Final Report

“Design Project BIT Module 2”

16-12-2016

Nick Richter S1818538

Silviu Stirbu S1820257

Hidde Zijlstra S1806343

**Preface**

In the following (brief-)report we will present our design project, the choices that we have made during the process of creating the required diagrams, and some further feedback about the process in total. The two appendices at the end of this report will contain an overview of the task division and a summary of the interview conducted with our assigned SA, Twan Coenraad.

Pleasant reading!

**Contents**

Activity diagram - Leaving the car park

Activity diagram - Payment

Use case diagrams

Class diagram

State machine diagram - Ticket

Sequence diagram - Payment

**Messages from the group**

“Can you please give us a 10?” – Nick

**Activity diagram - Leaving the car park**

Self-explanatory

**Activity diagram - Payment**

Self-explanatory

**Use case diagrams**

Self-explanatory

**Class diagram**

The class diagram has a class “car park” which is owned by the “council”. The “security company” is hired by the “council”. The car park has “control pillars”, “pay stations”, “employees” and an “entry scanner”. The “entry control pillars” make new “ordinary tickets”. The “pay station” uses the “ordinary ticket” to get the entry time and calculates the price from data stored in the car park. It also stores the tickets in an arraylist, this is done so the council can get all the data about the tickets that have been paid. We added methods the class uses, we primarily have get-methods.

**State machine diagram - Ticket**

We choose to model the “normal” ticket. This is because this ticket can have many states.

**Sequence diagram**

We modeled the payment business process. The customer will first insert the ticket. The pay station will get the entry time from the ticket. It will ask the system for the time, rate and tariff. It will then calculate the price and display it. This is in a loop, for every coin inserted it will calculate again and display the new remaining amount. After this is done it will (optionally) return change. It will then add the payment info to the ticket and eject it.

**Appendix I**

­­During the project the division of tasks has been flexible. Every member of our team started off with a clear task, but in almost all of our cases we realized that the help of others was desirable. We therefore most of the times resulted into doing a lot of the tasks together. Never the less we created an excel sheet to show our progress and who was working on which tasks. Because we believe you can judge us best with all available information provided, we added it below.

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|  |  |  |
| --- | --- | --- |
| **Things to be done** | **Done?** | **Who did/does it?** |
| Interview | x | Silviu/Hidde |
| Interview report | x | Everyone |
| Brief report | x | Hidde |
| Activity diagram 1 | x | Hidde |
| Activity diagram 2 | x | Nick |
| Glossary | x | Everyone |
| Requirements list | x | Everyone |
| Use case 1 | x | Everyone |
| Use case 2 | x | Everyone |
| Use case 3 | x | Everyone |
| Use case 4 | x | Everyone |
| Use case management | x | Everyone |
| Use case descriptions | x | Nick |
| Extended use case descriptions (2) | x | Nick |
| Class diagram | x | Everyone |
| Sequence diagram 1 | x | Silviu |
| State machine diagram 1 | x | Nick/Hidde |

**Appendix II**

Interview with: Twan Coenraad

Date of interview: 25-11-16

Time of interview: 13:00 – 13:10

People who did the interview: Hidde Zijlstra and Silviu Stirbu

**Project main goal**

The main goal of the project is to gather more data about parking. Have insight when parking spots are overcrowded or underused. This is used to know where to build more parking spots and to develop plans to expand places. The information can be used to fluctuate prices and in that way redirect people to cheaper, underutilised, parking spots.

**Key features**

The key features the system should have are:

1. Showing the sales figures about every parking house.

2. Calculating what the prices should be for evenly distributed parking.

3. Showing space occupation.

4. Recording times when cars enter/leave.

5. Recording peak hours.

**Privileges**

People in the city council can access the data at any given moment in time.

During the holidays e.g. they can see the day afterwards if the pilot worked.

The privileges should be as follows:

Parking personnel should still be able to manually control parking barriers, they should be able to help customers with small ticket issues. They shouldn’t have too much access, sometimes it is better to just let somebody out instead of letting them pay.

**Privacy**

Data can be stored for 6 months on an individual basis. Then it has to be anonymised. The big data sheets should be anonymised from the moment they’re made. The data about season tickets holders to notify them when their contract is about to expired can also only be stored for 6 months and should afterwards be discarded.