Individual Project (CS3IP16)

Department of Computer Science

University of Reading

Project Initiation Document

## PID Sign-Off

|  |  |
| --- | --- |
| **Student No.** | 23021793 |
| **Student Name** | Luc Dexter |
| **Email** | L.dexter@student.reading.ac.uk |
| **Degree programme** (BSc CS/BSc IT) | BSc CS |
|  |  |
| **Supervisor Name** | Patrick Parslow |
| **Supervisor Signature** |  |
| **Date** |  |

# SECTION 1 – General Information

## Project Identification

|  |  |
| --- | --- |
| **1.1** | **Project ID**  (as in handbook) |
|  | 240 |
| **1.2** | **Project Title** |
|  | MUD Server |
| **1.3** | **Briefly describe the main purpose of the project in no more than 25 words** |
|  | To create a MUD game in which players can interact with each other, ai bots, objects and complete quests in a world. |

## Student Identification

|  |  |
| --- | --- |
| **1.4** | **Student Name(s), Course, Email address(s)**  e.g. Anne Other, BSc CS, [a.other@student.reading.ac.uk](mailto:a.other@student.reading.ac.uk) |
|  | Luc Dexter, BSc CS, l.dexter@student.reading.ac.uk |

## Supervisor Identification

|  |  |
| --- | --- |
| **1.5** | **Primary Supervisor Name, Email address**  e.g. Prof Anne Other, a.other@reading.ac.uk |
|  | Patrick Parslow, p.parslow@reading.ac.uk |
| **1.6** | **Secondary Supervisor Name, Email address**  Only fill in this section if a secondary supervisor has been assigned to your project |
|  |  |

## Company Partner (only complete if there is a company involved)

|  |  |
| --- | --- |
| **1.7** | **Company Name** |
|  |  |
| **1.8** | **Company Address** |
|  |  |
| **1.9** | **Name, email and phone number of Company Supervisor or Primary Contact** |
|  |  |

# SECTION 2 – Project Description

|  |  |
| --- | --- |
| **2.1** | **Summarise the background research for the project in about 400 words. You must include references in this section but don’t count them in the word count.** |
|  | The background research comprised of playing a mud server and revising java networking. I played Aardwolf, a mud server that first appeared in 1996 to gain an understanding of some of the common traits in muds. Muds generally employ a fantasy setting. Players choose a race and class and create their character before jumping into the game. A game consists of a world in which players can explore and interact with. Skills, levelling up and fighting beasts or other players are important parts of the game.  I watched and studied a youtube series by youtuber thenewboston on java networking and sockets, as well as revising lectures on sockets from my year 2 java module. Sockets represent connections in java and are important as players will need to connect to the server machine to play the game. Code is going to need to be written for a server machine and then the client machine of the player attempting to connect. Some time was spent on exploring platform possibilities and website hosting.  Aside from technical research I spent time exploring common mud server themes and worlds to gain an idea of different flavours and genres. These included Achaea dreams of divine lands, Mume, Lusternia age of ascension, Materia Magica, Forgotten Kingdoms, Discworld mud, Kallistimud. This gave me a flavour of the possible themes for my own mud server.  Basic constructs came to light when exploring a range of muds. Rooms and realms are common, as player move north, east, south, west from room to room, sometimes up and down as well. They can talk to each other and npcs as well as use an array of commands to interact with the world. Players interact through the world via a console in which they type commands. The world is described through text.  <https://www.aardwolf.com/>  <https://www.youtube.com/watch?v=dlgnmZD-Dzk>  <https://docs.oracle.com/javase/7/docs/api/java/net/Socket.html>  <https://www.achaea.com/>  <http://www.mume.org/>  <https://www.lusternia.com/>  <https://www.materiamagica.com/>  <http://www.forgottenkingdoms.org/>  <http://discworld.starturtle.net/lpc/>  <http://www.legendsofkallisti.com/> |
| **2.2** | **Summarise the project objectives and outputs in about 400 words.** These objectives and outputs should appear as tasks, milestones and deliverables in your project plan. In general, an objective is something you can do and an output is something you produce – one leads to the other. |
|  | The overall goal is to create a fully operational MUD server. This is broken up into the following:   1. Build the platform on which the game will be built, i.e. writing the code for network connections that allow multiple players to connect to the server to play and talk to each other. 2. Build the basic constructs with which to build the world, i.e. room, realm, player, npc, object classes. 3. Build the world using these classes. 4. Build a library of commands that form the user input controls, such as movement, fighting etc. 5. Build systems for each command. 6. Build a levelling up system into the player class, i.e. skill trees and levels numbers in given skills. 7. Build a login system that allows players to create their characters, including names, classes, races, skills and continue playing as a previously created character. 8. Build basic constructs for AI interaction and npcs. 9. Build a system that allows a player to become a system admin and can create and change the world. 10. Basic constructs for storylines and quests. 11. Build a basic tutorial guiding the player through the basics of the game, such as movement, fighting, levelling up, inventory management, quests. 12. Build questlines that include npcs, including friends and foes. 13. Build a system for players for form clans or friendship groups.   (The use of the world Build includes design, such as class diagrams etc). |
| **2.3** | **Initial project specification - list key features and functions of your finished project.** Remember that a specification should not usually propose the solution. For example, your project may require open source datasets so add that to the specification but don’t state how that data-link will be achieved – that comes later. |
|  | 1. Login System. 2. Character creation. 3. Tutorial. 4. New player global chat help. 5. In game player to player interaction. 6. In game player to NPC interaction. 7. Quests and storylines for players to complete. 8. Level up and skills system. 9. Fighting system. 10. World to explore. 11. Loot and items to buy, find and craft. 12. World objects such as chests, wearable items, weapons etc. 13. NPC friend system of allies and helpers who have their own goals and actions. 14. NPC foe system of enemies who have their own goals and actions. 15. World of vegetation, food, water, poison, beasts, animals, fire, to explore that regenerates and operates on its own. 16. Varied set of races and unique abilities. 17. System admin profile who can edit world and objects within it. |
| **2.4** | **Describe the social, legal and ethical issues that apply to your project. Does your project require ethical approval?** |
|  | The ethical issues are content related. It depends on what the mud allows players to say and do to other players. Certain actions may be age inappropriate. Allowing players the freedom to say whatever they want to each other opens the window for abuse.  Socially, the experience of the game could come into question. Does the game allow players to destroy beginners or create a system where those on top stay on top? Bullying could be a problem. What happens to players equipment if they die? Can players steal equipment? |
| **2.5** | **Identify and lists the items you expect to need to purchase for your project. Specify the cost (include VAT and shipping if known) of each item as well as the supplier.** e.g. item 1 name, supplier, cost |
|  | n/a |
| **2.6** | **State whether you need access to specific resources within the department or the University e.g. special devices and workshop** |
|  | n/a |

# SECTION 3 – Project Plan

|  |  |  |  |
| --- | --- | --- | --- |
| **3.1** | **Project Plan**  Split your project work into sections/categories/phases and add tasks for each of these sections. It is likely that the high-level objectives you identified in section 2.2 become sections here. The outputs from section 2.2 should appear in the Outputs column here. Remember to include tasks for your project presentation, project demos, producing your poster, and writing up your report. | | |
|  | | | |
| **Task No.** | **Task description** | **Effort**  **(weeks)** | **Outputs** |
| **1** |  |  |  |
| 1.1 | **Background Research** | 1 | *…* |
|  |  |  |  |
| **2** | **Analysis and design** | 3 |  |
| 2.1 | Design the platform and connections | / | Class diagram |
| 2.2 | Design world building constructs | / | Class diagram |
| 2.3 | Design UI commands library | / | Lists of commands and their explanations |
| 2.4 | Design player, skills, levels, races, abilities and character creation | / | Class diagrams |
| 2.5 | Design login system | / | Flow chart |
|  |  |  |  |
| **3** | **Develop prototype** | 30 |  |
| 3.05 | Build platform | / | … |
| 3.10 | Build world building constructs | / | … |
| 3.15 | Build UI commands library | / | … |
| 3.20 | Build player creation | / | … |
| 3.25 | Build levelling up system and skill trees | / | … |
| 3.30 | Build simple world | / | … |
| 3.35 | Build constructs for quests and story lines | / |  |
| 3.40 | Build a tutorial | / |  |
| 3.45 | Build a login system | / |  |
| 3.50 | Build basic quests and storylines | / |  |
| 3.55 | Build clan system | / |  |
| 3.60 | Expand World | / |  |
| 3.65 | Expand quests | / |  |
|  |  |  |  |
| **4** | **Testing, evaluation/validation** | 2.5 |  |
| 4.1 | unit testing | / | … |
| 4.2 | … | … | … |
|  |  |  | … |
| **5** | **Assessments** |  |  |
| 5.1 | write-up project report | 2 | Project Report |
| 5.2 | produce poster | 0.5 | Poster |
|  | … |  |  |
|  |  |  |  |
| **TOTAL** | **Sum of total effort in weeks** | **39** |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SECTION 4 - Time Plan for the proposed Project work** | | | | | | | | | | | | | |
| For each task identified in 3.1, please *shade* the weeks when you’ll be working on that task. You should also mark target milestones, outputs and key decision points. To shade a cell in MS Word, move the mouse to the top left of cell until the curser becomes an arrow pointing up, left click to select the cell and then right click and select ‘borders and shading’. Under the shading tab pick an appropriate grey colour and click ok. | | | | | | | | | | | | | |
| **Project stage** | **START DATE: 25/09/2017****Project Weeks** | | | | | | | | | | | | |
| 0-3 | 3-6 | 6-9 | 9-12 | 12-15 | 15-18 | 18-21 | 21-24 | 24-27 | 27-30 | 30-33 | 33-36 | 36-39 |
| 1 Background Research |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 Analysis/Design |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Design the platform and connections* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Design world building constructs* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Design UI commands library* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Design player, skills, levels, races, abilities and character creation* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Design login system* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 Develop prototype. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build platform* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build world building constructs* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build UI commands library* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build player creation* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build levelling up system and skill trees* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build simple world* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build constructs for quests and story lines* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build a tutorial* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build a login system* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build basic quests and storylines* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Build clan system* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Expand World* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Expand quests* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 Testing, evaluation/validation |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Unit Testing* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 Assessments |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *write-up project report* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *produce poster* |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Risk Assessment Form**

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment Reference No.** |  | **Area or activity assessed:** | **Playing the mud** |
| **Assessment date** | **27/09/2017** |
| **Persons who may be affected by the activity (i.e. are at risk)** | **players** |

**SECTION 1: Identify Hazards -** *Consider the activity or work area and identify if any of the hazards listed below are significant (tick the boxes that apply).*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fall of person (from work at height) |  |  | Lighting levels |  |  | Use of portable tools / equipment |  |  | Vehicles / driving at work |  |  | Hazardous fumes,  chemicals, dust |  |  | Occupational stress |  |
|  | Fall of objects |  |  | Heating & ventilation |  |  | Fixed machinery or lifting equipment |  |  | Outdoor work / extreme weather |  |  | Hazardous biological agent |  |  | Violence to staff / verbal assault |  |
|  | Slips, Trips & Housekeeping |  |  | Layout , storage, space, obstructions |  |  | Pressure vessels |  |  | Fieldtrips / field work |  |  | Confined space / asphyxiation risk |  |  | Work with animals |  |
|  | Manual handling operations |  |  | Welfare facilities |  |  | Noise or Vibration |  |  | Radiation sources |  |  | Condition of Buildings & glazing |  |  | Lone working / work out of hours |  |
| 1. **55** | Display screen equipment |  |  | Electrical Equipment |  |  | Fire hazards & flammable material |  |  | Work with lasers |  |  | Food preparation |  |  | Other(s) - specify |  |

**SECTION 2: Risk Controls** *- For each hazard identified in Section 1, complete Section 2.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Hazard No**. | Hazard Description | Existing controls to reduce risk | **Risk Level** (tick one) | | | Further action needed to reduce risks |
|  | High | Med | Low | *(provide timescales and initials of person responsible)* |
| n/a |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **Name of Assessor(s)** | |  | **SIGNED** | | | |
| **Review date** | |  |

|  |  |  |
| --- | --- | --- |
| **Health and Safety Risk Assessments** – continuation sheet | **Assessment Reference No** |  |
|  | **Continuation sheet number:** |  |

**SECTION 2 continued: Risk Controls**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hazard No**. | Hazard Description | | Existing controls to reduce risk | **Risk Level** (tick one) | | | | Further action needed to reduce risks |
|  | High | | Med | Low | *(provide timescales and initials of person responsible for action)* |
| n/a |  | |  |  | |  |  |  |
|  |  | |  |  | |  |  |  |
|  |  | |  |  | |  |  |  |
| **Name of Assessor(s)** | |  | | | **SIGNED** | | | |
| **Review date** | |  | | |