
# American International University-Bangladesh (AIUB)

## Faculty of Science and Technology (FST)
## Department of Computer Science (CS)

## SDPM Group Project, Fall 2022

## Project Title: Happy Panda
## Section: D

**Submitted by**


| Name | ID |
|---|---|
| **Abdullah Yousuf Noman** | 20-42130-1 |
| **Ananna Rashid Kumkum** | 20-43589-1 |

**1.0 INTRODUCTION:** Online food delivery system is a food ordering system. Where a customer can order their food by using this system. It will be a desktop application/website. Within this application all items in order are displayed, along with their corresponding option and delivery details. This allow the restaurant employees to quickly go through their orders they are placed and produced their items.

No matter how big or small a company is, managing the information for a category, food item, order, payment, and confirmed order is a difficulty. We create unique personnel management solutions that are tailored to your managerial demands because every Online Food Ordering System has various Food Item needs. This is intended to aid with strategic planning and will help you make sure that your company has the appropriate degree of knowledge and specifics for your long-term objectives. Additionally, our systems have remote access features that will enable you to manage your staff whenever you need to, making them ideal for busy executives who are often on the road. In the end, these solutions will enable you to manage resources more effectively.

**2.0 PROJECT TITLE:** Online Food Delivery Management System.

## 3.0 Objective:

### 3.1 Overall Objective

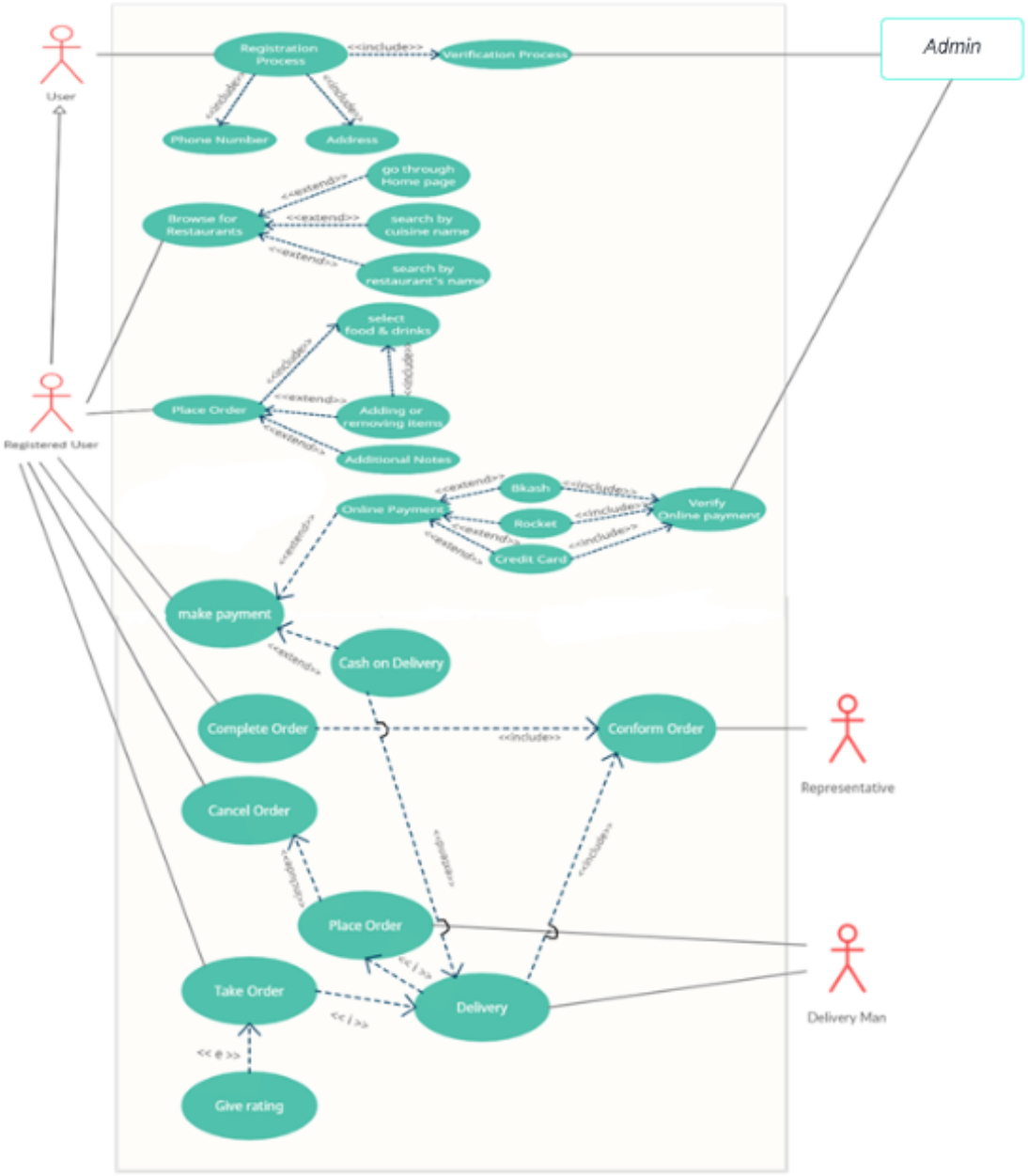
The purpose of this project is to design and create software that will give the restaurant employees to quickly go through the order placed by the customers. The customers can choose the food item according to their desired.

### 3.2 Specific Goals

1. This software system to be built will be a simple user interface design that will be human centric.
2. It will reduce the unnecessary hassle of the customers such as taking ordering delays, manual processing delays, payment gateway issues.
3. It will enhance the efficiency, reduce the service time and minimize the resource utilization of the restaurant.
4. Moreover this project will increase the profit margin.

**4.0 JUSTIFICATION:** The major goal of the Online Food Delivery System is to maintain the information of Food Item, Category, Customer, Order, and Confirm Order. It keeps track of all the information related to Food Item, Payment, Confirm Order, and Food Item. Because the project is entirely constructed at the administrative level, only the administrator has access. The project's goal is to create an application software that will decrease the amount of human effort required to manage the Food Item, Category, Payment, and Customer. It keeps track of all the information regarding the Customer, Order, and Confirm Order.

## 5.0 SYSTEM OVERVIEW:



**6.0 STAKEHOLDERS ANALYSIS:** Stakeholders are those who have a stake or interest in a project. Stakeholders can be individuals, group or organization who are involved in project, can influence it and whose interests maybe affected by the success or the failure of the project.

Stakeholders for our project are given below:

Primary Stakeholders:
i. Customers
ii. Delivery Partners
iii. Development Team
iv. Management team

Secondary Stakeholders:
i. Restaurant Owners
ii. Board of Director
iii. Investor
Positive Stakeholders:
i. Developers
ii. Sponsor
iii. Media

Negative Stakeholders:
i. Some people from board of directors
ii. Some people from Investors

Internal to project :
I. PM
II. Developer
III. Designer

External stake holders:
I. Computer
II. Supplier
III. Government

## 7.0 Feasibility study:

From a commercial standpoint, this idea is technically feasible. An individual project's viability is assessed

- **Technical Feasibility:** The necessary number of software developers are available to build the software. The servers are also capable of providing the service without constant supervision of any onsite software engineer. It will notify the software engineers through cloud monitoring tools if any error occurs. Moreover, today there are excellent Internet service providers that offer over 99% service up-time that will consistently provide stable, quality service for the customers. We also have the required software tools and the hardware to develop the whole software system.

**HW Requirement** (Min)-

• Memory: 2 GB

• GPU: INTEL HD Graphics 520

• CPU: Intel Dual core

**SW Requirement**-

• OS: Windows 7/10/11

• Database software: XAMPP

• Language: PHP/HTML/CSS/JavaScript

It can be concluded that the project is feasible in terms of technical assessment.

- **Financial Feasibility:** This project will reduce the hassle of manual processing and reduce the delay also. So, there are a huge number of people who are willing to pay that extra service charge to eradicate those hassles. That increases the chance of earning consistent profit through this business investment.

| | |
|---|---|
| Development cost | BDT 64000 |
| Tester | BDT 60000 |
| Project Manager | BDT 112000 |
| Project Co-Ordinator | BDT 80000 |
| Consultant | BDT 160000 |

| | |
|---|---|
| Office space | BDT 80000 |
| Utilities (water, internet, electricity, Miscellaneous) | BDT 16000 |
| 10% overhead cost for safety | BDT 114800 |

Total Cost BDT 686800

Proposed budget to the client for the project is BDT 900000

Total cost of the project with profit included: BDT 850000

As the project costs are well within the reach to achieve a significant amount of profit from this project so it can be stated that the project is financially feasible.

## 8.0 System Components:

The system components are identified below using the Work Breakdown Structure (WBS)

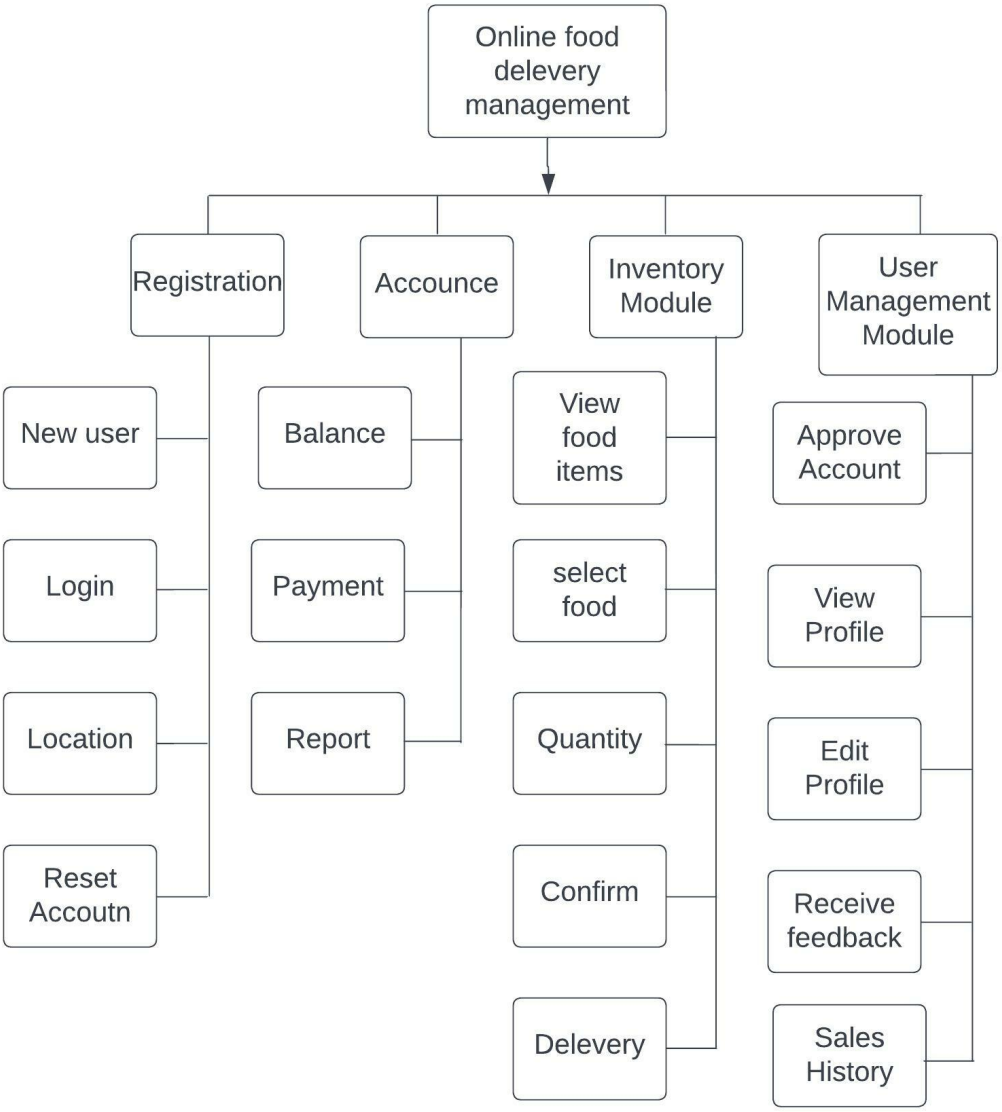
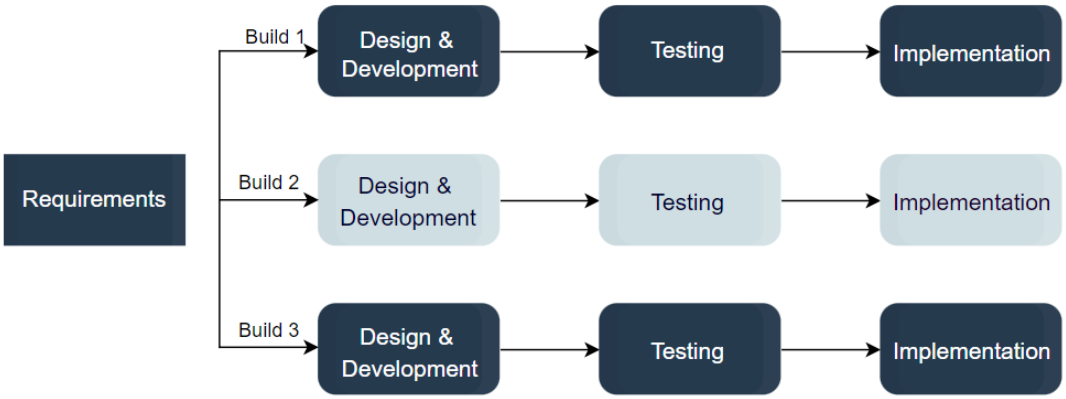



Figure – System components

## 9.0 Process Model:

For the creation of this project, the iterative development model was chosen. For a number of reasons, this was done. A system is developed using the iterative development methodology by building small samples of each feature. This facilitates fast completing the initial scope and releasing it for comments. You begin by implementing a limited number of the software requirements in the iterative model. Then, until the system is finished, these are improved repeatedly in the versions that are evolving. The first step in this process model is to implement and assess a portion of the program in order to identify additional requirements.




Advantages of iterative development process model

1. See the results at the early stages of development
2. Get early feedback from the customers
3. Easy to identify and fix any functional or design flaws
4. Manage risk and change requirements
5. Easier to handle large complex projects
6. Easily break down large software into small modules that are easier to build and manage

## 10.0 Efforts Estimation:

COCOMO (Constructive Cost Model) is used to estimate the effort for our project

Cost Estimation

If we consider that our project is organic:

Then,
Coefficient<Effort factor>= 2•4

Let's
consider SLOC (Source line of coding) = 40000

For organic project the value of P (Project complexity) = 1.05

The value of T (SLOC-dependent coefficient) = 0.38

Effort = PM = Coefficient *(SLOC/1000) ^P
PM (Persons-months needed for project) = 2.4 (40000/1000) ^1.05= 115.44

DM = (Duration time in months for project)
= 2.5x (115.44) ^0.38
= 15.19

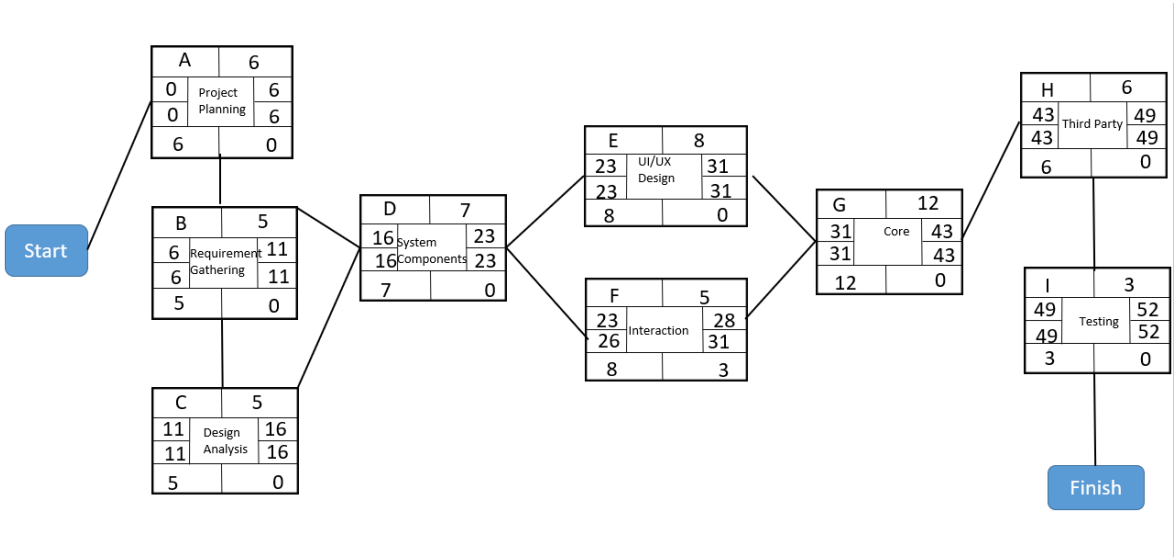
Required Number of people = PM/DM = 115.44/15.19= 7.6 ~ 8

## 11.0 Network Activity Diagram:

The activity diagram identifying different activities for scheduling the project is given below.

| Label | Activity Name | Precedence | Duration |
|---|---|---|---|
| A | Project Planning | | 6 |
| B | Requirements | A | 5 |
| C | Design Analysis | B | 5 |
| D | System Component | B,C | 7 |
| E | UI/UX Design | D | 8 |
| F | Interaction | D | 5 |

| | | | |
|---|---|---|---|
| G | Core | E,F | 12 |
| H | Third Party | G | 6 |
| I | Tasting | H | 3 |




## 12.0 <u>Risk Analysis:</u>

The possible risk for the proposed project is given in the following risk table. The probability is given between 0% to 100% whereas 100 percent is the highest chance of occurrence. The impact value is ranged between 0 to 10 where the value 10 indicates that it would be catastrophic and 0 indicating negligible impact on the project.

| Risk id | Probability | Cost | Risk exposer | Risk minimiser | Rank |
|---|---|---|---|---|---|
| People risk | 40% | 12,000 | 48,00 | Hire a business analysis to help customer representative | 4 |
| Poor managemnt of system | 15% | 20000 | 3000 | Hire some expert | 3 |
| Poor Productivity | 37% | 30000 | 11100 | Set achievable timeframes and a sustainable pace during project estimations to avoid burn-out of staff. | 4 |
| Changes in requirements | 60% | 35000 | 21000 | Check if the changed Requirements are feasible, try to make the requirement change before starting the development phase. Deliver the product in short increments time-boxes so that the user gets less time to finalize the requirements and change their mind. | 5 |
| Unrealistic schedules and budgets | 28% | 45000 | 12600 | Using historical data and using multiple models for estimation | 7 |
| System failure | 10% | 50000 | 5000 | Make sure the units or components pass the required test cases before integrating the system | 9 |
| Technology will not meet expectations | 5% | 15000 | 750 | Check whether the technologies are acquirable | 2 |

## 13.0 Budget:

Proposed project budget with profit included: BDT 850000

| | | |
|---|---|---|
| Development cost | 8*500*16 = | BDT 64000 |
| Tester | 2*5000*6 = | BDT 60000 |
| Project Manager | 1*7000*16 = | BDT 112000 |
| Project Co-Ordinator | 1*5000*16 = | BDT 80000 |
| Consultant | 1*1000*16 = | BDT 16000 |
| Office space | 16*5000 = | BDT 80000 |
| Utilities (water, internet, electricity, Miscellaneous) | | BDT 16000 |
| 10% overhead cost for safety | | BDT 114800 |
| Total Cost | | BDT 686800 |

## 14.0 Conclusion

A new approach to food distribution will be made possible by this project. Online systems will be used to issue food orders and manage food delivery. This move does not, however, prevent walk-in consumers from physically purchasing meals from the restaurants. They also have access to that. This method cuts down on the amount of time needed to stand in a long line and eat.
Executive reports can be submitted online and viewed by top management online using the "Happy Panda System" software suite. The many reports had to be prepared using a time-consuming manual process, but this method will address those problems and drastically cut down on the amount of time needed. The design and development of this package will enable it to better meet the needs of the user and provide for their needs. The actual issue has been thoroughly observed, fixed, and planned for accordingly.
The additional advantage of this system is that it provides options for future development so that future users' needs may also be met and updated with time.