

Team 3

Combat

Vision Document

System Development Game Project

Department of Computer Science at Norwegian University of Science and Technology

Team-members: Shahed Abbas, Magnus Baugerud, William Dalheim, Helene Jonson, Sara Mohammadi, Henrik Tronstad.

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Revision History

| Date | Version | Description | Author |
|------------|---------|---------------------|--------|
| 28.02.2019 | 1.0 | Making the document | Team 3 |
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1. Introduction

The purpose of this document is to describe the project in Systemutvikling 1. In this project we are going to develop a combat game. The main goal of this project is to learn programming and create a database. The game must be a multiplayer game where all players

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play on their own computer. No animated graphics are allowed in this project.

The game is about fighting monsters. All the players are on the same team and must work together to win. The game is turn-based, which means each player take their turn individually. The monsters will also take turns, which the game handles on its own.

1.1 References

[1] lectures and presentations from tuition in object oriented programming and databases.

[2] gitlab: https://gitlab.stud.idi.ntnu.no/users/sign_in

[3]phpMyAdmin: <https://www.phpmyadmin.net/>

[4]balsamiq: <https://balsamiq.com/>

2. Summary

2.1 Problem summary

The end product, along with the documentation and presentation, will be evaluated and graded. The given grade affects 45% of the total grade in this course, the remaining 55% being the final exam.

This product can solve the problem of living far away from the other players. It replaces the standard tabletop game that requires that everyone is at the same place. With this product you can play online and the problem is resolved.

2.2 Product summary

| | |
|----------------------|--|
| For | anyone |
| Who | wishes to play the game |
| The game | is a standalone Java application connected to a database |
| Which | allows the players experience a digital adaptation of the combat system for the tabletop game Dungeons & Dragons |
| As opposed to | meeting up to play or not being able to play because of distance barriers |
| this product | allows players to interact with each other through an internet connection |

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3. Stakeholders and users

3.1 Stakeholder summary

| Name | Description | Role |
|----------|-------------|--|
| Team 3 | End user | Creates user, logs in and plays the game. |
| Lecturer | End user | Makes sure the requirements for the game is met and evaluates the quality of the game. |

3.2 User summary

| Name | Description | Role throughout the development | Represented by |
|----------|---|---|------------------|
| Student | Student at Department of Computer Science at NTNU | Works towards a finished product with the other team members | Self-represented |
| Lecturer | Works and teaches at the Department of Computer Science at NTNU | Supervisor for the students, creator of the task and who evaluate the project | Self-represented |
| Tester | A user outside of the team | tests the game, especially user interaction and engagement | Self-represented |

3.3 User environment

The user will run a standalone Java-application that will connect to a database. When starting this application, a login-page will be presented. The user can then choose to register itself with a username and self-made password, or log in using existing credentials already registered. When the existing

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credentials has been certified after inputting them on the login page, the user will be taken to the main menu for the game.

When creating a new account, the user must provide a username, an email and a password. After account creation, the user will be redirected to a character creation screen to customize its own character to be used in-game. After the creation, the user will be taken to the main menu.

The main menu will provide the user with a set of options presented as buttons. These are the following:

1. Start a game

The user will be taken to a lobby and given a key that can be shared with other users.

2. Join lobby

An empty text area will appear to the user. To proceed the user requires a valid key received by another user.

3. Account

The user will be taken to a new page showing a summary of its profile. From here, the user can go to three other pages.

1. View character

Redirects to a page showing statistics about the users gameplay.

2. Change username

Redirects to a new menu to input a new username.

3. Change password

Redirects to a new menu to change the password.

4. Options

The user will be taken to another menu with different options to modify the playing experience. This menu will be adjusted throughout development as new features are implemented

5. Help

The user can read a game guide or acquire information about the developers.

6. Sign out

Pressing this button will redirect the user back to the login-page.

The graphical interface for the game itself will include three different windows. One with a grid containing the players and the monster, another with different options for interaction and actions to perform. The last one is a chat used to communicate with the other players and to keep them updated with events in the game.

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3.4 User needs

| Needs | Priority | About | Solutions |
|--|----------|--------------|--|
| Register as a user | High | Registration | Register by setting a username and password |
| Change password | Low | Registration | Register a new password on their account |
| Join lobby | Medium | Game | Receive a lobby key from another player and join the lobby |
| Play the game | High | Game | Log in and start game |
| View statistics and profile | Medium | Game | Enter "Account" from game menu |
| Log out | High | Main menu | Disconnect the user from the database by letting them click "Sign out" |
| View information about the game | Medium | Main menu | Enter "About the game" |
| Communicate through a chat | Low | Game | In-game chat |
| Read manual and contact the developers | High | Game | Give the users access to a web-page containing necessary information |

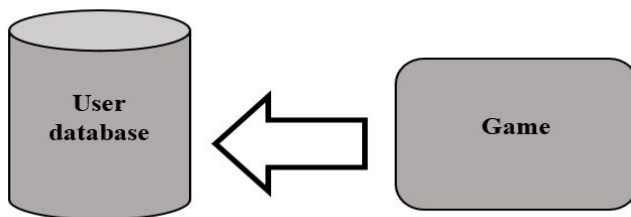
3.5 Alternatives

Other turn based combat games or a Dungeons and Dragons play group.

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4. Product overview

4.1 Role in a user environment



4.2 Assumptions and dependencies

Before the start of development, some preconditions has been set. The product should be a multiplayer game with login functionalities. This game will be programmed in Java, as a standalone application. This includes the use of the standard libraries from Java. JavaFX will be used for implementing a Graphical User Interface.

5. Product functional properties

| Functional properties |
|---|
| In login page, the user uses username and password. In the same page, the user will be able to sign up as a new user and made a new password. |
| Changing of password, the user will be able to change the password if he has forgot it. |
| The game is a multiplayer game in which the players fight against a monster. The game is played in turns. When the player decides what it wants to do, they roll a digital dice to see if they succeed or fail. |
| If the players beat the monster, they will gain a level. if they fail, they have to exit the game and retry the level. |
| The players win the game if all the monsters have been beaten. The monsters are ranked and gets progressively harder to beat. |

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6. Constraints and other requirements

The game needs to be a standalone Java application using the mySQL database provided by the university. Hashing and salting must be used for user passwords. To prevent SQL injections, prepared statements must be used. A connection pool must be used with one connection. 3D-graphics are not allowed.

There is a requirement that the team uses collaboration tools as part of the project, primarily Gitlab. It is required to make a prototype using BalsamiQ and also using JUnit to test all classes in the game. The product must be tested by people who are not part of the team.

The process should be carried out in three iterations. The two first iterations will be presented at the two first team meetings, and the third will be presented in the project presentation.

The first iteration should focus on vision and requirements. An early prototype of the game must be made in BalsamiQ and tested by users outside of the team. On the first team meeting the prototype should be presented, along with the vision document and the domain model.

In the second iteration the focus should be on making a minimum viable product in Java. this application must also be tested by users outside of the team. The MVP and the first version of the requirements documentation WIKI should be presented at the second team meeting.

In the third iteration the game and all documentation should be finished.

Submission of the report consists of the main report with all necessary attachments. The attachments include collaboration agreement, project plan with gantt-chart, timesheets for each team member, meeting summonings, vision document and finally links to Gitlab WIKI and JavaDoc pages.