Bilkent University

Department of Computer Engineering

CS319 – Object Oriented Software Project

Project short-name: An Object Oriented Approach to Zork-Like (Text Based) Games

Analysis Report

Project Group 1

Fatih Karaoğlanoğlu

Ege Tokdemir

Furkan Emrehan Kılıç

İpek Lale

Analysis Report

Oct 15, 2014

This report is submitted to the Department of Computer Engineering of Bilkent University inpartial fulfillment of the requirements of the Senior Design Project course CS491/2.

Contents

[1 Introduction 1](#_Toc254263637)

[2 Current System 1](#_Toc254263638)

[3 Proposed System 1](#_Toc254263639)

[1.1 Overview 1](#_Toc254263640)

[1.2 Functional Requirements 1](#_Toc254263641)

[1.3 Non-functional Requirements 1](#_Toc254263642)

[1.4 Pseudo Requirements 2](#_Toc254263643)

[1.5 System Models 2](#_Toc254263644)

[1.1.1 Scenarios 2](#_Toc254263645)

[1.1.2 Use-Case Model 2](#_Toc254263646)

[1.1.3 Object and Class Model 2](#_Toc254263647)

[1.1.4 Dynamic Models 2](#_Toc254263648)

[1.1.5 User Interface 2](#_Toc254263649)

[4 Glossary 2](#_Toc254263650)

[5 References 2](#_Toc254263651)

Analysis Report

Project short-name: An Object Oriented Approach to Zork-Like (Text Based) Games

# Introduction

Text-based games are games which are played with not technologically visual effects but with the players’ imagination. It uses text charecters instead of graphics. We inspired from the text-based game ‘Zork’(1977) and aimed to remake it by adding it new features and our creativity.

# 2 Current System

Actually there are many text-based games on the market. One of the most known ones is called ‘Zork’. It is an interactive fiction computer game which was written in 1977 using the MDL Programming Language[1]. The game begins in a house. Then player give some directions by writing according keywords on the terminal of the game and game goes on according to these directions.

# Proposed System

What we will done in this project is highly similar to Zork. We will change places and we will add some features. For example in Zork there is a comment ‘read’. If user enters it like ‘raed’ Zork does not understand it and only say; ‘I don’t know this word’. (figure 2) Our game will understand such typos and it will detect the command. In addition Zork is located on 2-dimensional plane. However our game will be on 3-dimensional plane which means there will be orientation options which allow to move up and down.

## Overview

The system to be developed is a text based game. As the name of the games genre implies, the most important components of the game are user and game interactions because visual graphics does not exist. Written commands are the basic way to interact with the game. Unlike Zork, which is our inspiration, the game will provide flexibility for types and case sensivity. In addition instead of 2 dimensional the game will be played on three dimensional space support provided in text format.

The game plot will be based on survival. The game challenges a player to survive by displaying obstacles on his way such as hunger, heat, dark and wound. Player will increase or decrease his points based on his reactions to these obstacles. In addition, player has a health rate and when it drops to zero, the game ends. When the game ends, highscore table appears including players name, score and the finishing time.

Points and health will be calculated based on randomly generated values for some commands such as eat and drink. So there will be a chance factor in the game in addition to skill factor.

# Functional Requirements

* In the game there must be instructions screen which includes description of the game and keywords to proceed in the game.
* The game is controlled by mouse and keyboard.
* The game must have a score screen which shows the player’s score.
* The game should have tolerance for case sensivity and typos.
* The game should have help section.
* The user should be able to login to the game.
* The user should be able to save his progress in the game.
* The user should be able to load where he left.
* The user should be able to perform following actions: look, search, go, take, attack, kill, use, examine.
* The user should be able to logout.
* The user should be able to start from the beginning.
* The user should be able to only save one instance of his playing.
* The user should be able to create new account with his username and password.
* The game should have a high score table.
* The high score table should have dates, names and scores.
* The system shall show the date in this format: dd / mm / yyyy.
* Multiple players should be able to play the game, not at the same time.

## Non-functional Requirements

* The response time for commands should be less than 1 second.
* The game should be able to run in Windows XP/Vista/7/8, Unix.
* The content of the game should be easily understandable for the user.
* There should be separate classes for each construction( locations, items, actions etc.) in the game to ease testability and increase flexibility of the system (working with separate classes make easier to add features to the system).
* The level of expertise of the user shall be basic.
* The system shall store maximum 10MB data.
* The user shall not install the program.
* The user shall have JRE installed in his system in order to run the program.
* The user shall have at least 1GB processor, 1 GB Ram and 1024 x 766 screen resolutions.

**3.4 Pseudo Requirements**

1. The project should be completed within the 3 months.
2. Java should be used as a programming language.
3. The system must be a desktop application.
4. The system must be a distributable.
5. The system must use MySQL database. (eğer user management olcaksa OR txt)

System Models

### Scenarios

Overall usage

Lucy who is a student at Bilkent University has a lot assignments and exams. Therefore she gets bored often and she needs to play our game to relax. She runs the game, creates an account and starts playing. When she is bored he pauses the game and save. After she is back to the game she loads where she left and continues. Eventually she dies in the game. Then highscore table appears and her score, name and time of end game appears along with other players. She then quits the game and continues with her studies.

Controls

During the game she uses help command to learn how she plays the game. Then using the commands appeared in the help section she moves the character and try to survive from obstacles.

### Use-Case Model

A code segment is below:

for (i=1; i<=5; i++)

System.out.println(“report to write”);

If you need to inline code, use “this”style.

### Object and Class Model

Table 1is an example table.

Table 1 An example table

|  |  |
| --- | --- |
| Key | Value |
| key | Value |

### Dynamic Models

### User Interface

# Glossary

Glossary for any domain-specific terms you use in your report.

# References

1. http://en.wikipedia.org/wiki/Zork.