# School of computing

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dormitory management system srs

group-7

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CHAPTER ONE

1. Introduction

Technology is spreading its wing in almost every walks of human life activities. Now a day it is better if every activity is done using new technology in order to fulfill the need of human being, Organization, Enterprise etc. As today’s world there are many organizations and each organizations needs to be preferable, computable and work on fastest way in order to satisfy users interest etc. i.e. they should have facilitate their activities in computerized way.

Many developing countries are in a good position to exploit the opportunity of technology revolution and advance human development. The information and communication technology provide new resource materials for expanding communication.

In fact the second half of 20th century has wittiness the global phenomena of an information explosion. The development in communication technology has made it possible for millions of people to have fast access to vast information presented in several forms. Today computer and other electronic device increasingly communicate and interact directly with other devices over a variety of network such as internet. The internet provides individuals and small business centers for the ability to communicate inexpensively.

Hence, developing the system using technology has a tremendous effect for organizations and offices; which is in our case the woldia University Online dormitory management system (WDUOMS). Currently, the system is manual based; due to this the students and proctors faces some problems Because of this, we are initiating to develop our project on dormitory system in order to minimize the problem by using computerized system.

1.1 Organizational background

Woldia university was established through the council of ministers Regulation No 223/2011 issued on may 26,2011.

Corner stone for construction activities of the university was laid on Oct ,26,2008 by his Excellency Ato Ayalew Gobezy , former president of the Amhara Regional state , and his excellency Dr. Adhana Haile , former deputy state minister of education

Currently, the total area of the university is 196 hectares of land. Woldia university has two campuses, namely ,the main campus called Woldia university and the other one is mersa campus of Agriculture. It is 25 kms far from the main campus.

The first batch of students, numbering 599, has been admitted to the university on Dec 10/2011 in fabulous reception ceremony involving invited guests city residents, representatives of different zone & Woreda administrative offices and university’s community . students have been placed in to four faculties and 12 departments.

In its second year of operation ,the university admitted over 1457 New students . The number of faculties grew in to six ,the two newly added being the faculty of Agriculture and pedagogic al and behavioral science faculty . Like wise , the number of departments doubled in to 24. Currently, the university has a student population of over 10,000.

The university is anticipated to contain a student population of 15,000 over a period of five years. More than 200 blocks are planned to be erected in different phases with in the specified period.

In the University there are different management activities were performed. Among those the main service which provides the university to the student is Students’ Dormitory Management can be taken as an example. In this process there is a problem associated with the Dormitory Management. So we the project team members were initiated for this project to identify and analyze those problems and to put possible solutions.

1.2 Statement of the problem

Currently, WDU dormitory management system uses manual approach. To process the operation first the ministry of education sends all the information to the registrar bureau and gives to the student affairs (dormitory) and to the dinning office. After taking the list, they assigned students to each block and room. At that time they face different problems during operating their tasks. Working by paper based i.e. manual system is not only affecting the management members, rather it also for student during viewing of their dormitory information. Some of those problems are:-

* Data duplication and Time consuming.
* Require more human power to assign the students.
* Management inflexibility

Objective of the project

General Objectives

The main objective of this project is to develop a new Web Based Dormitory Management System which solves the above mentioned problems with the existing system. This is achieved by designing a web based application program that will change the actual manual processing into a computerized environment.

Specific Objectives

In order to achieve the main objective, we have the following specific objectives:

* Developing user friendly interface.
* To keep the overall records associated with the dormitory and student information in a permanent database.
* To minimize the work load of the employees (proctors).
* To assign the dorm to the students without any fault.

Significance of the project

The new online dormitory management and allocation system is highly reliable, easy, fast and consistent and will play a crucial role for reliable service for students, proctors, and for the management. The significance of the system includes:

* To minimize time and efforts needed to perform tasks.
* To make tasks simple and efficient in every aspects.
* To manage the students and building information.
* Providing a well-organized and guaranteed record keeping system with minimum space and effort need.
* To enable the university to get acceptance in the outside community.
* Developing students’ effective communication with the university.

Scope and limitations of the project

Scope of the project

Since WDU dormitory management performs its basic tasks manually the scope of this project is to develop and implement a new web based Dormitory Management system which will avoid the problems associated with the manual processing.

The proposed system includes:-

* Assign the dorm accordingly
* Enable students view their dormitory information easily and quickly
* Generate report.
* Manage dormitory related information.

Limitations of the project

* It’s difficult to know students information and give clearance while they are living the campus.
* Failure of electric power and network connection

Description of existing system

The current system of WDU dormitory management system is manual (partial). In order to arrange and allocate students to dorms, they have to follow the record as it is arranged by WDU Registrar office and allocate Students depending on department and the lists of the students’ arrangement. After getting the list from the registrar office, the proctor allocates the students to each block and dorm. Since there are so many students, the allocation method causes problems like assigning female students to males’ dorm and vice versa and also assigning students more than the capacity of the dorm. In addition to these problems, during assignation there is no consideration of disable students.

Major functions of existing system

Even if the existing system is performs its activities manually (partial), it has different major functions.

* Arranging buildings for the allocation: here the total number of building is determined with its holding capacity
* Arranging students for allocation: here total number of students and their academic information such as department, sex, faculty, and class year is received from registrar. Students are then arranged based on their sex, class year, and their department and faculty for dormitory allocation.
* Dormitory allocation: based on the arrangement of students dorms are allocated for students along with associated dormitory resources, like lockers, tables, chairs, beds and the like.
* Generating allocation report: based the dormitory allocation the allocation report is prepared and posted for student when they arrive at the campus after annual break.
* Managing and controlling dormitory materials: at the beginning and end of each year, dormitory materials are recorded and controlled whether they are functioning properly or not, then appropriate measure is taken.
* Controlling student’s discipline: In addition to the above functionalities student’s discipline measures are controlled and recorded, whether they use the dormitory materials properly or not, and whether they act and perform things as per the dormitory rules and regulations.

Problems in the existing system

The manual (partial) dormitory management system is disposed to various problems. These problems can be seen from the following perspectives like performance, information, economic, control, efficiency and services given by the existing system to the users.

* The performance of any system is required to show to meet the needs of users of that system. The current system’s performance is weak. This is due to the following reasons: - first the acceptable quantity rate is relatively high i.e. the time required from initiation to completion of a particular task is relatively high. For example during arrangement of buildings for the allocation it may take a week or more due to its manual operation. Second is the acceptable response time for a particular task is large.
* Information- the main input for the current system is student record and records of different dormitory materials which enable the system to rearrange students and buildings for the allocation. Based on this the system rearranges and allocates dorms for students at the beginning each academic year and generates the allocation report which may be viewed by the students as well as the management. The other data that is stored is record of materials associated with the dormitory. The system manipulates and manages all of these and other records manually on papers.
* Controlling- since all the records associated with the manual system are recorded and stored manually the security that the system provide for the privacy of this records is not good. The system shouldn’t provide sufficient protection for access and manipulation of the records associated with the system.
* Services- the main users of the current system are students and the management itself. The services given to users are not flexible, reliable and expandable i.e. the users must there in the campus to get the services given by the system. Those services given by the system are limited to a particular area.

Propose system

Dormitory management system is a web-based application project. It provides an online and automated platform for Universities or Colleges' Dormitory to manage their monthly collections and records. The system consist consists of multiple features. It consists of user-friendly features and functionalities.

The management can only access this Dormitory Management System. The registered system admin can access the system features and functionalities. The Administrator Users have the privilege to access and manage all the features and functionalities of the system.

Dormitory Management System allows the management to manage the list of dormitory buildings, rooms in each dorm, and student accounts. The management must first populate the list of dorms, rooms, and students when using the system for the first time.

The system was developed with user-friendly features and functionalities with CRUD (Create, Read, Update, and Delete) Operations. It can help the school management to efficiently and effectively manage the dorms' collections and account records.

Beneficiaries of the new system

The beneficiaries of the system are:

* Students: the students can view their dormitory information easily and timely.
* Proctors and other administrative officials: they can access dormitory and related information easily.
* University: the university gets better audience.

Methodology

#### Data gathering

The data collection instruments used to gather accurate information about the existing system and the requirements for the new system. Interviews were administered to Stakeholders like Students, Proctors and administrators to collect user requirements. Observation of the current existing system was done at the Dormitory management office in order to find out how the existing system functions, the problems encountered and how they can be solved by the new computerized system.

To get a precise data, the team member has used the following data collection techniques. Those are: -

1. Interview: - to get the basic information and background information about the existing management system, the team members has interviewed the proctors and some students about the services that are given to them, and the problems associated with that environment.
2. Direct observation: even though interview is very important to gather information, direct observation is simple and we project team members physically observe information that cannot maintain from the interview or others and also it is important if they are unable to communicate with others because of the difficulties they have to the language.

### Tools used in the project

While developing the project starts from the documentation to the implementation we use the following case tools:

|  |  |
| --- | --- |
| Activities | Tools |
| Documentation | MS word 2007,2010 |
| Design |  |
| Script languages | PHP, JavaScript, CSS, HTML |
| Web server | Apache Xamp server |
| Data base Server | Database |

*Table 1.1 Tools used in the project*

CHAPTER TWO

1. System requirement specification

Functional Requirements

### User Login

Description of feature:

This feature used by the users to login into system. They are required to enter user id and password before they are allowed to enter the system. The user id and password will be verified and if invalid id is their user is allowed to not enter the system.

Functional requirements

-user id is provided when they register

-The system must only allow user with valid id and password to enter the system

-The system performs authorization process which decides what user level can access to.

-The user must be able to logout after they finished using system.

### View student

Description of feature:

This feature keep/shows complete details information of student like his id, name, batch, department, Phone, email and so on.

Functional requirements

-System should be able to display every student profile.

### Search, update and delete Student

Description of feature:

This feature is found in view student part. We can search student based on student id, gender, student name, phone, email, batch, department.

Functional requirements

* System must be able to search the database based on select search type
* System must be able to delete the database based on select delete type
* System must be able to update the database based on select update type

**Filter student**

Description of feature:

This feature is found in filter student part. We can filter students by their gender, department, and batch. To make student allocation easy because the student allocation is made based on their gender, department and batch.

Functional requirements

* System should be able to filter student based on their gender, department and batch
* System must be able to show the filtered student in table view

**Block details**

Description of feature:

This feature should keep the details information of every block.

Functional requirements

-System should be able to add detailed information of blocks.

-System should be able to add information about the maximum number of rooms that on block can hold.

-System must be able to show details information of each block.

**Block allocation**

Description of feature:

This feature should assign/ allocate students in the block based on their gender, department and batch. It allocate block by iterating number of room by one until it have the same value as the maximum number of rooms that one block can hold. When it fit the value it will move to the next block to allocate.

Functional requirements

-System should be able to allocate block for student based on their gender, department and batch.

-System must be able to iterate the number of rooms until it fit the maximum number of room in the block to allocate students.

-System must be able to move to the next block when the preceding block is full.

### Room details

Description of feature:

This feature should keep the details information of every room and its furniture.

Functional requirements

-System should be able to add detailed information of room.

-System must be able to show details information of each room

**Room allocation**

Description of feature:

This feature should assign/ allocate students in the room based on the filtered report. It allocate rooms by iterating number of student by one until it fit the maximum number of student that on room hold. When it fit the value it will move to the next room to allocate.it continue until it reach the maximum number of rooms that the block hold.

Functional requirements

-System should be able to allocate rooms for student by taking filtered report of the student.

-System must be able to iterate the number of student until it reach the maximum number of student one room can hold.

-System must be able to move to the next room when the preceding room is full.

-System must be able to move to the next block when the maximum number of rooms one block can hold is reached.

**Student Attendance**

Description of feature:

This feature tick student attendance to know the presence of student in the campus. Then it must report the detail information about the attendance to the proctor manager.

Functional requirements

-System must be able to tick student attendance.

-System must able to report the attendance information

**Non-functional requirement**

#### Security Issue

This system provides an access to an authorized user by giving account for each and every special function. Students can view their dorm information by using their identification card number and/or registration number, and give comment without any validation.

#### Error Handling

Our system handles the errors in a very efficient manner. It can tolerate to wrong inputs and prompts the users to correct the inputs. It gives notifications as and when required, guiding the users to properly utilize it.

#### Performance characteristic

System should quickly respond for user request that is system must immediately display the needed service along with their allocation details after he/she insert needed information to view.

### Efficiency Requirement

When Dormitory management system will be implemented hall officers and student will easily access Dormitory resource (notice, Application form), transaction will be very faster.

### Reliability Requirement

The system should accurately perform member registration, member validation, report generation, transaction and search.

### Usability Requirement

The system is designed for a user-friendly environment so that student, proctors, and admins can perform the various tasks easily and in an effective way.

**Quality Issue**

Information in database should be as much as possible correct and updated in each semester.

Feasibility Study of the new System

Feasibility study is essential to evaluate the cost and benefits of the new system. On the basis of the feasibility study decision is taken on whether to proceed or to cancel the project.

Need of the feasibility study:

* It determines the potential of the existing system.
* It used to determine/finds out the problem of the existing system.
* To determine all goals of the new system.
* It finds all possible solutions of the problems of the existing system.

Operational Feasibility

The system to be developed will provide accurate, active, secured service and decreases labor of workers and also it is not limited to particular groups or body. And also it is plat form independent i.e. it run’s in all operating system.

Technical Feasibility

The system to be developed by using technologically system development techniques such as PHP, Java script, css and database without any problems and the group members have enough capability to develop the project. So the system will be technically feasible.

Economic Feasibility

The system to be developed is economically feasible and the benefit is outweighing the cost. Since this project already computerizes the existing system, by now the reduction of cost for materials used in manual operation becomes beneficiary to the organization.

Generally the system that we developed, WDUODMS brought a number of tangible and intangible benefits.

**Tangible benefits:**

1. Cost Reduction
2. Error Reduction
3. Increase Speed of activity

The team member calculated the corresponding the tangible benefits with sample monetary:

1. Cost Reduction: - To calculate these following things will be considered.

Total Number of proctors in existing system= 50

Average Salary of each proctor per month = 1750.00Birr

Total money required for payment per year= 50\*1750\*12= 1,050,000Birr

Average Number of proctors needed when the new system is deployed= 30

Average salary of each of them per month = 1750.00Birr

Total money required for payment per year= 30\*1750\*12= 630,000.00Birr

Difference b/n before and after deployment money required for payment

Cost Reduction and Avoidance= 1,050,000Birr -630,000.00Birr

=420,000.00Birr

2. Increase Speed of activity: - Increased speed calculated as follows

Especially in allocation:-

Average Days required for allocation= 15 days

Average proctor salary per day=41.61birr

Average Days required for allocation in terms of money=50\*41.61\*15= 31,207.5Birr

Average days required for the system= 3 day

Average Days required for allocation in terms of money=30\*41.61\*3= 3744.90Birr

Difference = 31,207.5Birr -3744.90Birr=27,462.6 Birr

**Intangible benefits:**

1. Reduce Resource Consumption
2. Increase security
3. Increase Management flexibility