Proposal

Object Oriented Programming (Tribhuvan Vishwavidalaya)

TRIBHUVAN UNIVERSITY

INSTITUTE OF ENGINEERING

PULCHOWK CAMPUS

PROJECT PROPOSAL

ON

Asteroid Game

SUBMISSION DATE: 15th July, 2021

SUBMITTED BY:

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SUBMITTED TO:

Department of Electronics and Computer Engineering

Acknowledgement

First of all, we would like to thank our lecturer, Er. Daya Sagar Baral for providing us with a wonderful opportunity of engaging in a group project in Object Oriented Programming. We also like to express our gratitude to the Lab Instructors for guiding us during our C++ Labs.

We would also like to thank our seniors and our classmates for various suggestions and their encouragement regarding this project.

We sincerely thank Department of Electronics and Computer Engineering, Pulchowk Campus for giving us an opportunity to work on this project to expand our knowledge on Object Oriented Programming and work on team.

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Introduction

Asteroid is a game which uses object oriented design to recreate a classic asteroid game. The user can play classic asteroid game along with some GUI to make game more engaging.

Objectives

The main objectives to be met in this project can be summarized as follows:

1. To Learn the Object Oriented features of the C++ Language.
2. To learn to integrate different libraries to C++ projects.
3. To learn to use graphical library such as SFML.
4. To learn to work in a team and divide the problems into sub-problems for each member to handle.
5. To learn to efficiently create a project and write formal proposals, reports and project documentation.

Existing Systems

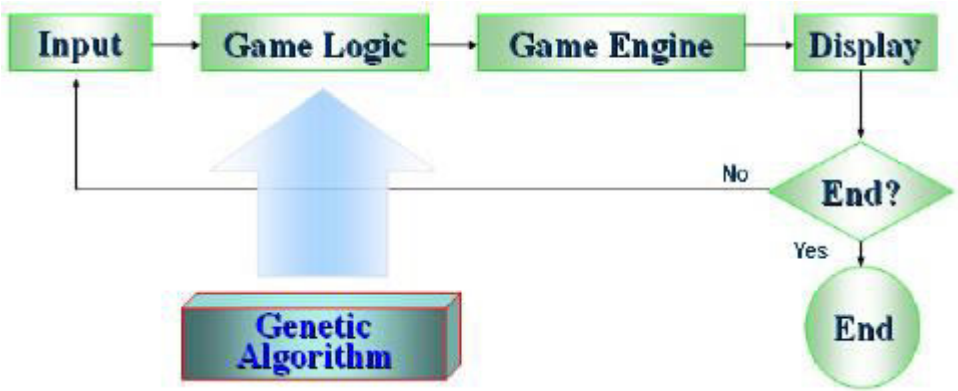
Since it a very popular game there are many existing system for the game.

Proposed System

Description

Asteroid game works like any other game, user give input and respective actions are performed. The game will contains levels with each levels being more difficult than the previous one. Textures and different graphical user interface will be used to provide user with more immersive experience. Game will contain features such as different enemy with different properties to make game more engaging.

Block Diagram:



Methodology

This project will be written in the programming language, C++11. Along with the standard libraries, we will be using the SFML. We will use the documentation provided in the official websites as our main reference for these libraries. We will also use various resources in the internet which includes youtube tutorials as our secondary source of reference. The IDEs will be used according to each member's preference and compatibility. VS Code and Code::Blocks are the main IDEs that members are planning on using with G++ compiler.

We are planning to use the basic graphics functionalities provided by the SFML library employee textures. The SFML should provide us with a way to implement a user friendly GUI. We are trying to use Object Oriented approach as much as possible so, we have planned to use Objects in our program to describe and render a lot of program components.

Project Scope

Main objective of the game is to learn various steps of game development along with various mathematical procedure required for game development.

Assets Design:

Game consist of various assets such as sound, character design and animation. The objectives of this project is to make members familiar with various software used to create these assets and make proper use of ones that are currently present.

Logic design:

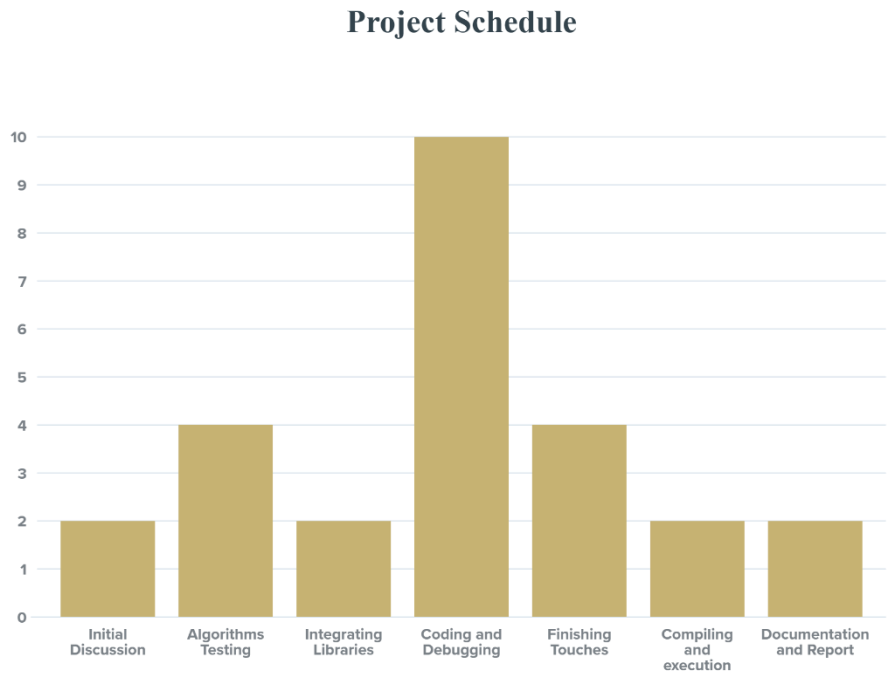
Logic for game development can be one of the most difficult task for any programmer to implement. In this project we aim to develop over logical thinking by implementing various features.

Mathematics:

Mathematics is an integral part of game development. In this project we aim to learn about various mathematical concept required for game development.

Project Schedule

The schedule is purely an estimate of the days required to complete this project. It can be thought of as a rough outline that will guide us into effective time management. The total time we've considered is 26 days and out of those 26 days the time will be spent as follows:



The above mentioned schedule has been planned approximately for providing an aid to develop our project and might get altered according to the circumstances encountered.