Smart College: Hostel Mess Management System to manage the wastage of food

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1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of the web application used for the hosteller's registration and confirmation of meal to avoid food wastage. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which the system must operate and how the system will react to the external factors. This document is intended to be proposed for developing a version of the system for the Hostellers and the Hostel mess authority.

1.2 Scope

This system is a Web based System for a Hostel mess authority that can be used to display the menu of the meals, the ratings of the food items, as preferred by the students. The display of total food wastage per day, the ways of managing and treating the waste generated from the hostels. The residual food per month can be donated to the Non-Government Organizations. This system will act as a tool for communication between the Hostellers and the Hostel mess authority.

Furthermore, the same system can be extended by providing students (including the hostellers) with unique ID Cards. These ID-Cards can be used by the hostellers to pay their mess fees. The ID-Cards can be designed such that they store all the information of the student including personal information, attendance, academic records, extra-curricular activities, and library card details.

1.3 Overview

The Overall Description section, of this document gives an overview of the functionality of the product and system interaction with other systems. It also introduces different stakeholders and their interaction with the system. It describes the informal requirements and establishes a context for the technical requirements specification.

Requirements Specification section, of this document is written for the developers and describes the technical terms and details of the functionality of the product and also mentions the system constraints and assumptions about the product.

2. Overall Description

System Environment Diagram

This section gives an overview of the whole system. The system will be explained in its context to show how the system interacts with other systems and introduce the basic functionality of it. It will also describe what type of stakeholders that will use the system and what functionality is available for each type. At last, the constraints for the system will be presented.

2.1 Product Perspective



The Mess registration system has two actors: the student user and the administrator. The student can register one day prior for the meal (lunch/dinner) by authenticating on the login page for Student's meal registration form.

The administrator can login through the Administrator's page and can view the total number of registrations for the current day meal (lunch/dinner). The administrator can also verify whether the students have registered for today's meal (lunch/dinner).

2.2 Product Functions

With the help of the system, the students can register for lunch/dinner. The count for lunch/dinner for the next day will depend on the user (student) inputs and will get updated in the database accordingly. The Hostel mess authority can control all the user accounts. The verification for the students who have registered for the meal can be recognized by the Hostel mess authority with the Mess authority's user interface. This will help the Hostel mess authority to decide the amount of meal to be prepared for the next day depending on the user inputs.

2.3 User Characteristics

There are two types of users that interact with the system: users of the registration system i.e. the students and the administrators or mess authority. Each of these two types of users has different use of the system so each of them has their own requirements.

The student users can only use the application to register for the lunch/dinner for the next day, view the menu, check his/her utilization of the services per month, give suggestions or recommendations and also cancel the meal. The students should be able to select the lunch/dinner as per their requirement of meal.

The Hostel mess authority users will also use the application for determining the total count of students for lunch or dinner and prepare food accordingly. The user also performs verification of the student at the time of meal and charge penalty for the students who have not registered/have registered but not taken the meal. The administrator also manages all the student account on a central database management system and facilitates creation and removal of student accounts.

2.4 Constraints

The Internet connection is a constraint for the application. Since the application fetches data from the database over the Internet, it is crucial that there is an Internet connection for the application to function.

The application will be constrained by the capacity of the database. The database will also act as a single point of failure. Failure of database may lead to the loss of the student's data.

3. Specific Requirements

This section contains all of the functional and quality requirements of the system. It gives a detailed description of the system and all its features.

3.1 External interface requirements

This section provides a detailed description of all inputs into and outputs from the system. It also gives a description of the hardware, software and communication interfaces and provides basic prototypes of the user interface.

3.1.1 User Interfaces

The interface provided to the end user is a user login authentication system where, the student with a unique hostel ID can register for the meal (lunch/dinner). The user interface is limited to the controls that can be generated using HTML, CSS, and PHP.





Registration form for new student

Meal Registration Form	localhost says: Your Registration successful with Hostel ID:114	×	
Name: Simran Jaggi hId: 114 date: 2016-04-12 hunch: dianeer: sobrat			



	Administrator's Page	localhost says: X
	hid: 106	The student has registered
Administrator's Login	• Lunch	OK
	* Dinner	
889	Verify	
	Lunch: 6	
LOGIN	Dinner: 5	
Forgot Password ? Wrong Usernama and Darruped	New registration	
wrong osemanie and Password		
	Logout	

Administrator's Login



3.1.2 Hardware Interfaces

Since neither the student nor the mess authority application have any designated hardware, it does not have any direct hardware interfaces.

- 3.1.3 Software Interfaces
 - Operating System: The software has been designed on Windows 7 machine.
 - Web Server: Xampp server
 - Database: MySQL 5.1
 - Page Layout Tools: HTML, CSS 3

The communication between the different parts of the system is important since they depend on each other. There is no specific communication interface present. The user interfaces are sharing a common database.

3.2 Functional Requirements

This section outlines the use cases for each of the active readers separately.

3.2.1 Student use cases

3.2.1.1 Use case: Login **Diagram:**



Brief Description

The Student accesses the registrations for meal using hId and password.

Initial Step-By-Step Description

Before this use case can be initiated, the Student has already accessed the Web Application.

3.2.1.2 Use case: Registration for tomorrow's meal **Diagram:**



Brief Description

The Student after successful login registers for tomorrow's meal (lunch/dinner).

Initial Step-By-Step Description

Before this use case can be initiated, the Student has already authenticated the access to his/her user account.

- 1. The Student selects the check boxes for selecting the lunch / dinner.
- 2. The Student clicks on the Submit button to confirm the registration.

3.2.2 Mess Authorities use cases

3.2.2.1 Use case: Login for Mess administrator **Diagram:**



Brief Description

The Mess authority uses the ID and password for user login.

Initial Step-By-Step Description

Before this use case can be initiated, the Mess authority administrator has already accessed the webpage.

3..2.2.2 Use case: Verification of student registration

Diagram:



Brief Description

The Mess authority verifies the registration of the student when the student comes for meal.

Initial Step-By-Step Description

Before this use case can be initiated, the Mess authority administrator has already accessed his account. On the administrator's page, the admin can verify whether the student has registered or not.

3.2.2.3 Use case: Controlling the student accounts

Diagram:



Brief Description

The Mess authority administrator can create student accounts and the also remove the accounts when required.

Initial Step-By-Step Description

Before this use case can be initiated, the Mess authority administrator needs to access the database. The student account entries can be inserted or deleted from the student table.

3.2.2.4 Use case: Count for the registered meals

Diagram:



Brief Description

The Mess authority administrator gets the total count of the meals to be cooked.

Initial Step-By-Step Description

Before this use case can be initiated, the Mess authority administrator needs to access the account and check the count.