown-toggle" data-toggle="dropdown" href="#"><i class="fa fa-sign-in fa-fw"></i>Login
<span class="caret"></span></a>
<ul class="dropdown-menu">
<li><a href="index.php?info=login">Student</a></li>
    <li><a href="admin">Admin</a></li>
</ul>
</li>

  <li>
<a style="color:BLACK" href="index.php?info=contact"><i class="fa fa-phone fa-fw"></i>Contact</a>
</li>
  </ul>
</div>
</div>
</nav>
<?php
  @$info=$_GET['info'];
    if($info!="")
  {  if($info=="about")
     {
     include('about.php');
     }
```

```
else if($info=="contact")
        {
        include('contact.php');
        }
        else if($info=="login")
        {
          include('login.php');
          }

          else if($info=="registration")
          {
    include('registration.php');
          }
         }
         else
         {
         ?>
         <header id="myCarousel" class="carousel slide">
    <ol class="carousel-indicators">
    <li data-target="#myCarousel" data-slide-to="0" class="active"></li>
    <li data-target="#myCarousel" data-slide-to="1"></li>
    <li data-target="#myCarousel" data-slide-to="2"></li>
    </ol>
    <div class="carousel-inner">
    <div class="item active">
    <div class="fill" style="background-image:url('images/POOL.png');"></div>
      <div class="carousel-caption">
    </div>
    </div>
    <div class="item">
    <div class="fill" style="background-image:url('images/SILKA.jpg');"></div>
    <div class="carousel-caption">

    </div>
    </div>
```

```
  <div class="item”>
<div class="fill" style="background-image:url('images/GOA.jpg');"></div>
<div class="carousel-caption">
</div>
</div>
    <a class="left carousel-control" href="#myCarousel" data-slide="prev">
<span class="icon-prev"></span>
</a>
<a class="right carousel-control" href="#myCarousel" data-slide="next">
<span class="icon-next"></span>
</a>
</header>
  <div class="container">
<div class="row">
<div class="col-lg-12">

<div class="col-sm-10" style="margin-top:60px;margin-bottom:80px">
<div class="heady" ><h1><font color="black"><center><bold><mark>WELCOME TO GUWAHATI-ASSAM-THE PRIDE OF INDIA</mark></bold></center></h1></font></div>
<font color="black"><center>Assam is the meeting ground of diverse cultures. The people of the enchanting state of Assam are an intermixture of various racial stocks such as Mongoloid, Indo-Burmese, Indo-Iranian and Aryan. The Assamese culture is a rich and exotic tapestry of all these races evolved through a long assimilative process. The natives of the state of Assam are known as "Asomiya" (Assamese), which is also the state language of Assam. The state has a large number of tribes, each unique in its tradition, culture, dress and exotic way of life.

Diverse tribes like Bodo, Kachari, Karbi, Miri, Mishimi, Rabha, etc co-exist in Assam; most tribes have their own languages though Assamese is the principal language of the state. A majority of the Assamese are Vaishnavas (a sect of Hinduism). The Vaishnavas do not believe in idol worshiping and perform "Naamkirtana", where the glory of Lord Vishnu is recited. The two important cultural and religious institutions that influence the cultural fabric of Assam: the "Satras", the site of religious and cultural practice which have been in existence for over 400 years and the "Naamghar", the house of prayers. Villagers generally associate on the basis of membership of a local Centre of devotional worship called "Naamghar". Villages are usually made up of families from a number of distinct castes.

In Assam, the caste system, although it exists, is not as prominent as in other parts of India. Other religions such as Buddhism, Christianity, Hinduism, Islam etc. are also practiced in Assam. The state festival of Assam is the Bihu which is celebrated in three parts during a year with great pomp and grandeur by all Assamese, irrespective of caste,
```

creed or religion. There are various elements which are being used to represent beliefs, feelings, pride, identity, etc and are considered as important symbolic elements in Assamese culture. The quintessential symbols are the Asomiya"Gamucha", "Jaapi", "TamulPaan" and "Xorai". Traditional attire worn by women called the "Mekhela Chador" and Assamese jewellery also form an integral part of the Assamese culture.

```
</FONT></p></CENTER>
  </div>
 <?php } ?>
</div>
</div>
<div class="navbar-fixed-bottom nav navbar-inverse text-center" style="padding:15px;height:40px; background:#66CCFF">
<span style="color:BLACK">Developed By: .....  SHIVANGI SRIVASTAVA        </span>
</div>
<script src="css/jquery.js"></script>
<script src="css/bootstrap.min.js"></script>
<script>
$('.carousel').carousel({
interval: 5000 //changes the speed
})
</script>
</body>
</html>
```