|  |
| --- |
| **Vibeflix**  **Group 4 - Vibe** |

**[Name(s) of student(s), student number, photographs]**

**Supervisor: [Name of supervisor(s)]**

**[Name and logo of educational institution]**

**[Logo of companies included]**

**[Number of characters]**

**[Study program]**

**[Semester]**

**[Date]**

**Table of content**

Abstract iii

1   Introduction. 1

2   Analysis. 2

2.1    Requirements. 2

2.2    Functional Requirements. 2

2.3    Non-Functional Requirements. 3

3   Design. 4

4   Implementation. 5

5   Test 6

5.1    Test Specifications. 6

6   Results and Discussion. 7

7   Conclusions. 8

8   Project future. 9

9   Sources of information. 10

10     Appendices. 1

**List of figures and tables**

Optional

# Abstract

This semester the topic was chosen by the group members, based on the Problem Based Learning guidelines and the assistance of the supervisors to approve the said topic. For this theme, the problem of the availability of movie rental systems was presented and finding a way to deal with the customer’s requirements was a need.

This problem was solved by creating a system called “VibeFlix” which as intended, is a movie rental service with the possibility of maintenance and account creation and verification. The maintenance side allows the administrator to add, remove and edit movies present in the system. However, not only does the service update the movie listing in real-time but the database where the information is stored is also updated. In contrast, the user side allows for the creation of an account and logging in, afterwards a selection of movies is presented in the way of the trending movies and top-rated movies by the system users. The users can rent these movies and see the rentals in the profile section, allowing them to keep track of them in an easier manner.

“VibeFlix” takes into account all of the requirements identified by the group and implements them functionally. Therefore, it can be said that the product meets the initial and final expectations as well as satisfying the customer’s needs.

# Introduction

Currently, the world is moving at a faster pace that requires society to adapt to a different lifestyle. Therefore, personal time is limited, requiring people to reduce the time spent on trivial matters, such as: grabbing the TV remote and looking for that one channel that has the desired movie or researching if that one movie fits the current mood.

Movie rentals were a popular business in the past. With the invention of VHS, companies like Blockbuster and RedBox had a big impact on the entertainment industry. This industry brought a rental system for movies, providing the opportunity to watch a variety of movies for a lower price during the rental period. Nowadays, with the world becoming digitalized, streaming services have replaced the need for physical movie rentals. Movies can now be watched from any place at any time with an ever-growing selection.

The next step in improving the way movies or shows are watched lies in the current technologies available to humankind, for example, the internet. The internet is one of the most innovative technologies of the XX century. Being introduced in the year 1983 as a way for systems to communicate with each other, it has evolved into much more than that. It now offers a range of possibilities, from the use of social media to video calls with people from around the world. (A Brief History of the Internet, n.d.)

Although the internet is fascinating, a particular focus may be brought upon the possibility of streaming content. There are services available such as Netflix or HBO, where movies and TV shows are available at any time and anywhere if there is an internet connection. Most of them showcase the top 100 movies trending at a particular time based on views and ratings.

Here is where the future for movies and entertainment lies, the possibility of watching the movie from your phone, selecting a specific movie, and finally watching it wherever it is convenient brings entertainment to a whole new level. However, no system is perfect, for instance, Netflix does not have a scored based review system for a movie to determine its quality, nor does it offer the possibility of renting a movie.

This project's topic has been selected by the group members and approved by the supervisors. The scene being the current market for movie rentals, as of today there is not a vast amount of options for online movie rentals, which makes this market inaccessible for customers of this sector. Once again, an approach to deal with this issue had to be found through Problem Based Learning to determine the needs of the customers.

For the purpose of this project, the group was able to determine two relevant customers. The administrator, who would like to manage the system, make any necessary updates and be able to log in with the appropriate credentials, and the users, which are the customers who would like to be able to sign up, log in, rent movies, cancel their rentals, and view their profiles. The only important limitations for this project were the number of available movies, which was determined to be 100.

The challenges presented this semester are working with the database as a way to store data, design patterns, and connections between the client and the server. Furthermore, new methodologies and frameworks such as SCRUM and Unified Process are presented, and learning to work with them as well as doing it in an efficient manner is an important obstacle.

As previously stated, the methodology for this semester is Unified Process (UP), which consists of disciplines acting as business modelling, requirements, analysis and design, implementation, testing and deployment. Furthermore, it is divided into different phases, such as inception, elaboration, construction, and transition. This methodology is accompanied by the SCRUM framework, where team roles are set for the project and the work is divided in an organized, productive, and systematic manner.

# Analysis

(connect background description to analysis)

The purpose of the analysis section is to outline an understanding of the problem domain and specifically WHAT the stakeholders want. Here, you elaborate on your background description.

You identify objects in the problem domain that will be involved in the solution and how these objects cooperate. The result of this analysis is a Domain Model (Larman 2004, chap.9) and other relevant diagrams.

Use the UML standard for all diagrams where relevant.

Note: Remember that all implementation dependent objects are not part of the domain model only conceptual classes related to the requirements and the domain.

## 2.1       Requirements

The purpose of the requirement section is to define functional and non-functional requirements. Requirements are perceived as a contract with the stakeholders (customer), and are specified to ensure a common understanding.

Identify the users and describe their roles (e.g. actor descriptions, personas and scenarios).

Note: Remember that all requirements must be precise and testable.

Use the SMART principle (YourCoach n.d.) and MoSCoW (Business Analyst Learnings 2013).

Present a numbered and prioritised list of all the requirements of the users, customer and stakeholders for the project.

## 2.2       Functional Requirements

Functional requirements could be described with Use Cases, Use Case descriptions and Actor descriptions. Use Case descriptions can be detailed with different types of UML diagrams.

## 2.3       Non-Functional Requirements

There are no standards for describing non-functional requirements. You can find a useful checklist here (Banger 2014). For content see Appendix 3 “Project Report – VIA Engineering Guidelines”.

# Design

The purpose of the design section is to outline HOW the system is structured; i.e. to transform the artefacts of the analysis into a model that can be implemented. The design section is relevant for the programmer, whereas the analysis is relevant for the stakeholder.

Elements that may be relevant in this section:

·  Architecture: Find architecture patterns here (Leszek Maciaszek 2004, chap.9).

·  Technologies: Describe technologies used, also alternative technologies. Argue for choice of technology according to the project aim.

·  Design Patterns: Describe which design patterns (GoF (Gamma et al. 2002) etc.) you are using and why.

·  Class Diagrams

·  Interaction Diagrams

·  UI design choices

·  Data models, persistence, etc.

You must explain all diagrams in the report. These diagrams including descriptions are the blueprints for the implementation.

Hint: One way to figure out which objects/classes are needed in the design is to apply the General Responsibility Assignment Software Patterns/principles (GRASP) (Larman 2004, chap.17).

Hint: Consider how to design your system to make it testable.

# Implementation

The purpose of the implementation section is to explain interesting code snippets. An idea is to explain the complete path through your system from UI to database etc.

Remember that your implementation must be consistent with your design (Larman 2004, chap.20).

Which standard libraries are used? How are design patterns implemented, etc.

Hint: Implement your code in a testable manner.

# Test

The purpose of the test section is to document the result of your testing; to verify if the content of the requirements section has been fulfilled. How is the system tested, which strategy has been used; e.g. White Box (Unit Test), Black Box, etc.

## Test Specifications

For functional requirements, test specifications must be listed. These test specifications can be described as soon as the functional requirements have been completed (Use Cases including descriptions).

IEEE can be used as a template for test specification (IEEE Computer Society 2008). VIA Library can give you access to this standard.

# Results and Discussion

The purpose of the results and discussion section is to present the outcome and achieved results of the project.

# Conclusions

The world is evolving in ways that were unthinkable in the past, technologies continue to develop and as such, old ideas are perhaps forgotten, even if there is a demand for them. Movie rentals could enter this category, even though some services are now offering rental possibilities, their range is far from perfect.

This topic was chosen from the idea, of the lack of availability of this service. Therefore, a lot of ideas had to be discussed, mostly on what would customers like to do with this resource. Multiple requirements were identified from these simple questions, from this, the idea of VibeFlix was conceived, a service that could tackle the problems presented and would improve the idea of streaming systems as a whole.

Initially, most of these requirements and ideas were identified during the project description. As time passed, and stages such as analysis, design and implementation these ideas were further improved.

One of the most important facts of this project was the lessons gathered from last semester. Organization and time distribution were one of the key factors that led to the previous project not being fully completed and missing features. Furthermore, the success of this project can be attributed to teamwork as well as the use of SCRUM and UP, which presented new ways to approach Problem Based Learning.

The usage of SCRUM allowed for the distribution of tasks for each member of the group in a fair and reasonable way. Moreover, it allowed the team to focus on what actually matters for the project as well as allow for enough time for members to rest. However, SCRUM was not alone in this project, Unified Process was used along with it, which resulted in SCRUM objectives being based on the different phases of UP.

Finally, the project can be considered as achieved. This project managed to accomplish total functionality based on the identified requirements. Furthermore, aesthetical details were added due to the project finishing earlier than expected, which also allowed for documentation to happen in a calm and productive manner. It is possible to make rentals, cancel them as well as create an account, log in and manage the system.

# Project future

The project from a technical viewpoint is a success. However, everything can be improved.

Firstly, an interesting feature nonetheless would be the system reproducing the movies listed. Even though this implies copyright and licensing issues, it could be useful to reproduce these movies after the rental has been processed.

Secondly, filter restrictions on the movies. The system did not account for the different ratings of movies, it is important to showcase movies appropriate for each age group by using the “Motion Picture Association film rating system” and limit the access to some of them.

Finally, this system could be adapted to a multitude of purposes, it could be a game, bicycle, items or house rentals. Therefore, it would be important to keep this system in mind for the future, as a base on what should be done.

# Sources of information

**Note: Use the standard reference method: Harvard Anglia. A very good reference tool is Mendeley** (Mendeley.com 2016), **ask VIA Library if you need help.**

Banger, D., 2014. A Basic Non-Functional Requirements Checklist « Thoughts from the Systems front line.... Available at: https://dalbanger.wordpress.com/2014/01/08/a-basic-non-functional-requirements-checklist/ [Accessed January 31, 2017].

Business Analyst Learnings, 2013. MoSCoW : Requirements Prioritization Technique — Business Analyst Learnings. , pp.1–5. Available at: https://businessanalystlearnings.com/ba-techniques/2013/3/5/moscow-technique-requirements-prioritization [Accessed January 31, 2017].

Dawson, C.W., 2009. *Projects in Computing and Information Systems*, Available at: http://www.sentimentaltoday.net/National\_Academy\_Press/0321263553.Addison.Wesley.Publishing.Company.Projects.in.Computing.and.Information.Systems.A.Students.Guide.Jun.2005.pdf.

Gamma, E. et al., 2002. *Design Patterns – Elements of Reusable Object-Oriented Software*, Available at: http://books.google.com/books?id=JPOaP7cyk6wC&pg=PA78&dq=intitle:Design+Patterns+Elements+of+Reusable+Object+Oriented+Software&hl=&cd=3&source=gbs\_api%5Cnpapers2://publication/uuid/944613AA-7124-44A4-B86F-C7B2123344F3.

IEEE Computer Society, 2008. *IEEE Std 829-2008, IEEE Standard for Software and System Test Documentation*,

Larman, C., 2004. *Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development*,

Mendeley.com, 2016. Homepage | Mendeley. Available at: https://www.mendeley.com/ [Accessed February 2, 2017].

YourCoach, S.M.A.R.T. goal setting | SMART | Coaching tools | YourCoach Gent. Available at: http://www.yourcoach.be/en/coaching-tools/smart-goal-setting.php [Accessed August 19, 2017].

# Appendices

The purpose of your appendices is to provide extra information to the expert reader. List the appendices in order of mention.

Examples of appendices

·        Project Description

·        User Guide

·        Source code – source documentation

·        Diagrams

·        Data sheets

·        Etc.

**Appendix A Project Description**

Insert the original Project Description here