CSC 413 Term Project Documentation

Summer 2024

Student name: Guiran liu

Student ID: 923620812

Class : CSC413-02

GitHub Repository Link:

https://github.com/csc413-SFSU-SU2024/interpreter-GuiG2023

**Details**

Each student must write documentation for their term project. This document will cover the entire term project from beginning to end.

Your documentation MUST contain the following sections:

1. Title page containing
   1. Student’s Name
   2. Class, Semester
   3. A Link to your repository.
2. Introduction
   1. Project Overview (the focus of the term project)
   2. Introduction of the Tank game (general idea)
3. Development environment.
   1. The version of Java Used
   2. IDE Used
   3. Were there any special libraries or special resources where you got them from and how to install them.
4. How to build or import your game in the IDE you used.
   1. Note saying things, like hitting the play button and/or clicking import project, is not enough. You need to explain how to import and/or build the game.
   2. List what Commands that were running when building the JAR. Or Steps taken to build jar.
      1. These can be the steps done either at the command line or in IntelliJ.
   3. List commands needed to run the built jar
      1. These can be the steps done either at the command line or in IntelliJ.
   4. How to run your game. As well as the rules and controls of the game.
   5. Assumptions Made when designing and implementing your game.
   6. Tank Game Class Diagram
   7. Class Descriptions of classes implemented in the Tank Game
      1. No need to over-explain but state the purpose of each class.
   8. Self-reflection on the Development process during the term project
   9. Project Conclusion.

When completing this documentation please make sure you are concise but that each section contains enough information. Point penalties will be added for insufficient information or missing sections.

The final documentation ***MUST*** be submitted in PDF FORM. Please submit your final documentation in PDF form to Canvas by the deadline at the heading of this section (note the repetition, must be important). ***Submitting documentation that is not a PDF will cause a 10-point penalty.***

# Introduction

## Project Overview

This project consists of a 2D game written in Java, a presentation, and final documentation for the term project.The goal of this term project is to practice good OOP. We will make aTank War game, just like the classic tank game -- Battle City, almost building and programming the game from scratch.

## Introduction to my tank game

My tank game has two players, and these two play against each other; the one who eliminates the other one is the winner of the game. In my game, I have three different kinds of power-ups they are speed power enhanced shooting power-ups, and life you will get benefits when you pick up each of those.

About the environmental objects in my game, I have two different unbreakable walls. The one made of concrete color is white is the border of the whole game, and the orange one, there's another unbreakable wall, but actually, it could be broken if you add on ten times and also I have a brick ball wall which could be broken by shooting or by tank crash.

I also have sand and rivers. If you get into the sand, your movement will get extremely slow and easily be aimed by others. Even if you get out of this sand, your speed cannot be restored, so you have two ways to restore your original speed. One way is that you pick up speed power up, then you can not only restore to the original speed but can also enhance your speed. The 2nd way is you can get into the river to wash your sand. When you get out of the river, you will find your speed becomes the original speed, and the river will carry you some distance when you inside the river because the river always has river flows, it will carry you automatically even if you release your keyboard, that make my game more interesting.

The most creative thing I generated in my game is I randomly created enemy Forts that are inherited from the player tank class but cannot move. They will rotate to the player tank, and should player tanks cool down, time is longer than players shot cool down time so you can eliminate the enemy forts, and players can also use the enemy force to get benefit from that. For example, let the Forts rotate to you, and you run away. The bullet will shoot the other players. That's the way you could benefit from that. That makes my game more interesting and challenges each tank, and enemy forts have three lives for player tanks. If you lose one life, you will be reset to the starting point, but no worries, each life has four chances to be shot.

# Development Environment

1. OpenJDK 21.0.2 2024-01-16

OpenJDK Runtime Environment (build 21.0.2+13-58)

OpenJDK 64-Bit Server VM (build 21.0.2+13-58, mixed mode, sharing)

2. IDE: IntelliJ IDEA 2023.3.3 (Ultimate Edition)

3. Java Swing / Java AWT (Not special library)

# How to Build/Import your Project

## Note saying things, like hitting the play button and/or clicking import project, is not enough. You need to explain how to import and/or build the game.

My game is easy to build, I pushed all my clothes and resources in my GitHub repository, so if anyone wants to download my game, just clone my game from my GitHub repository and open it with intellij, and open it as a project, double check all the pictures sound animations set it as resources in this way we finish bud the game.

## List what Commands that were running when building the JAR. Or Steps taken to build jar. These can be the steps done either at the command line or in IntelliJ.

After Colne all the resources and codes from my GitHub repository, I have to set the tank game-----simple ----resources as the dependency of this project because I had already put all of the BGM animations, pictures and sounds in there also we can set tankgame folder as resource 2 in this way we could keep all my program can use all the resource that I created before if we finish doing that we can run my game in the next step

## List commands needed to run the built jar. These can be the steps done either at the command line or in IntelliJ.

Generally speaking, I only use Intelli J and find my launcher class selected, and click run the program but there's a way to use bash to play my game. I will test it later and try to write some pseudo commands here： cd path/to/jar 2. java launcher(not sure yet, will test then)

## How to run your game. As well as the rules and controls of the game.

## Assumptions Made when designing and implementing your game.

## Tank Game Class Diagram

A screenshot of a computer

Description automatically generated

## Class Descriptions of classes implemented in the Tank Game

## No need to over-explain but state the purpose of each class.

## Self-reflection on the Development process during the term project

## Project Conclusion.