



University
of Windsor

COMP8117 - Advanced Software Engineering Topics

Inception Report for Canteen Automation

Group: 15

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1. Vision and business case

Around the world, the management of canteens is not automated for small scale businesses. Due to the ongoing pandemic, such businesses are adversely affected. So to solve this problem "CANTEEN AUTOMATION" is useful. For this application, there are three types of users Admin (manager), chef and customers. In this application, people(customers) have to place the order online based on the category of items; they have to choose the required quantity and pay the total amount online. A chef will get all orders based on the different category with respect to the chef category. Chef update status of order as per preparation of the order. A manager manages chefs, items, orders and order details. The purpose of our canteen automation is to provide facilities to order online food & online payment. The scope of our project is that it can be provided with food without standing in a queue; which will also help in following the safety measures in this pandemic.

2. Use Case model/Functional Requirements

REQ-1: System should provide a registration page.

Input: User Details

Output: Registration Status

Process: System takes all the user details, does the input validation and adds to the data database hence a new user account is created.

Error Condition: If user details are incomplete or in improper format the System redirects to the same page and asks the user to refill data.

REQ-2: System provides Login Page

Input: Username and password

Output: Validation Status

Process: System takes user name, password and verifies with the database.

Error Condition: If user name or password is incorrect then system gives appropriate message.

REQ-3: System should provide reset password facility.

Input: Username or email id, password and new password and confirm password.

Output: password status

Process: System takes username or email and password . then it will take to change the password page so the system should check whether new password and confirm password are the same or not. If the same then the system should update the database.

Error Condition: If user enters incorrect password or not in required form then should give appropriate message

Form for choose order for customer and manage order for chef forms

REQ-4: System must have categories where the items and orders are selected and managed.

Input: Select category, item and quantity.

Output: Status of the order.

Process: Enter the details of the spent money into the database and give output.

Error Condition: If the internet connection is lost then error occurs.

REQ-5: System must have categories for which the chef can manage order.

Input: Chef Id and chef name.

Output: Order list with status.

Process: Validate the chef and check category for him/her. View list of Order with status.

Error Condition: If the internet connection is lost then error occurs.

Forms for Admin

REQ-6: System should provide Add item and Add chef for admin.

Input: Item details for add item and Chef Details for add chef

Output: add item of chef Status

Process: System takes all the item or chef details, does the input validation and adds to the data database hence new item or chef is created.

Error Condition: If Item or Chef Details are incomplete or improper format the System redirects to the same page and asks Admin to refill data.

REQ-7: System should provide views for item, chef, customer, order and order details.

Input: Select appropriate view navigator.

Output: Details in form of table.

Process: Fetch the details from the database and show into the form of table.

3. Supplementary specification/Non-Functional Requirements

Safety:

- The system shall be accessible from and log changes from computer, tablet or mobile devices.
- The system will display categories at all times to facilitate online order taking.

Security:

- Encryption shall be applied to wireless communication, password used for it must be strong and must be changed every three months.
- At any given point of time, users must be able to log on to the system.
- Customers, chefs and admins shall be able to access their respective functionalities.

Performance criteria:

- The server should be capable to support any number of orders and their status; meaning it should not be lost.
- It should be more User friendly, UI should be kept simple and understandable.
- The server should be capable of supporting any number of active customers, meaning no payment shall fail/lose.
- The time taken to process any order shall be kept as minimum as possible.
- Customers can quickly search any products from the store with an exact matching keyword.
- The System is capable of storing a large amount of data efficiently.
- The website will take less amount of time to reload any webpages.

4. Glossary

Domain terminology:

- Items: Food items to be ordered.
- Category: the types of cuisines available.
- Inventory: The number of items and the types of brands that sellers have in their stock.
- Cart: Customer adds the food items he/she wants to order.
- Payment gateway: It allows the user to complete transactions using his/her credit card.
- Transaction: This action occurs when the user makes a payment.

- Webpages: Users will navigate through it to search for food items via category and to pay for the order.
- Bandwidth: The amount of data that can be transfer from one end to other in a given lapse of time.
- Traffic: The users accessing the website and the number of pages that they visit and interact with.

Data dictionary:

This section describes the database objects for each component of WebLogic Portal. The information in this section is collectively known as the data dictionary.

| Customer Table | | |
|-------------------|-----------|--------|
| Name | Data_Type | Length |
| Customer_Name | character | 50 |
| Customer_Id | Number | 10 |
| Customer_Email_id | character | 20 |
| Address | character | 100 |

| Admin Table | | |
|----------------|-----------|--------|
| Name | Data_Type | Length |
| Admin_Name | character | 50 |
| Admin_Id | Number | 10 |
| Admin_Email_id | character | 20 |
| Address | character | 100 |

| Chef Table | | |
|---------------|-----------|--------|
| Name | Data_Type | Length |
| Chef_Name | character | 50 |
| Chef_Id | Number | 10 |
| Chef_Email_id | character | 20 |
| Address | character | 100 |

5. Risk List and Management Plan

Risks involved:

- Site may crash due to high number of active users
- Due to budget limitation, use of certain requisite assets need to be eliminated.
- It is difficult to foretell from where and when the users will be accessing the site.
- It might not be possible to deliver the project in time if requirements keep changing frequently.
- Online Security Breach: Many hackers can break into the network of a company and access sensitive information.
- Credit Card Scams: Hackers or anybody can use a stolen credit card to make an online transaction.
- The canteen owner may or may not be literate enough to use the website.

Risk Management:

- System maintenance and backup should be performed periodically.
- Surveys can be conducted for the target audience to know them better.
- Buffers in the budget shall be set at the prior keeping in mind the future requirements.
- All the requirements will be clarified at the beginning so as to avoid confusion later.
- Enforce additional layers of network security. Select a safe and secure e-commerce platform that uses object-oriented programming language.
- Use Secure Sockets Layer authentication for protection of data, and SSL certificates are essential for transactions.

6. Prototypes and Proof of Concepts

A proof of concept (POC) demonstrates a small part of a project and is the first step towards turning your idea into a viable and complete product. To test a technology, design and unique concept that's new to the market, we will need answers in yes or no from a stakeholder. If we receive yes, then we further go to the prototype step. A prototype of the web app will be submitted to the client which will include: the pictures of the food items along with details, the menu for traversing in the web app, cart for ordering items and sign up or login page.

7. Iteration Plan

- Elaboration begins: It begins with preparing for environment setup.
- Competitor Analysis - In-depth competitor and market research is conducted in the early stages of the project. It helps us to identify the weaknesses and strengths of the market leaders.
- Feature List - In this stage, features that will be integrated into the web application are selected.
- Payment and Order Take-away - In this stage, payment gateway is selected and order processing method initiates.
- Design - We will provide clients with particular website templates or layouts that will distinguish them from their competitors.
- The E-commerce Platform - We will be offering several e-commerce platform services depending on the customer's business requirements, goals, budget, and other critical factors.
- Final cost estimation and preparing cost annexure and getting it approved.
- Elaboration ends.

8. Phase Plan and Software Development Plan

- Technology and tools need to be decided which will be used in development (E.g. Trello, GIT, PyCharm, Django Framework, Firebase). Also deciding time to be spent on learning and training in new technologies.
- Roles and responsibilities of all people involved need to be decided, e.g. who will be in charge of taking decisions? Who shall be approving those decisions?
- Inspecting the gathered requirements. Put functional units together for workable configurations.
- Use-case Analysis: Reviewing the high level specifications mentioned in use-cases.
- Development: Creating Web Page design and Web Page content.
- Testing: Performing testing of the implemented code by writing test cases.
- Documentation: Report regarding the task accomplished to be created.

9. Development Case

| Disciplines | Methodology incorporated | Artifacts |
|--------------------------|---|--|
| Business model | Agile method | Vision and Business Case |
| Requirement gathering | Setting up meeting with client | 1) Use Case modelling 2) Supplementary specifications – non functional requirements |
| Requirement analysis | Agile method | 1) Glossary 2) Risk list and management plan |
| Designing | Test driven agile methodology | 1) Prototypes and proof of concepts 2) Designing UI elements. |
| Implementation & Testing | 1) Extreme programming. 2) Demo presentation. 3) Integration. 4) Meeting the coding standard | 1) Iteration Plan 2) Software Development plan |

Conclusion:

As soon as the project begins, we will try to keep the communication smooth and encourage interaction for desired results.

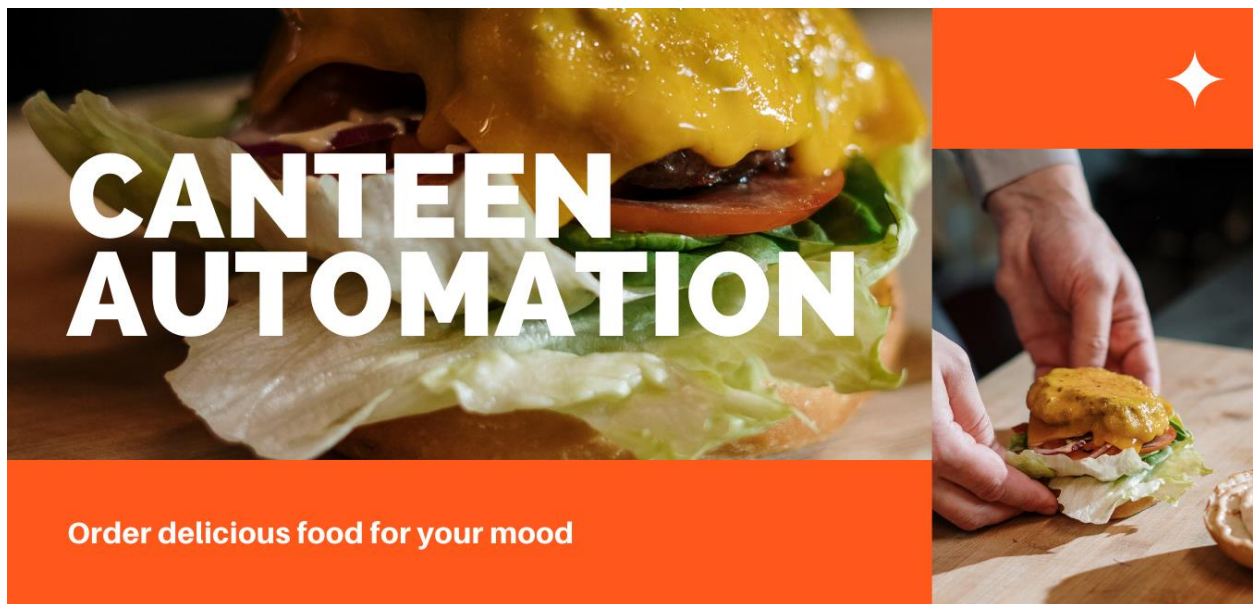
Initial Project Management Setup:

- We will use Pycharm IDE as our software development in Python.
- We will use the Django platform to create our functionalities in python.
- We will set up a firebase connection to store our data in the cloud.
- Github link: <https://github.com/kavisha14/Canteen-Automation/>

Software Project Management System:

- We will use the Trello project management tool for our project to track all the tasks distributed among our team members.
- Link to Trello Software Management tool for Canteen Automation Project: <https://trello.com/b/8jMUEKDc>.

Prototype:



Welcome Page Portal for customer

WHAT WE OFFER

Curious? Here are our most popular menu items.

Gourmet Burgers



Chicken Wings



Thirst Quenchers



Home Page Portal For Customer



ADMIN

Canteen Automation



- ADD FOOD
- ADD COMBO
- REMOVE FOOD
- TAKE ORDER
- PARTY ORDER
- REPORT
- FEEDBACK
- CHANGE PASSWORD
- LOGOUT



Admin Portal