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**Birzeit University**

**Computer Science Department**

**Software Engineering**

**COMP433**

**Phase 1: Project Planning and Use Cases**

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# Abstract

 Efficient requirement analysis is the backbone of any successful software engineering project. As this document examines the proposed system in terms of scenario-based approach to elicit the requirements, it serves as contractual basis between Mall’s investors and development team.

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# Introduction

## Description of the System

Fast-Mall shopping mobile/web application, as the name suggests, will serve as a web and mobile application for big malls which uses GPS to determine your location and bring up a list of nearby malls, the application will offer an alphabetical list of stores in a particular mall, or give you the option to search for a specific store.

The functionally of this application is to enable shoppers to check out the latest deals, news and events available at their favorite mall, connect with your mall on Facebook, Twitter & Instagram, share the best deals, news and events with your friends across your favorite social networks. Another important feature of this application that it will submit a currency convertor and a foreign exchange, it can also let the shoppers to always remember where they parked with photo, GPS or text parking reminders and enable them to quickly look up mall hours, directions and contact information.

Seller within a mall can be utilized form this application by broadcasting his store’s information and location, ensure customer traffic, and post new sales or deals going on in his store.

The proposed system will operate as web/mobile application, it assumes that the developer is using Eclipse as the development environment and has already prepared the necessary libraries for Android application development, and also assumes that shoppers are smart phones holders running on Android system.

## Objectives of the Project

1. Using the Fast-Mall Shopping application, the Shopper should be able to:
* Enhance time wasted in looking for a mall directory.
* View sales, news, and events.
* Access detailed store information.
* Create personalized list of the favorite stores.
1. Using the Fast-Mall Shopping application, the Seller should be able to:
* Maximize revenue and keep customers informed at all times.
* Post new sales or deals going on in store.
* Interactive maps to guide customers to your store
	1. System Actors
1. Shopper: shopper’s role in Fast-Mall Shopping application is choose a required function form the application just like Finding location, Parking reminder, Events.
2. Seller: seller must interact with the system by updating the required information about his sales, deals and location.
3. Employee: employee’s role is to service the shoppers whenever a system calls this employee to satisfy shopper needs and wants.

## Overview

 The rest of this document is structured as follows. The proposed system is examined in depth. In the Usage Scenario part, each team member did a third of the work, stemming from the fact that each member was in charge of creating one of the three Use Cases. The other part of this document was mutually agreed upon and equally co-written by all team members over several meetings. At the last section a use case model was drawn, including the actors, the use cases, the relation between the use cases and the actors and the relation between the use cases.

## Usage Scenarios

#### Driving to the nearest Mall.

(By team member: Yousef Madia)

**Normal**

 Samer, driving down main street in his car, decides to go for shopping. Samer activates the “Mall Map” function form his Fast-Mall Shopping system mobile. Samer turns on his GPS system, requests for nearest shopping mall and chooses a specific store (i.e., video games store).The systems checks the street conditions, and she screen displays **successfully** a list of nearby malls, brings up an alphabetical list of stores in a particular mall and a navigate map with the shortest path to receive each mall. Samer follows the driving directions and reaches the nearest shopping mall.

**Alternative**

 Samer, driving down main street in his car, decides to go for shopping. Samer activates the “Mall Map” function form his Fast-Mall Shopping system mobile. Samer turns on his GPS system, requests for nearest shopping mall and chooses a specific store (i.e., video games store). The systems checks the street conditions and the area appears to be relatively busy due to cars accident , it then **modifies** the nearest mall lists, offers an alphabetical list of stores in a particular mall and a navigate map with the shortest path to receive each mall. Samer follows the driving directions and reaches the nearest shopping mall.

**Exception**

 Samer, driving down main street in his car, decides to go for shopping. Samer activates the “Mall Map” function form his Fast-Mall Shopping system mobile. Samer is not able to turn on his GPS system (due to internet defect), requests for nearest shopping mall and chooses a specific store (i.e., video games store). The systems **denies** Samer’s request because it is not able to update information about the area’s map neither the street conditions. Samer is now unable to reach the nearest shopping mall.

#### Waiting queue handling.

(By team member: shadi ghabin)

Context : Samer finished shopping and wants to check out.

**Normal**

\*Samer is a normal shopper .

When Samer wants to check out, he is asked if he wants to go to a regular checkout or to a fast checkout, in case he is buying less than 10 products. Samer selects the proper one regarding the content of his cart.If he selects the fast checkout, he will go through the waiting queue faster than if he selects the regular one.

The screen displays the number of customers that will pay before him. This number will decrease Every time a customer is going to a checkout. This number can also be incremented if there is a handicapped person or a pregnant woman coming to pay as they are priority people.

When it is Samer’s turn, his device displays the number (identifier) of the checkout he needs to go

to pay. Finally the system displays a Goodbye message and Samer can close the application.

**Alternative**

\*Samer is a handicapped shopper.

As an handicapped person, Samer is a priority person. As soon as a checkout is available, he is invited to pay. The same process is applied to pregnant women or families with kids. This parameter is set in the options of the mobile application.

**Exception**

When Samer reaches Ahmad (the casher), Ahmad checks the products .if there is something corrupted or expired , he asked one of the employee to replace it with a good one and Samer wait until the employee return back , Ahmad checks the next shopper products .Until the employee returns back ,Samer takes priority.

#### Use Case Specification

 3.1 Use Case one

 (By team member: Yousef Madia)

#### Use Case Name: Guiding directions

Actors:

* Shopper

Description: This use case depicts a person using Fast-Mall shopping application for searching for nearby malls.

Preconditions:

* Turning on GPS system.
* Pick the desired option.
* Enter the desired store type.

Post-conditions:

* Shopper reaches the nearest mall.

Main Flow:

* 1. Shopper chooses “Map Mall” function.
	2. Shopper turns on his GPS system.
	3. Shopper chooses the type of stores.
	4. System checks the street condition.
	5. System provides list of nearby malls.
	6. System offers an alphabetical list of stores in a particular mall.
	7. System provides a navigate map to receive each mall.
	8. Shopper follows the driving direction to receive mall.

Alternative Flow:

* 1. Shopper chooses “Map Mall” function.
	2. Shopper turns on his GPS system.
	3. Shopper chooses the type of stores.
	4. System checks the street condition and the area appears to be relatively busy due to cars accident.
	5. System updates a list of nearby malls with the new conditions.
	6. System offers an alphabetical list of stores in a particular mall.
	7. System provides a navigate map to receive each mall.
	8. Shopper follows the driving direction to receive mall.

Exceptions:

* 1. Shopper chooses “Map Mall” function.
	2. Shopper fails to turn on his GPS system.
	3. System denies the shopper request.
	4. Shopper fails to receive mall.

3.2 Use Case two

 (By team member: shadi ghabin)

#### Use Case Name: Waiting queue handling

Actors:

* Shopper , Seller ”the casher”, employee

Description: This use case depicts a person using Fast-Mall shopping application to check out after he shopping.

Preconditions:

* Buy the desired products.
* Selects the proper one regarding the content of his cart.
* Select the checkout faster or normal .

Post-conditions:

* Shopper checked out successfully .

Main Flow:

1. Shopper asks to checkout.
2. Shopper choose type of checkout(fast or normal).
3. System checks on the status of the shopper.
4. Shopper get a waiting number corresponding to the number of people who will check-out before him.
5. Shopper’s waiting number decrease when another customer is going to pay.
6. Shopper can go to checkout when his waiting number become zero .
7. Casher checks the products .
8. Shopper checked out successfully.

Alternative Flow:

1. Shopper asks to checkout.
2. Shopper choose type of checkout(fast or normal).
3. System checks on the status of the shopper.
4. System determine if shopper is a handicapped person a pregnant woman, shopper is a priority person.
5. Shopper will be the next one to check-out.
6. Shopper turn to checkout .
7. Casher checks the products .
8. Shopper checked out successfully.

Exceptions:

1. Casher checks the products .
2. There is a corrupted or expired product.
3. Casher replace the product.
4. Shopper checked out successfully.

#### Some useful use cases:

#### Costuming favorite stores

#### Creating events

#### Parking reminder

#### Mall map

#### Updating Maps

#### Creating product lists

#### Road condtion

#### Mall open hours and information

#### Foreign currency exchange

#### Guiding directions (covered above)

#### Waiting queue handling(covered above)

1. Use Case Diagram

