



University of Dhaka
Department of Computer Science and Engineering

Project report :
Fundamentals of Programming Lab(CSE-1211)

Project Name :
Bugs Bunny

Team Members :
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Introduction

Bugs bunny is an endless running game. We make this game from the inspiration of the Bugs-Bunny Cartoon. A hare goes to a carrot garden to steal carrots. But the owner chases after the bunny. The hare will be running to escape. On the way, the hare has to eat carrots and avoid the obstacles. The speed of the bunny and the speed of the obstacles increases for eating carrots. Three lives will be given to the bunny. For hitting obstacles the bunny will lose life by one. If the bunny hits the obstacles three times the game over. It's a continuous level game, without any pause.

Objectives

In first year the students are taught C programming language and problem solving in C. The objective of this project is to review the students' ability to implement the knowledge they have acquired throughout the semester. We have decided to make a 2D infinite running and continuous level game without any pause or break. The game is developed using SDL2 library functions and C/C++ programming language to improve our thinking ability and game development. Designing and making of a project using custom header files and modular programming is also a motive of the project. We hope that people will enjoy and have fun playing this game. Giving people a fun experience through the game is very encouraging for us. It will motivate us to make better projects in future.

Project Features

Main menu :

After run this file,you first write your name and press enter.then,

A menu page will pop up.The game is started.This page will show three options - New game,Instruction and exit .



New game : If the user selects new game the game will start.

Instruction : If the user selects instruction, a page of instruction will pop up. It will show how to play and the rules of the game. For coming to the first page, one should select back option on the top right corner.

Instructions


Press right, left and up arrow key to move forward, backward and jump.

Eat carrots as much as possible. The speed of the bunny will increase for eating every carrots.
1 Carrot = 1 Point

Avoid fire and hunter. If the bunny hits the obstacles 3 times the game will be over.

Hope you enjoy it !!!

Back →

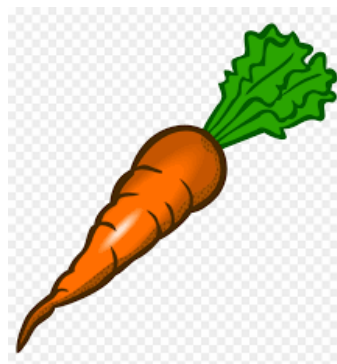


Exit : The user can quit the game by going to the main menu then clicking the exit button. The user can also quit the game by clicking the cross button on the upper right side of the window.

Level : Its a continuous level and endless running 2d game without any pause or break.



Character : The main character in the game is bunny. There also a hunter who run after bunny. An Eagle flying over to catch bunny. There are some stone to hit bunny. There also a fire which drops from the sky.



Obstacles : The player has to avoid the obstacles and score high as much as possible. The bunny has to avoid fire balls,bird,stone and hunter .If it hits the obstacles three times the game overs .



Highscore : The highest scores will be showed in this page with the name of the player.It will be continuously updated after a game .

CLICK TO PLAY AGAIN:If you want to play again,please press here.



Project Modules

Global.h : All the texture,font,music ,renderer>window and variables are declared here.

Ltexture.h : All the essential functions for texture is defined here in a class.

Dot.h : The class of character is declared here.

Header.h : global ,ltexture and dot three header files are combined in this file .

F.cpp : The main function is in this cpp file.

Load.cpp : The initial ,loadmedia,close function is declared and used in this file.

LTexture.cpp : The renderer for objects are used here.

Dot.cpp : The movement of character , position and controlling .

Team Member Responsibilities

Md Sakib Urrahman : Game logic designer , Character controlling , Collision checking ,Mouse event

Md Shah jamal Islam :Background scrolling,idea,motivation.

Rhituraj Talukder : Designing and animating spritesheets,maps,Adding audio,Score font ,Modular

Platform, Library & Tools

Platform: Linux

Language : C/C++

Library: SDL2, SDL2_Image, SDL2_Mixer ,SDL2_ttf

Tools: VScode,Ubuntu built in gedit,Online resizer site,Online converter,Music used from youtube

Limitations

- Lack of obstacles
- Controlling of character is not quite smooth
- No records of the previous game is scored after starting a new game
- Movement of the character is limited
- Animations are glitchy
- No extra levels and maps

Conclusions

We have faced many difficulties during making this project because this is our first time developing a game. Though the project seemed very easy but it was very hard. The tutorials and resources of SDL is very poor. We had to learn SDL from lazyfoo and libsdl. Some tutorials in lazyfoo are not briefly described. Moreover there were also no lessons in youtube of SDL. The images, sprites we wanted were not available in the internet. We had to manually design the spritesheets, maps and the other music and media we needed. Detecting collision, mouse event and coding of movement of the character was challenging for us. As it was not working perfectly. Our problem solving skills also increased. Now we can handle the problems and find solutions by ourselves. Developing a game using C/C++ is completely different from problem solving that we are used to. As we worked as a team our communication skill also got better and each team member were nice to other. Dividing the works and understanding each others code was very tough. We have learned many things through this project. The experience we got in this project will help us in future to make good project and to face new challenges.

Future plan

Though the game is not fully perfect but we tried our best to make the game more interesting and addictive. We would like to make the graphics, animations and controlling more attractive and smooth. We also want to add more levels, maps and menu features. We will try to make a more interactive game in future through the experience we got during making this project. Actually, people who enjoy bugs-bunny cartoon, this game will be a much pleasure for them, like me.

Repositories

GitHub Repository: <https://github.com/RHITURAJ65>

Youtube Video :

https://www.youtube.com/watch?v=ADzE05FrNY4&ab_channel=RhiturajDU

References

Lazyfoo (SDL Tutorials) : <https://lazyfoo.net/tutorials/SDL>

Past year Class :

https://drive.google.com/drive/folders/1wEL_NY9c_Zrnb4IlnQK_Dohm41aWEfim