

**INSTITUTE OF TECHNOLOGY**

**SCHOOL OF COMPUTING DEPARTMENT OF SOFTWARE ENGINEERING**

Web based software project managements for Student Cafeteria Meal Card (SCMC)

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# Chapter one

## Introduction

## Background of the organization

**Woldia University**

Woldia University is located in North Wollo,Amhara, Ethiopian far from 521 Kilometer in the capital city of Ethiopia, Addis Abeba .

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 compus 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.

## Statement of the problem

## Existing system

In the present scenario the café admin keeps a paper book to keep track of user details. Manual processing of data is always time consuming and may commit more errors. There is much difficulty in allocating cabins to the users. Further reference to the students details is time consuming. Accuracy of such data makes the system unreliable and inefficient. Obviously there is need of an efficient system. The proposed system rectifies the demerits and defects of the existing system to a greater extend.

Through the time, the number of students in WDU is increasing. For this reason, it is difficult to manage cafeteria system manually as efficiently as possible and to give an efficient service for the students on time. the main problem is how the system can give an effective service up on time for the students and draw back the work load of the staff workers. It is difficult to generate report, improper budget sharing, difficult to reject students with re-admission, dismissal cases and students leaving campus for apprenticeship. When budget is not shared equally, food shortage will happen; and this in-turn leads to students’ riot

This self-service fast food café will be equipped with a user-friendly touch screen card reader, and software for completing the process at the backend. For this system there will be a system administrator who will have the rights to enter the menu with their current prevailing prices. He/she can enter anytime in the system by a secured system password to change the menu contents by adding or deleting an item. Now when the students enters to the cafe, he will place his order with the help of the touch screen using the intuitive graphical user interface. He/she will select from the food options according to his/her choice and the system will display the payment amount he has to make once he has finished with his order. He will have the option of paying the bill by cash, debit card or a credit card. The user will slide his card and the system will check for the validity of the card and the payment will be made. A receipt will be printed containing the order number and the order will be sent in the kitchen for processing.

## Major problems of existing system

software project management is the process of planning and leading software project. All tasks and resources must be managed and utilize properly using efficient tools and techniques.

Then the main problem is

* Limitations in report generations
* Manual recording consumes excess time
* Chances of error
* Difficulty in allocating students
* The retrieval of information regarding a student is time consuming
* Repeated recording of frequent user details
* Lack of document security, wastage of data.
* Shortage of food will happen at the end

Focusing on the drawbacks and inadequacies of the existing system, the new system is designed which could well replace the existing system

## Proposed system

The SCMC is a web-based software application that is designed to enhance software project processes and management so,

The new system will be able to:

* Reduce wastage of time
* Retrieve the property lists from the database
* Update the property information
* Give data availability, confidentiality and integrity.
* Generate the report within needed time.
* Minimize the load of workers.
* Facilitate the activity of staff.
* Bring operational efficiency and effective manner.
* Easy to use (user friendly).
* Reduce the need of paper.

## Advantage of the proposed system

* This will minimize the number of employees at the back of the counter.
* The system will help to reduce the cost of labor.
* The system will be less probable to make mistake, since it?s a machine.
* This will avoid long queues at the counter due to the speed of execution and number of optimum screens to accommodate the maximum throughput.
* The system will be available 24 hours for 365 days, because the machine is not going to take any sick or vacation leave.
* Easy to search students profile or information.
* Each student uses their budget properly.
* It will be easy to separate readmission and dismissal students based up on the academic status.
* Data will be accurately securable for the users.
* It will be easy to have detail information of the Non café from that of the café usage.
* Also it will be easy to have detail information about the special cases students and it will be fair for all students to being a special case usage by only fulfilling the rule of form having a reason.
* It will be easy to post if there is a problem with in the café to shift the time back.
* It will save time and resource like papers filling to be Non café.
* Easy to generate a report daily, weekly or monthly

## Motivation

## Scope and limitation of the project

**Scope of the project**

• To Study the effects of new system on order processing time,

• To Study the effects of new system on waiting time for student,

• To Understand the café load at peak times,

• To A better user interface design to give high student QoE,

• To Keeping the café management system up‐to‐date

**Limitation of the project**

* It is known that cafeteria management system needs integration of both the hardware and software applications.
* Hence, this project will only focus on the software development part (i.e. register new students, Check whether students eaten or not, view no of students taken/not their meal, inactivate and activate enrolling students, search student’s file, generate report and other student related activities) and doesn’t include the hardware part due to financial cost.
* The main limitation of this project was time for preparing, writing the document and financial cost for including hardware part, printing, binding the whole document.

## Project Goal and Object

## Goals

## General objective

The general objective of this project is to develop online cafeteria management system for WDU.

## Specific objective

There are some specific activities to achieve the general objective; these are: Developing a database that will store the users and students detail information.

* To analyzing and designing the system using UML language.
* To Create a separate account for Administrator and students.
* To Preparing view menu that students will sign in to the system and view or see what menu will be prepared for the breakfast, lunch and dinner.
* To Differentiate Non café students, special and café usage accounts.
* To Develop attractive interface to navigate through the system for the users.

## Methodology

## Data collection method

Throughout the work of this project, we use different methods for collecting information as well as gathering data. Those are:

**Interview:**

we have gone to the WDU cafeteria administrator’s office and interviewed him.

**Discussion:**

this is one of the technique in which we have seated together and discussed on the project how we can perform the system.

**Observation:**

assessing and analyzing the overall system has been carried out by observing the current working systemize we have gone to WDU cafeteria office and search (seen) how their system works. And we have conducted physical observation to see how data are handled and information of customers is kept in the system.

**Referring documents:**

for the purpose of how customers can be served and what type in addition to this we have searched more data from internet.

## System design and analysis tools

**Development Tools**

* **MS office 2022 :**
* **Window11 pro :**
* **Hard drive .** **:**

## System development tools

There are some tools that we have used for developing the system. These are:-

* **HTML:** for describing web pages and interface application.
* **JavaScript and Ajax:** designed to add interactivity to HTML through validation.
* **CSS:** we have used it add style to html elements for decoration and attractively.
* **PHP:** we used it as a server script because of it run on different platform like windows, and on other servers like Xampp , Apache server.
* **MY SQL server:** for developing database of the system.

# Chapter two :

## System requirement specification

## Background

Student cafeteria is one of the services given in woldia university that has been started its service in 2004E.C. In 2006E.C the university has established second campus in mersa and agricultural students were taken to there. This leads the cafeteria system to have two café. I.e. main campus and Mersa campus. Now at the time the WDU main campus has giving its service for around 9000 students and on the other side Merssa campus gives service for 800 students. Many Campuses are using one card system such as ASTU, JMU and other technology Universities in our country that have got successful result or benefit from the system. Taking those campuses as an example the system will give more benefit for the users’ especially after it will be advanced to one card system.

## Functional requirement

Functional requirement is a description of activities and services a system must provide and exactly what the system must do. These requirements describe the interactions between the system and its environment independent of its implementation. The environment includes the user and any other external system with which the system interacts. Any system has its own users as a main role player. Therefore, it is crucial to meet the users need. So the new system provides (include) the following service:

* Search student’s data.
* Check student’s eaten / not.
* View student who have eat his/her meal.
* Deactivate students.
* Activate students.
* View daily menus.
* Registers special case students.
* Registers Non café usage
* Create account.
* Change account.
* Generate a report monthly or yearly

**Admin**

* The admin manages the mobile application maintainability after the deployment.
* control or edit the role of an other actors in the system .
* The admin can add, delete or edit the menu items.
* The admin can edit the users and their roles in the system.
* Order status and the order processing time can be monitored for efficiency and performance of the waiters.
* The Admin update cafe layout depending on weather and special occasions in the system .

**Ticker**

## Non-functional requirement

A non-functional requirement describes user-visible aspects of the system that are not directly related with the functional behavior of the system. They are concerned with security, performance like speed, usability, maintainability, reliability, modifiability, efficiency, portability (across operating systems), testability, and understandability. So we try to present the non-functional requirements of the system as follow: Performance like:

* **Efficiency**
* **Reliability**
* **Security**
* **Usability**
* **Maintainable**

## Performance requirement

This system is going to be web based, then it requires a powerful server machine, Higher storage space to use more student and bigger workspace per students so higher the storage , better the performance, and web application should be developed as lightweight app so that it can work on almost any platform even with slower internet connections.

## Security requirement

## Portability requirements

## Feasibility study

During system analysis, the feasibility study of the new system is to be carried out. This is to ensure that new system is not a burden to the campus. This study can be categorized into three types. They are:

## Operational feasibility

## Technical feasibility

This study is carried out to check the technical facility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This developed system has modest technical requirements, as only minimal or null changes are required for implementing this system.

## Economic feasibility

This study is carried out to check the economic impact that the system will have on the campus. The amount of fund that the campus can pour into the research and development of system is limited, the expenditures must be justified. Thus the developed system was well within the budget and this was achieved because most of the technologies used are freely available. Only customized products had to be purchased.

## Intangible cost-benefits associated with the project:

## Tangible cost-benefits associated with the project: