UNIVERSITY OF GONDAR

College OF INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

Technology Transfer Project Proposal

"Promoting Gorgora for Improving Investment and Tourist Attraction Through Web Automation"

FULL NAME, TITLE AND ADDRESS OF THE PRiNCIPAL AND CO-INVESTIGATORS

S. No	Name	Sex	Educational level	Email	Telephone	Department	Specialization	Signature
1	Birhnaie Ewnetu	M	M.Sc	birhanie.ewnetu@uog.edu.et	0921284667	Computer Science	Computer Science	
3	Kibret Zewdu	M	M.Sc.	Kibret.zewdu@uog.edu.et	0988568172	Computer Science	Computer Science	
4	Lomi eyachew	F	M.Sc	lomi.eyachewt@uog.edu.et	0909041758	Information System	Information system	
5	Anteneh Mekuriaw	M	M.Sc	Anteneh.mekuriaw@uog.edu.et	0910064055	Computer Science	Computer Sicnce	
6	Mengistu Belete	M	M.Sc	mengstu.belete@uog.edu.et	0918046690	Information techology	IT	
7	Shumet Taddese	M	Msc	Shumet.tadesse@uog.edu.et	0910064055	Computer Science	Computer Science	

Summary, mix of team members

S. No	Team members specialization	Number		Teams members		
		Male	Female	University staff	Stakeholder	Student
	Computer Science, Information Technology and Mental Health Departments	5	1	6	1	1

DURATION OF THE PROJECT

- Date of Commencement: October 2022

- Date of Termination: June, 2023

Total amount of the grant: **376,850**

Contents

Executive summary

Title: Promoting Gorgora for Improving Investment and Tourist attraction through web automation for Gorgora city.

Project Goal: the goal of this project is to develop a web based application system to be developed for improving investment attraction and tourist attraction so that, the city will have its own full-fledged web-system..

Project Purpose: The purpose of this project will be designing and developing a web based application that a lot of historical information and other related information of the historical place will be promoted.

Project area: Gorgora city

Target population or beneficiaries: people who live in the city and around areas, the Central Gondar zone tourism office.

Current project status: New

Project owner/holder: The project developers, Gondar city administration, Amhara region and the country in General

Project implementation and evaluation: The project will be implemented in a client-server environment where the application is hosted at a remote web server and clients who are in the network will access the system. Regarding evaluation the system will be evaluated based on concrete evaluation milestones (Requirement, Analysis, Design, Implantation and Testing).

Project funding organization: University of Gondar, Vice President for Research and Community Services will cover the total budget.

Assumptions and Risks: The only risk that we presume may come after its development for the very fact that people who live in the city may not fully use the system because of a warnance and illiteracy so that we fear huge   amount of information will be left unutilized.

1. Introduction

1.1 Background

As the use of information and communication technologies (ICT) has become the nervous system of all modern economies, making educational institutions smarter is usually achieved through the use of ICT intensive solutions. In fact, ICT is already at the heart of many current models for urban development which helps to implement new ways of essential services [1].

Ethiopia is a palace where a lot of attractional places for tourist and investment are found among those Semien National park, Dankiel depression, Harar, Lalibella, Fasil castele, Aksum, Arba minch and others [2].

Gorgora, found in C/Gondar Zone , Amhara Regional State . It refers to a small peninsula jutting into Lake Tana as well as to a small village hosting a harbor. The peninsula was important in the past as the site of an important Jesuit residence: "Old" Gorgora was located 5 km northeast, inland from Maryam Gimb, which was called [3] Gorgora, and 5 km west of Debre Sina and its churches (usually not considered a town in its own right). Other notable landmarks include the monastery of Mandaba, located at the headlands of Gorgora peninsula. R.E. Cheesman visited Mandaba in 1932 and described the monastery as being enclosed by a high wall and no woman is allowed inside its gate. There are a lot of residents, monks, the monastery is governed by an Abbot who has the power of putting refractory monks in chains, and is all powerful in his own monastery.

We know that,   Prime Minister of Ethiopia , Dr Abiy Ahmed initiated "Gebeta Lehager Project" a few months back , which's over all benefit is making tourist destination places more attractive and suitable for tourism and investment , having the aim of benefiting the surrounding population and the country in general . In Line with this Gorgar was one of the site, selected for this opportunity.

This project is about promoting Gorgora for tourism and investment through web automation, which will be developed to make the functional areas more efficient and effective. One of the main intensions of this project is to develop system that will provide a good service for investors, funders and tourists so that they will access the service where ever they are.

This software is primarily focused on managing funder raising registrations, historical place promotion, providing investment opportunities, address issues for frequently asked Questions, facilitating communication for different stakeholders, promoting Gebeta lehager project, provide gallery based service to see insight of Gorgora through online.

2. Statement of the Need

In Ethiopian context, the move towards smart e-city is under process. Since it needs a multi-billion dollar ICT infrastructure and well trained professionals. However, it is wise to make existing manual system automated for different sectors efficiently via existing digital technologies [3]. Nowadays with the growth of population, services are unable to reach for the people irrespective of distance and time.

Organizations, individuals and other have begun responding for the Prime Minsiter Dr. Abiy Ahmed's call of "Gebeta leHager" through manual way, despite the task it is a good idea to promote the City with digitalization so that, its reachability and ease of access will increase. As the result people's, organization and individuals whose base are inside or outside of Ethiopia will use the web system to search, to know, easily communicate, see investment opportunities and other services in fast and convenient way [4].

Because of lack of automated system that can support in overcoming problems related with speed, accuracy, security, portability and many more like efficient and effective management of records and information dissemination which leads to a series of problem like.

❖ Lack of Integrated information management System that provide needed information to the people online

❖ Lack system for introducing Gorgora city

❖ Lack web system , that can help people to communicate concerned bodies

❖ Unable to get effective reports with short period of time

❖ Due to lack of automated web system, peoples are enforced to come physically to know and see investment opportunities

❖ Since digitization is power for countries economy, it is a must to promote Gorgora with digitization

❖ Unable to get any updates related to any updates related to Gorgora related information to the concerned body

Generally, the above mentioned problems are list but not last kind of problems that we should focus on for promoting Gorgora for various Economical activities.

3. Project Objective

3.1 General objective

The general objective of this project is to develop web system of "Promoting Gorgora for Improving Investment and Tourist attraction through web automation that will enhance efficiency reliability of different online services.

3.2 Specific objectives

In order to achieve the general objective of this project, the following specific objectives will be addressed.

The specific objectives of the system are:

- o Conducting a complete requirement analysis and specification followed by rigorous requirement gathering via different scientific approaches and models.
- o Conducting a thorough architectural designs of the application in various platforms.
- o Conducting the necessary user interface designs of the final output.
- o Conducting a complete database designs.
- o Conducting a complete component designs of the system.
- o Conducting implementation through coding different components and integrating them to deliver the first prototype of the system.
- o Conducting a full evaluation of the prototype together with the stakeholders through various testing mechanisms.
- o Completing the whole system from the prototype and the requirements gained from the evaluation of the prototype.
- o Conducting a full deployment of the system.
- o Provide web system that help visitors access plenty of information about Gorgora
- o Provide web system , that help funders to submit their amount
- o Provide web system that help investors to look for different investment opportunities on the web site
- o Provide web system that help access latest news about Gorgora city

4. Materials and Methods

4.1 Method of Technology Transfer:

After evaluating related technologies and analyzing existing fully manual work of promoting Gorgora for tourists and investments the intended web system will be developed. This application will help local peoples around the city, peoples around the region and outside of the region, Tourists and other concerned bodies to get all-in-one information service through the System. On the first hand all the needed information of the Gorgora city as well as some other needed data's will be loaded on the system .Then after loading all the necessary information , the developed web based application will be deployed in the server for production.

After the system is deployed it will be opened for use and different promotions will be done for national and international populations to use the web system. Thus different peoples and investors

will access and use the system according to their need. In this time the correct functionality and effectiveness of the application will be tested in detail.

The application is developed for C/Gondar Zone administration and Gondar city administration office and this office will take ownership of this application. Distribution and managing of the system to the office will be managed by the developer and this office officials. In addition developers will take role of hosting the system on ethio tel. Regarding update the system can be easily updated whenever new functionalities needed to be incorporated.

4.2 Materials Required:

4.2.1 Fact finding methods

The development group will use two methods for gathering need assessment: the first is through primary sources of information gathering such as observation and interview.

Regarding observation the development group will try to collect need assessment by observing the site .

Interview: - The development team will try to interview the concerned body and will gather a lot of information through key informant interview as well focus group interview.

The second way of collecting need assessment is through secondary sources of data. The development group will try to read a lot of articles and other sources related web development for tourist site.

Some tools and software used in system development

- o Project management application
- o Drawing graphics application
- o Case tool
- o Integrated development environment
- o Database Management System Software

Some techniques used in system development

- o Strategy planning techniques
- o Project management techniques
- o User interview techniques
- o Data modeling techniques
- o Object oriented analysis design techniques

System Development Tools

Information system is developed by following software engineering process which consists of proven tools. These tools are technological products like computer software programs, interfaces

which used to develop software. In this project we will use some technological software and hardware products, to list some of them:-

- **Java Related IDE**:-here we will use integrated development environment (IDE) that contains a base workspace and an extensible plug-in system for developing the environment.

- **Apache server**: - a collection of different server services which are local servers in which the application to be developed is laid down and to be tested until the application is launched for use.

- **Glash Fish server:** like apache server we can use this server in case apache server gets busy.

- **Edraw Max**:-software used to create and publish kinds of diagrams to represent any ideas. It's an all-in-one graphics software that makes it simple to create professional-looking flowcharts, organizational charts, organizations business process presentations, mind maps, UML diagrams, workflows, program structures, web design diagrams, database diagrams. We are planning to use this software technology to construct the software architecture and database architecture.

- **Adobe Photoshop:** is the predominant photo editing and manipulation software on the market. Its use ranges from full featured editing of large batches of photos and creating intricate digital paintings and drawings that mimic those done by hand.

Hardware for developing the project

The system needs different materials to develop this application and to run the system in real world, the basic hardware with minimum requirements are:

- Computer (4Gb Ram, intel core i3 processor, 1 TB hard disk)
- Flash disc(32 GB)
- Digital camera

4.3 Methods to Test the technology:

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies and/or a finished product [5].

Unit testing

Unit testing involves the design of test cases that validate the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated.

Test objectives

☐ All field entries must work properly.

☐ The entry screen, messages and responses must not be delayed.

✓ **Integration Testing**

Integration tests are designed to test integrated software components to determine if they actually run as one program. Integration test demonstrate that, although the components were individually successful, as shown by successfully in unit testing, it help us to verify the combination of components is correct and consistent.

✓ **System Test**

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results.

☐ White Box Testing.

☐ Black Box Testing

☐ Acceptance Testing

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

Generally the application that will be developed must pass through the above listed type of tests and it must be free from all the errors that are encountered.

5. Benefits and Beneficiaries of the project:

Benefits of the project are as follows:

This project addresses the inherent problem of Gorgora city which don't have a well-organized web application system that addresses the issue of lacking of automated system for enhancing promotion and tourist attraction.

The availability of such a system will make all necessary information available to the people of Ethiopia who live inside and outside of the country. In addition it have enormous benefits to the cities administration as a whole. Besides this project is used for building the image of our university by addressing the community problem and leading the country to e-governance system.

Generally the project has the following benefits

Promoting Gorgora for tourist attraction and investment opportunities help the Gondar tourism and regional tourism office to facilitate their Gorgora related investment tasks and to give required services for customers in a better and fast way. In general the j automation system has the following benefits:

- ❖ Contains web based system that helps the tourism office to advert the Gorgora related daily jobs.
- ❖ Contain web system helps investors getting a lot of information
- ❖ Contain web system which help the people around the globe to know the detail history of Gorgora .
- ❖ Contain web system for easy communication of funders around the globe
- ❖ Contain web system which help answer frequently asked question about Gorgora project
- ❖ Improved quality and availability of information for reporting and operations.
- ❖ Increased system flexibility and configurability.
- ❖ Improving data security.
- ❖ Immediate data retrieval.

Beneficiaries of the Project

Customers: when they use the software they are saving their time and energy for searching information

The city: will enhance the development of the town in the side of technology.

Gondar city,C/Gondar Zone, Regional Tourism Office: will enhance the quality of service that it gives to the community

University of Gondar: building its image by addressing community problem through technology intervention.

6. Technology Transfer Plan

Project Goal: The goal of this project is implementing web based application system to be developed for the city of Gondar tourism office, Gondar tourism office and regional tourism office so that they can use the system for different functionality.

Project Purpose: the purpose of this project would be designing and developing web based application so that a lot of information about Gorgora project which is of having great importance to city administration officials and the people of the city will be provided and manipulated.

Approach:

The approach to develop this project includes assessing of the aforementioned problem with the stakeholders, gathering requirements from the corresponding stakeholders **,** analyzing the system using scientific approaches and methodologies **,**designing the to-be solution to the investigated problems **,**implementing and deploying the designed system**,** providing trainings to those who are going to update and manage contents of the system and providing the necessary maintenance and supports tasks for the deployed system. Here the development team will address and maintain those issues by using good and feasible approaches.

Deliverables:

- Centrally controlled database which contains the necessary data
- A system that provides updated information on different issue of Gorgora Project.
- A system that enables easy search and navigation of the required services
- A system that make the services fast and easy to use
- A system that provide in-depth history of Gorgora
- A system that enable funders to ealy contact services
- A system that enable investors to look for different options online

7. Proposed Strategies to Measure Impacts

Impacts of the project will be measured in a controlled environment. First the application will be deployed and ready for use to some Visitors, funders and investors which can use the system voluntarily. But, all other users will use the existing manual system for one up to two months long. On the duration of these months' the one who are utilizing the web system response against the service (system) will be measured and compared with response of others using the existing manual system. And here, customer's habit against using the system to get different services will also be measured and compared with those who are not using the developed system. Thus if the development group gets some valuable feedback, comments, amendment on the system will be integrated accordingly.

8. Feasibility of the Technology

This project is feasible for all aspects of feasibility measures. From economical perspective the amount of money required to develop the project is fair as compared with the wide range of benefits obtained from it and the cost incurred to import the technology.

For technical aspect the development team is composed of staff members having good technical and managerial skills and experienced in developing related applications. In addition the required hardware's and software's are available in the market at affordable price.

The Proposed application will be operationally feasible because intensive study of an existing system will be carried out in order to understand the system very well. Detailed understanding of an existing system will help us to design a system that can be operational within an existing organizational framework. All working business processes, rules, regulations, and policies will be taken in to consideration on the design a new system.

This application will be completed within the budget year without any delay. Feasibility concerning time schedule will not be an issue on this project.

9. Descriptions of Facilities available at sites Performance

Technological infrastructures will not be a problem for this project because they are already in place. One important facility is the availability of an internet line. In our faculty there is a sufficient availability of an internet service. And the other facilities are Hardware and Software Materials required for developing the system so as we mentioned above we can get them easily. So all facilities required at the site of performance are already fully available.

The other one is availability of facilities that are on the office to run the to be developed system, so the team had checked and confirmed that there are plenty of options to host the system, among them Ethio-telcom is the one capable of handling hosting of the system.

10. Component Stages of the Project

PHASE I: **Requirement Gathering**

> Duration: (From 22/07/2022-22/09/2022)

> Description: User requirements will be assessed; information's will be collected, complied and organized

PHASE II: Requirement analysis

> Duration :(From 23/09/2022 - 23/10/2022)

> Description: in this stage deep analysis is done based on the collected user requirements.

PHASE III: System Design

Duration :(From 24/10/2022 - 24/11/2022)

- Description:
  - o Logical system design
  - o Logical database design
  - o Detailed database design
  - o System user interface design
  - o System deployment architecture design

<u>PHASE IV:</u> System Implementation

Duration :(From 25/11/2022 - 25/12/2022)

- Description:
  - ✓ System coding including
    - ▪ Database coding
    - ▪ User interface coding
    - ▪ Coding for the business logic of the project will be done in this stage

<u>PHASE V:</u> System Testing

Duration :(From 26/12/2022 - 30/01/2023)

- Description:

All the testing mechanisms will be done here and if there is any inconvenience debugging will be done.

12. References

[1]. Kranthi Kumar.Ravi. P.J.Narayanan and C.V.Jawahar. A Multimedia-based City Information System. Indian Institute of Information Technology IETE Technical review, 2001.

[2]. Sitools2, a framework for archival systems Jean-Christophe Malapert (1) (1) CNES 18 Av. Edouard Belin 31400 Toulouse Cedex 9 EMail: jean-christophe.malapert@cnes.fr

[3]. Impact of an SMS advice programme on maternal and newborn health in rural China: study protocol for a quasi-randomised controlled trial,2008

[4].Court Case Management System Functional Standards:A Development Road Map November Brief History of Case Management System Functional Standards, 2005

12. Cost of the Project

The Principal Investigators will be responsible for the successful execution of the project.

12.1 EQUIPMENT AND CONSUMABLE

Item	Measuring unit	Number/Amount	Unit price in Birr	Total price (Birr)
Note book	Number	10	15	150
Mobile Card	Number	10	100	1000
			Sub-Total	**1150**

12.2 PERSONNEL COSTS

Work type	Measuring unit	Number/Amount	Unit price in Birr	Total price (Birr)
Compiling and synthesizing additional documents	Persons x days	10 x 10	102.25	10225
Perdiem for data collectors during data collection	Persons x days	5x 15	409	30675
Reviewing related works	Person x days	5x15	465	34875
Perdiem for supervisors during data collection	Persons x days	5 x 10	409	20450
Data Clearance and preprocessing	Persons x days	9x 20	102.25	18405
Back end design , database design	Persons x days	5 x 30	465	69750
System Development	Persons x days	5x25	465	58125
User Interface Design	Persons x days	5x10	465	23250
Testing	Person x days	10x12	465	55800
System hosting	Person x days	3x10	465	13950
Data entry for the system	Person x days	5x10	102.25	5112.5
Deployment and give support	Persons x days	10x15	102.25	15337.50
		Sub total		**355,955**

13.4 Transport Cost

S.No	From	TO	Unit	Frequency	Number /Amount	Unit price in Birr	Total Price in Birr
1	Bahirdar	Gondar	No	3	5	70	1800
						Sub-Total	1800

SUMMARY OF TOTAL BUDGET

S.N	Budget line	Sum of allotted budget
1	Equipment & Consumable	1150
2	Personal cost	355,955
3	Transportation cost	1800
4	Total	358,905
4	Contingency (5%)	17945
	GRAND TOTAL	376,850

Assurance of project coordinators:

The undersigned coordinators in this project agree to accept responsibility for the provision of required progress reports and submission of the final outcome (if any) as per terms and conditions of the RCSCP in effect at the time of grant if grant is awarded as the result of this application.

Name of the Project Coordinators   **Signature**   **Date**

1._____   _____   _____

2._____   _____   _____

3._____   _____   _____

4._____   _____   _____

5._____   _____   _____

6. ._____   _____   _____

7. _____   _____   _____