

Overview of Project FACTORBS

Software Engineering COMP 4110
University of Massachusetts Lowell
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Team members:



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Instructor: Dr. James Daly

Project Overview

- The system teaches entry level factoring for beginners
- Factoring is an important core math skill that is used often later in school and life
 - The skill can be hard to teach
 - Our project provides a fun way to learn so that students *want* to learn

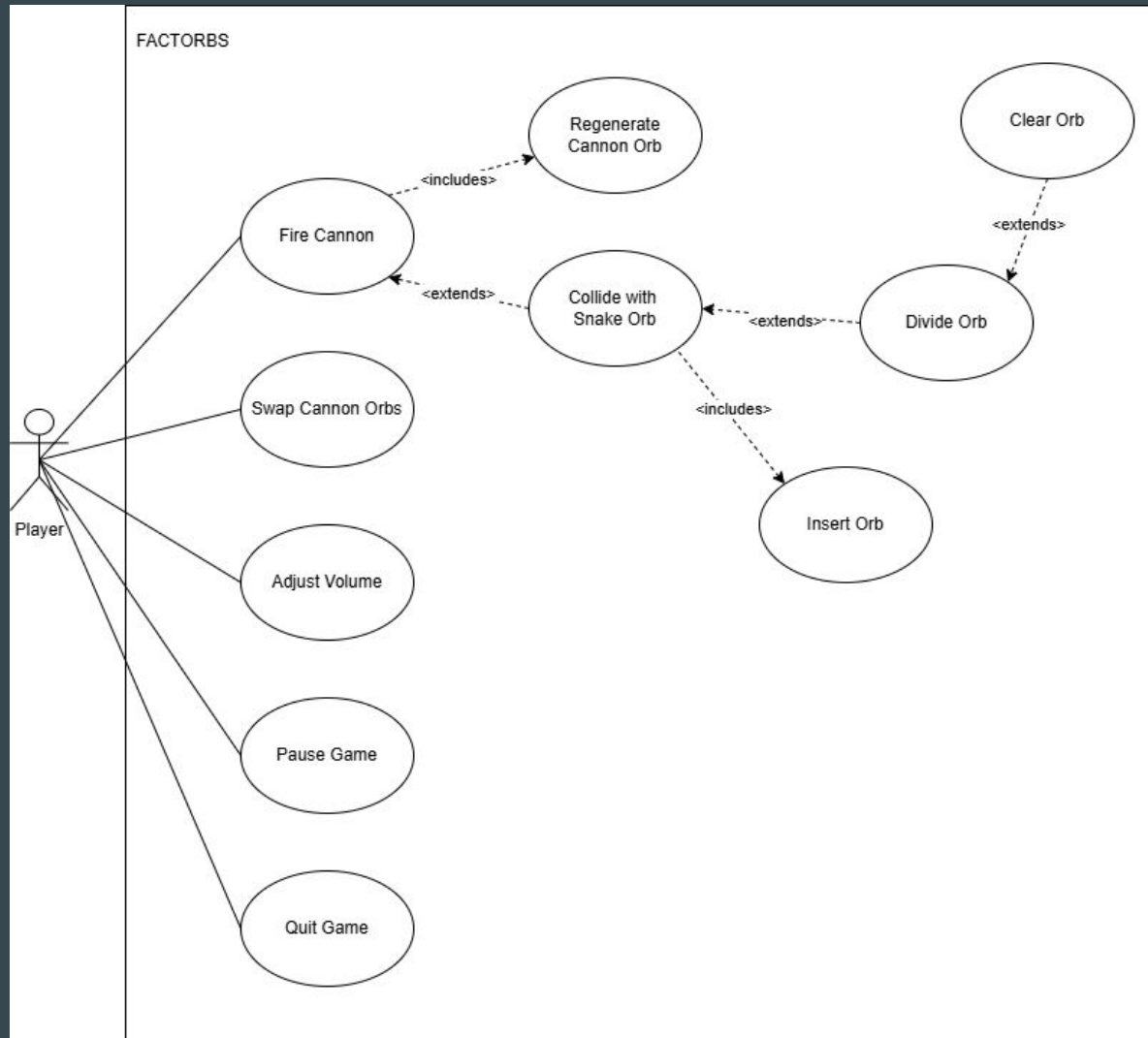
Overview of Features

- Gameplay: snakes of numbered orbs move along the path. Orbs disappear if becomes 1. The game ends if they reach the end of the path.
- Chain operation: divide orbs by collide and insert their divisor, adjacent orbs of the same value chain together.
- Dynamic difficulty: both the snake speed and the orb value grow as the game progresses.

Domain Research

- Investigated area: Mathematics
- Needed to apply domain knowledge on topic: Factoring and division
- Project Constraints
 - Must be comprehensible and educational to 4~8th grade students.
 - Must follow Massachusetts mathematics curriculum framework.
 - Must be safe for consumption.

Use Case Diagram



Part III: Demonstration

- Scenario 1: Main Menu & Settings
- Scenario 2: Gameplay
- Scenario 3: Pause Menu

FACTORBS

An Educational Game Prototype

Start Game

Options

Quit

OPTIONS

Master Volume



Music Volume



SFX Volume



Main Menu



FACTORBS

An Educational Game Prototype

Start Game

Options

Quit

SCORE: 0



21 21 21 28

SCORE: 0



28 7 7 7 7

SCORE: 4



28

3

SCORE: 67

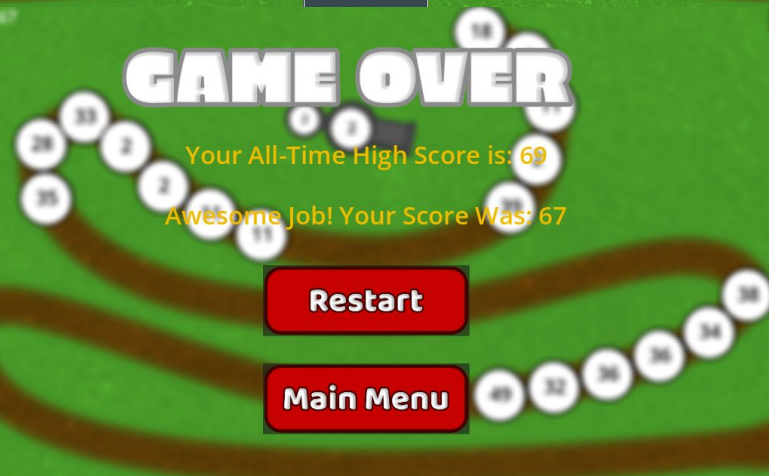
GAME OVER

Your All-Time High Score is: 69

Awesome Job! Your Score Was: 67

Restart

Main Menu



FACTORBS

An Educational Game Prototype

Start Game

Options

Quit

SCORE: 0



24

10

PAUSE

Resume

Restart

Main Menu

Part IV: Future Work

- Adding different difficulties to make orbs start out faster
- Adding different game maps

Acknowledgements

- We gratefully acknowledge and appreciate the participation of our customer, Dr. Daly from The University of Massachusetts Lowell