FACULTY OF COMPUTING AND INFORMATICS

TGD2251 Game Physics

TRIMESTER 2 2020/21

PROJECT #1
Report

Lecture Section : TC1V
Tutorial Section : TT1V

for:

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from:

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Introduction

The purpose of this program is to learn how to implement physics into the game by using Box2d and render and update the game objects using SFML(Simple and Fast Multimedia Library) library. Players who played this game could also train their reaction time and concentration as they would have to not fall out from the frame while collecting as many points as they can and reach to the end.

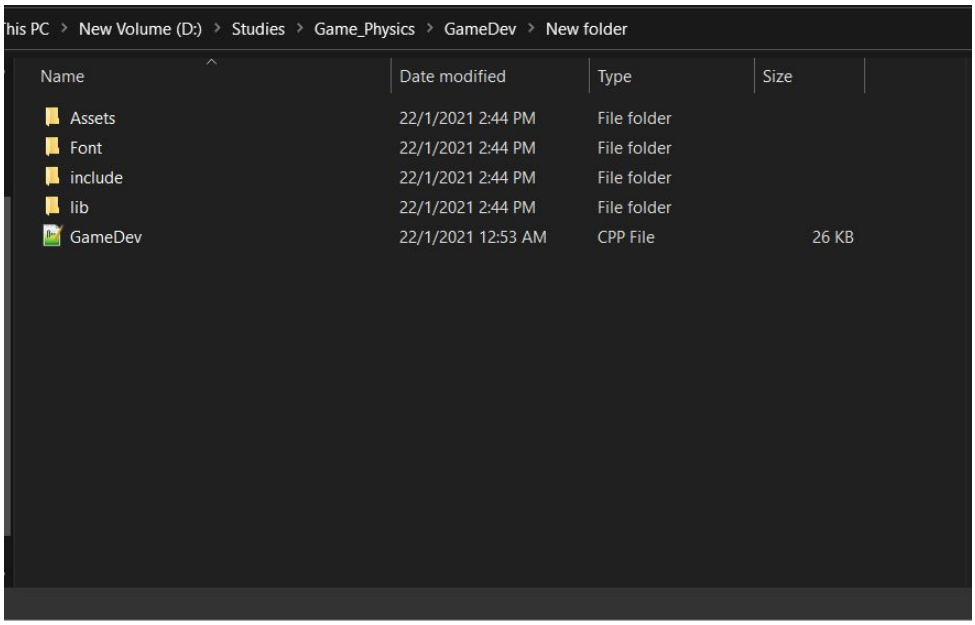
About Our Game

On 21/1/2050, a meteor collided on a spaceship where our main character, Adam belongs to. Luckily, the spaceship is big enough and not completely destroyed but Adam is separated from his teammates at the other half of the spaceship after that accident. Adam knew that he would die soon if he stayed here therefore he needed to find his teammates at the other half of the spaceship in order to escape from here with his teammates. He grabbed a spacesuit with a gravity control device and started his journey to find his teammates at the other half of the spaceship.

Adam's Adventure is a game where players will be controlling Adam to get through all the obstacles to reach the other side of the spaceship. Players can use the gravity control device to allow Adam to overcome the obstacles while not falling out to the space. Players can also challenge their limits by collecting more points when they are passing through the obstacles and collect the coins on the way. When they reach the other side of the spaceship the game will then end.

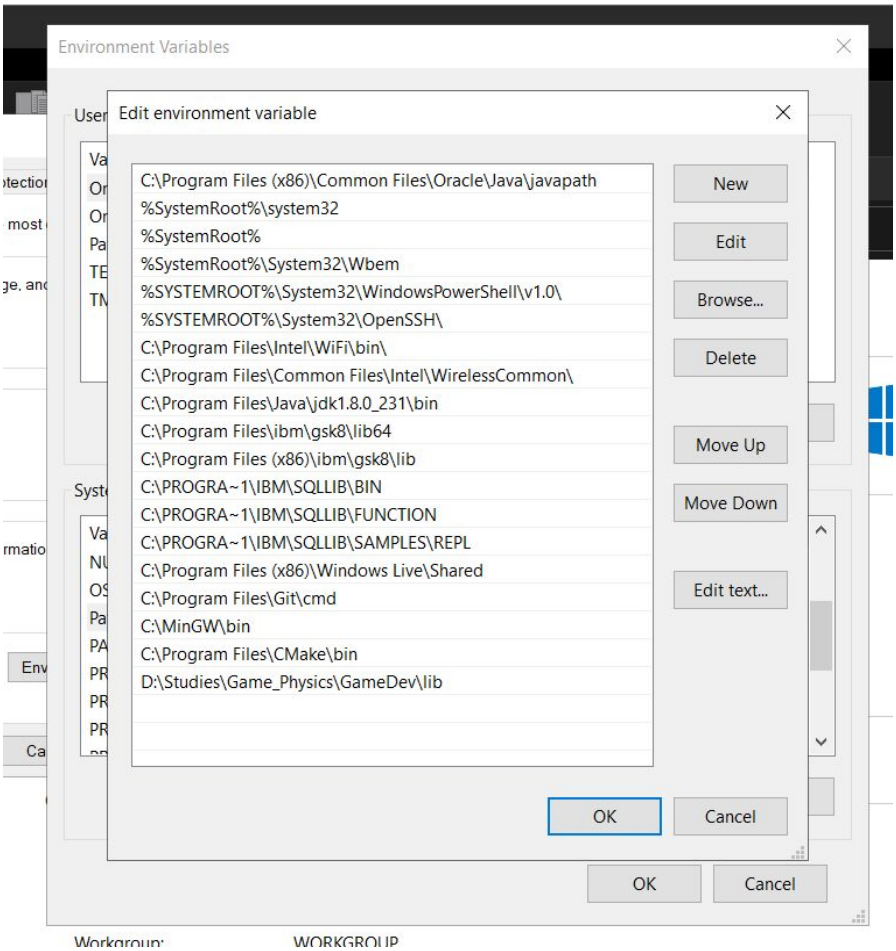
User Manual/ Instructions

1. How to install?
    a. Assuming that you have already installed the GNU C++ compiler with version 9.3.0 installed as this program requires a GNU C++ compiler to work.
    b. If openAL library is not installed on your machine, please go download the windows installer from https://www.openal.org/downloads/oalinst.zip and install it.
    c. Unzip the folder and extract the folder to your current directory. Inside the folder contains the "lib", "include" and also the source code file.



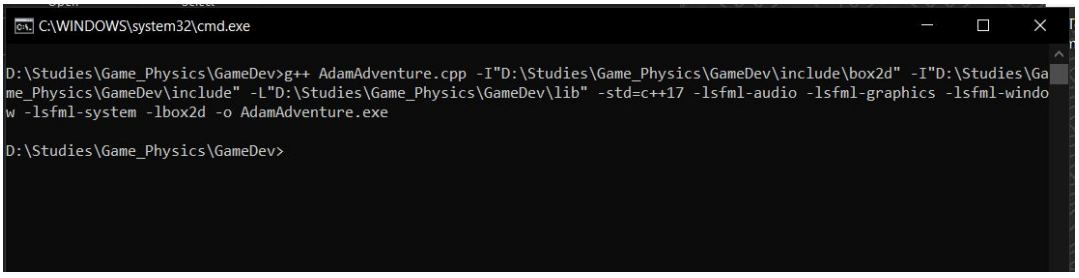
    d. Go to your **File Explorer > Computer > Right click > Properties > Advanced system settings > Environment Variables**.

e. In the System Variables, scroll down and find the PATH environment variable and select it then click on Edit > New > copy the file path of the "lib" folder and paste it into the dialog box > Click OK.



f. Go to Command Prompt, change to the directory of the game by using the cd command.

g. Next, type in **g++ AdamAdventure.cpp -I"<path-to-include/box2d-folder>" -I"<path-to-include-folder>" -L"<path-to-lib-folder>" -std=c++17 -lbox2d -lsfml-graphics -lsfml-window -lsfml-system -o AdamAdventure.exe**



h. Go to the game folder, open the AdamAdventure.exe file.

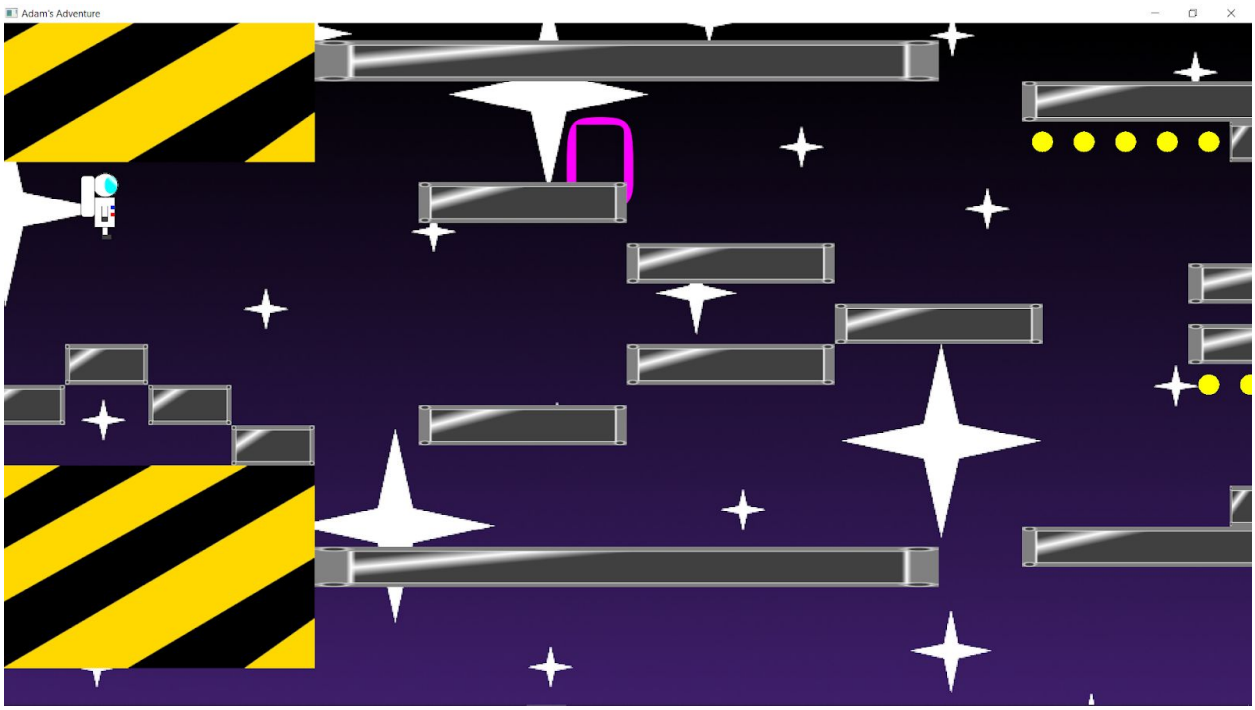
2. How to play?

    a. Players can press up arrow key (↑) to control the gravity to attract Adam upwards and down arrow key(↓) to control the gravity to attract Adam downwards while the gravity is attracting Adam downwards by default.
    b. Players have to avoid the obstacles by using the two arrow keys and remain in the frame.
    c. Players can collect the coins by walking to it and earn points.
    d. Players could end the game by reaching the other side of the spaceship and challenge themselves by earning as many points as possible.

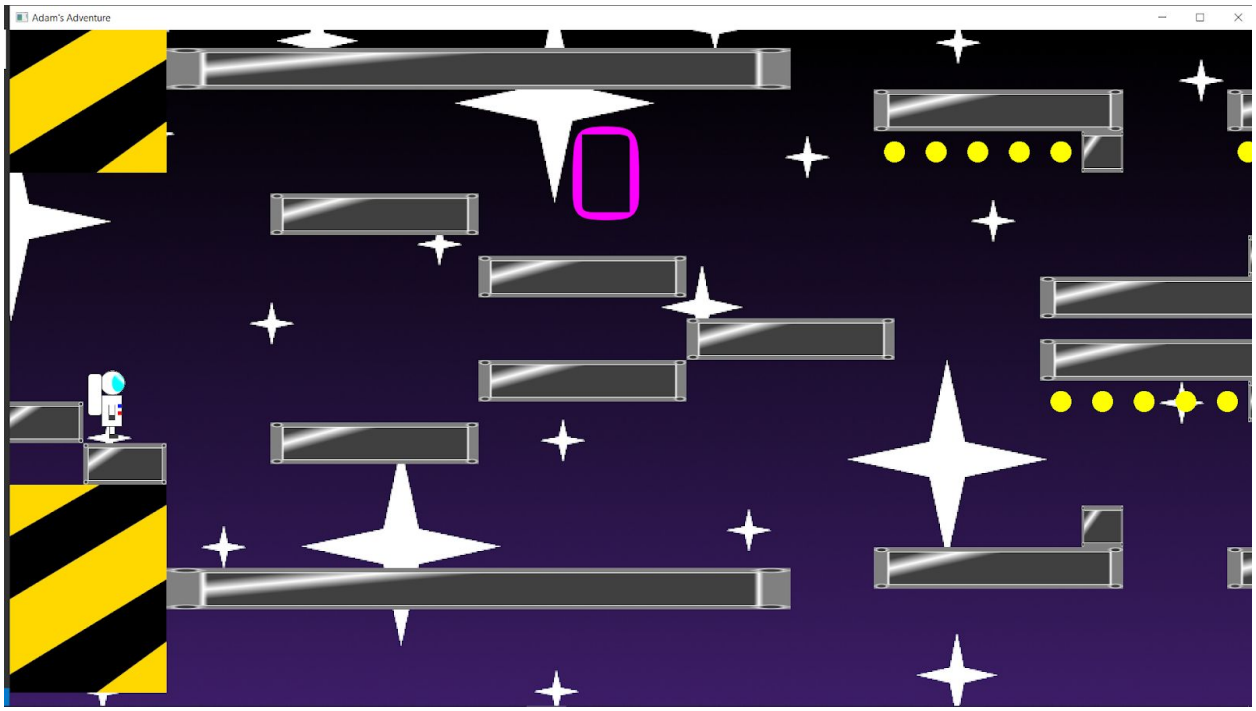
Screen Shots

1. The start interface before the player clicked up or down

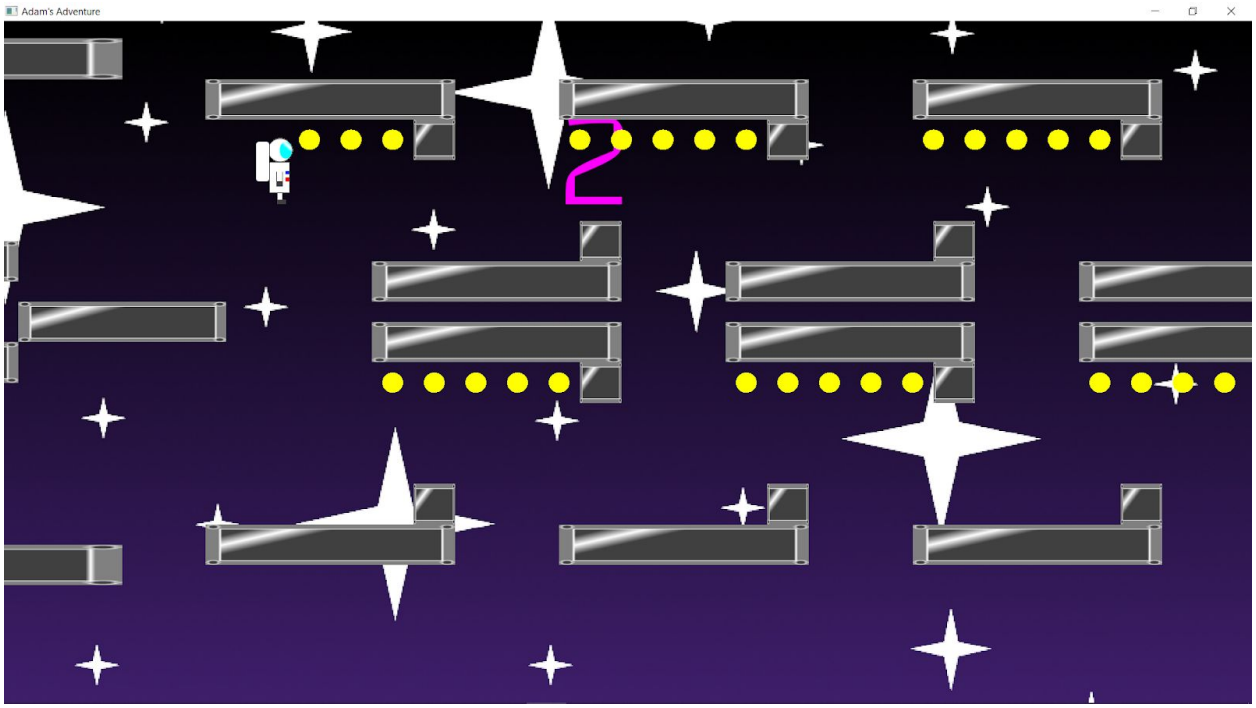
2. When player press up arrow key



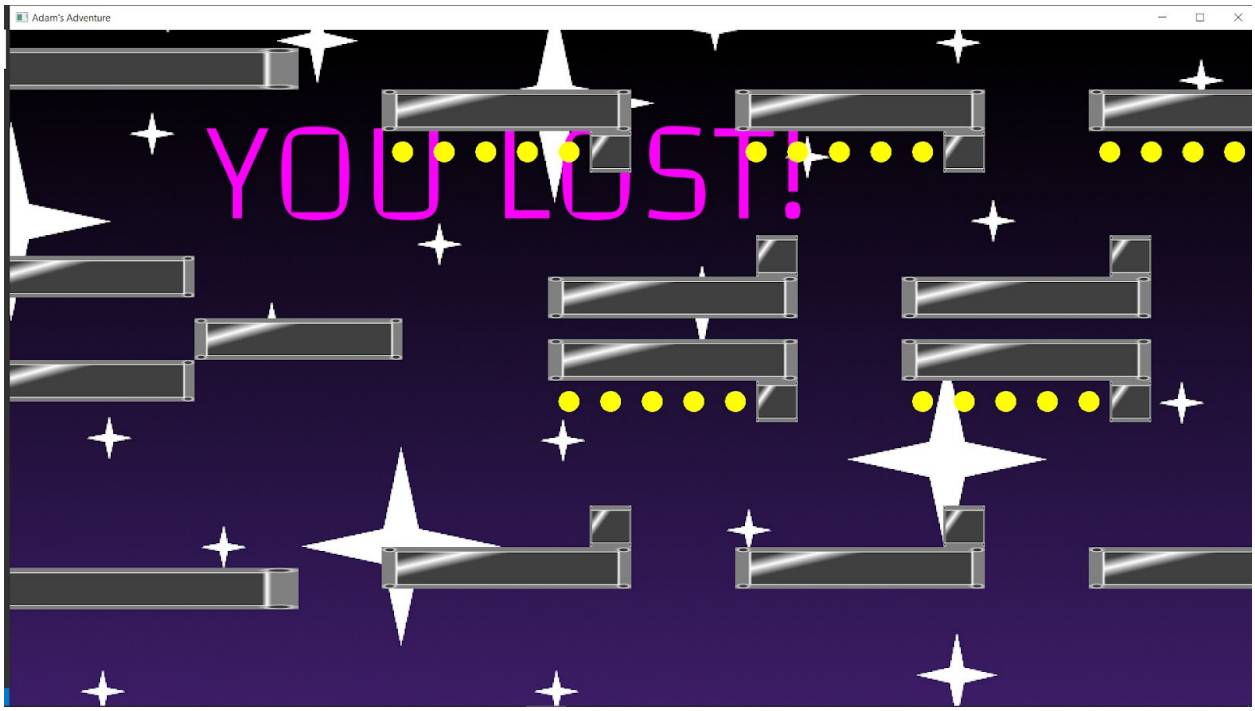
3. When player press down arrow key



4. When Adam collects the coins



5. When Adam fall out from the frame



6. When Adam reach the other side of the spaceship

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References

1. Leszek_Szary. (2012). coin object [Online]. Retrieved 21 January 2021, from https://freesound.org/people/Leszek_Szary/sounds/146723/.

2. Make Your Videos Outstanding. (2020). Victory! - Sound Effect (HD) [Online]. Retrieved 21 January 2021, from https://www.youtube.com/watch?v=5tvtXlrRNFI.