

SHOPMATE

Requirements Specification

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Version History

Version	Date	Description
0.1	2015-11-22	First release
0.2	2015-12-7	Release 2

Introduction

This document describes the functional, data, quality and design requirements for an iOS and Android based application that communicates with a server and Smart-Watches. The product aims to assist the user in navigating the mall and to the users parked car, get an overview of the layout of the mall, keep track of what errands the user has in the mall and display offers from stores in the mall.

Business Goals

The purpose of the product is to enhance the quality of a customer visit by offering some features that facilitate the stay. With the provided functionality of the product, the customer satisfaction will increase, as well as the number of visiting customers and the total number of sales by the stores. This will enable the mall owner to charge the stores higher rents and a higher revenue for the stores in the mall.

Terminology

The app is referring to the ordered application for a shopping mall, i.e. the ordered product.

The user is referring to the person using the application on their device.

Device is referring to the unit the user is running the app on, e.g. mobile phone and smart-watch.

Offers are store-products or services that are being sold at a lower price in the stores at the mall. Offers are displayed on the user's screen of their devices.

The server/database is where all data about stores, offers, store-products, maps and so on are stored.

Store refers to companies located in the mall.

Store-Product refers to items/products being sold in the stores, not the product that is being developed.

Location refers to the location of a user or a store in the shopping mall.

Shopping list refers to a list with items or store-products that the user has added to a list and intends to buy while at the mall.

Context Diagram

ShopMate has an excessive inner domain, communicating with various other systems. In order to fulfill some of the fundamental requirements, this is necessary. Figur 1 below represents the domain level of ShopMate, displaying the systems needed to provide the desired functionality.

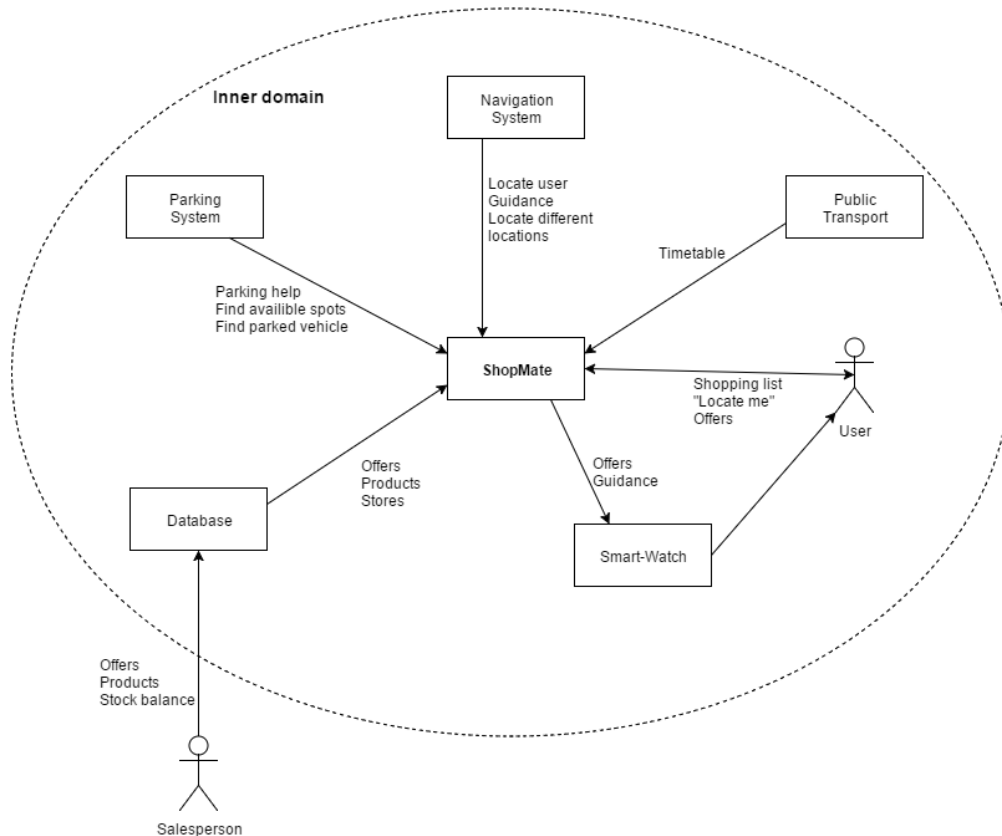


Figure 1: A context diagram describing the domain level of ShopMate.

Requirement Specification

Goal Level

The goal level requirements comprises of goals for both the customers and the owners of the shopping mall.

Business — Customer satisfaction

The product shall increase the shopping malls customer satisfaction.

Business — Mall revenue

The product shall increase the malls revenue by 4 %.

Business — More customers

The product shall help increase the number of visiting customers to the mall by 8 %.

Business — Increased sales

The product shall help increase the number of sales the stores have by 3 %.

Business — Impulse sales

The product shall increase the number of impulse buys of store-products by 10 %.

Domain Level

The domain level concerns the surroundings of the system and how the system interacts with it.

Data — Attributes

The product shall store data according to figure 2 and figure 3.

Data — Product

The product shall have data provided by the stores on stock balance, prices and offers on store-products provided by the stores.

Data — Registration

The product shall support registration of store offers from different stores as shown in figure 4 and be able to show products like figure 5.

Navigation — Find location

The product shall be able to assist the user to get from its current location to a specified location by the user in the mall. e.g. a store, toilet, elevator and so on.

Misc — No connection

The product shall work without being connected to the internet, to limit data traffic. Without internet connection the product will help the user navigate in the

mall and navigate to their parked car.

Navigation — Public information

The product shall provide public information, such as location of handicap toilets, elevators, ATM machines, etc. With this information the user shall be able to navigate to the correct position in the mall.

Parking

Parking — Register parked car

The user shall be able to register the location of the parked vehicle.

Parking — Guide to parked car

The product shall be able to guide the user to their parked vehicle.

Product Level

Smart-Watch

Smart-watch — General

The product shall support connecting a smart-watch to it. To help the user navigate and get offers from stores without having to interact with their smartphone.

Smart-watch — Navigation

The product shall support navigation on the Smart-Watch screen.

Smart-watch — Guide to parked car

The product shall support helping the user find where they parked their car.

Smart-watch — Offers

The product shall support the functionality to store offers in a smart-watch.

Smart-watch — Shopping list

The product shall be able to display the users shopping-list on the Smart-Watch.

Smart-watch — Not required

The product shall work without a Smart-Watch. Not all customers have smart-watches and it can therefore not be a requirement to use the product with one.

Additional Functionality

Transportation — Public transport

The product shall support information about departures using public transportation.

Misc — Create shopping list

The user shall be able to create a shopping list. The store-products shall be searched for by type and display what store has that type of store-product so the user can select what store and store-product he or she wants to add to the shopping list.

Misc — Rating system

The product shall have a rating system for stores in the mall that users can use to rate stores.

Misc — Platforms

The product shall be implemented for Android devices and iOS devices.

Data — Database contents

The database shall contain the store-products sold in the shopping mall, and provide information which store that sells them.

Navigation

Navigation — Find user in mall

The product shall have a function for locating the user in the shopping mall. This function will help the user to know what floor he or she is on, and where on that floor the user is currently located.

Navigation — Find location 2

The product shall have a function for directing the user to a specific location in the mall.

Offers

Offer — Location offers

The product shall display a new offer if the user is within 10 meters to a store. Offers shall be relevant to the users location in the mall.

Offer — Display specific offers

The product shall display specific offers designed by the stores if the user enters

their stores.

Offer — Limit of displaying offers

The product may show a new offer every 120 seconds.

Parking

Parking — Register parked car 2

The product shall provide a function to register where the users vehicle is parked.

Parking — Guide to parked car 2

The product shall provide a function to locate the users parked vehicle.

Parking — Find free parking place

The product shall have the function for displaying what parking places are free and assist the user to locate the free parking places.

Quality Requirements

Navigation — Precision of positioning

The product positioning shall have a resolution no greater than 5 m.

Misc — Server up-time

The server shall have at least 99 % up-time over a year of runtime.

Misc — Accuracy locate car

The product shall locate the users parked car with an accuracy of at least 5m. When the user uses the function "navigate to parked car".

Misc — Locate user speed

The product shall locate the users location with in 3 seconds after staring the application 90 % of the time.

Design Level

GUI — Navigation screen

The product shall provide the screen shown in figure 6 to help the user navigate.

Data — General store information

The product shall have a database to store general information about the stores.

GUI — Understandable interface

The product shall be easy to understand, a novice user shall be able to navigate the interface after the first time the product has been used.

Offer — Non-annoying commercials

The product shall not be annoying to use or clutter the screen with offers. In other words offers that are displayed on the screen shall not cover the whole screen they could look like displayed in figure 7.

Misc — Fast server connection

The product shall connect to the server with in 5 seconds after starting the product 95 % of the time, so the server and the user device is updated with the latest offers and potential new stores. This shall not hinder the application from working. This shall be done in the background.

Smart-Watch — Screen appearance

The Smart-Watch screen appearance shall look as in figure 8.

Offers

GUI — Non covering offers

The product shall display offers from stores without covering the user device screen.

Appendix A

Appendix A holds the figures referred to in the requirements.

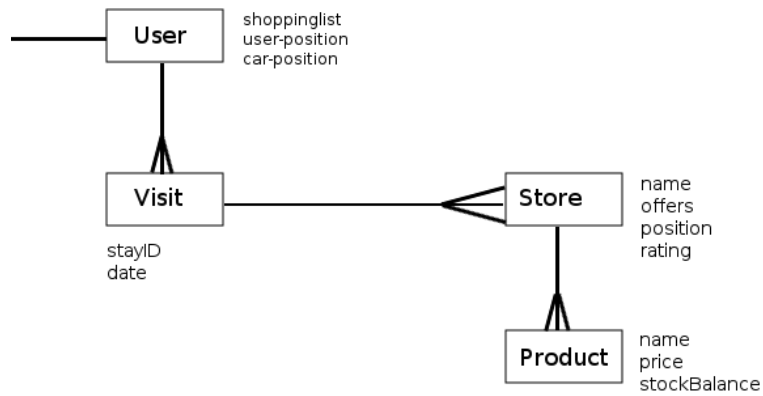


Figure 2: Refers to the requirement "Data — Attributes".



Figure 3: Refers to the requirement "Data — Attributes."

Store

Name:

H&M

Rating:

3.9

Level:

3

Coordinate:

57.8166, 11.8212

Offers

7/8

Product, socks.

40%

8/8

Product, dresses

15%

12/9

Product, suits

20%

Figure 4: Refers to the requirement "Data — Registration."



Product	
Name:	Socks
Brand:	Nike
Price:	99:-
In stock:	133

Figure 5: Refers to the requirement "Data — Registration."



Figure 6: Refers to the requirement "GUI — Navigation screen".

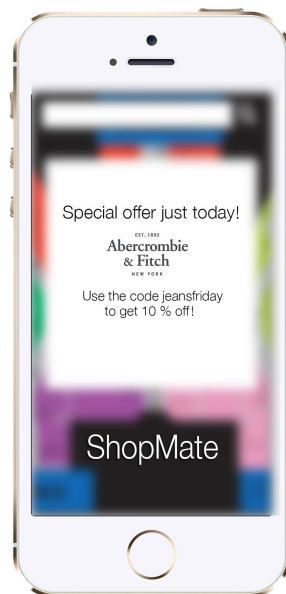


Figure 7: Refers to the requirement "Offer — Non-annoying commercials".



Figure 8: Refers to the requirement "Smart-Watch — Screen appearance".