AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY (AUST)
141 & 142, Love Road, Tejgaon Industrial Area, Dhaka-1208.

Department of Computer Science and Engineering
Program: Bachelor of Science in Computer Science and Engineering

Project Final Report

Course No: CSE-1200
Course Title: Software Development – I

Project Title: Elemental Breaker

Date of Submission: 25/09/25

Submitted to

Saha Reno
Assistant Professor, Department of CSE, AUST.

Kazi Toufique Elahi
Lecturer, Department of CSE, AUST.

Submitted by,

Name: Saad Raiyan
Student ID: 00724105101032
Name: Jarir Hasan Navid
Student ID: 00724105101033

Introduction

Game Description:

Elemental Breaker is a 2D arcade-style brick-breaking game where the player controls a paddle to bounce a ball and break bricks. What sets the game apart from the usual brick-breaking game is its interactive elemental system. The game focuses on efficient and strategic play in order to fully utilize each element's unique property and reaching a high score.

Objective:

To create an engaging and fast-paced game that challenges players' strategic and real-time decision-making skills.

Target Audience:

The game is designed for both casuals looking to pass the time and hardcores aiming for the highest score possible.

Game Development

Tools & Technologies Used

- **Programming Language:** C, C++
- **IDE:** Visual Studio 2013
- **Graphics Library:** iGraphics
- **Platform:** Windows PC

Core Features

- **Player Movement**: The player controls a paddle that moves horizontally at the bottom of the screen.
- **Elemental System**: Unique interaction between ball and bricks of different elements.
- **Score System**: Utilize elemental system and combos to reach high scores.
- **Difficulty**: Not utilizing the elemental and scoring systems properly will result in a lower score.
- **Replay Value**: Dynamic scoring system gives the game a high replay value.

Implementation Details

Code Structure

The game consists of multiple modules:

- **`iMain.c`** – Initializes the game, starts the iGraphics engine.

- **`Ball.h`**– Handles ball movement and collision.
- **`BallPaddle.h`**– Handles player movement and ball direction.
- **`Score.h`**– Calculate score based on combos.
- **`Bricks.h`**– Handles brick collision, implements the elemental system and game over conditions.
- **`Level.h`**– Brick positions, initial elements and level design.

Challenges Faced & Solutions

Challenge	Solution
Using iDraw for ball movement made ball too fast	Used iSetTimer for ball movement.
Setting bricks manually was time consuming	Used loops and randomized numbers for brick properties
ElecCharge function was not working as intended.	Used recursive function to fix the issue.

Screenshots

Figure 1: Menu

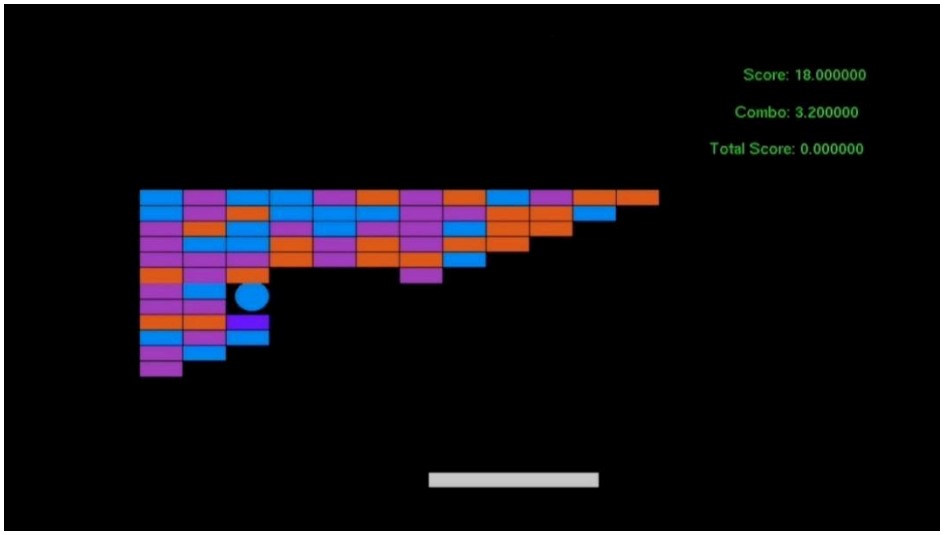
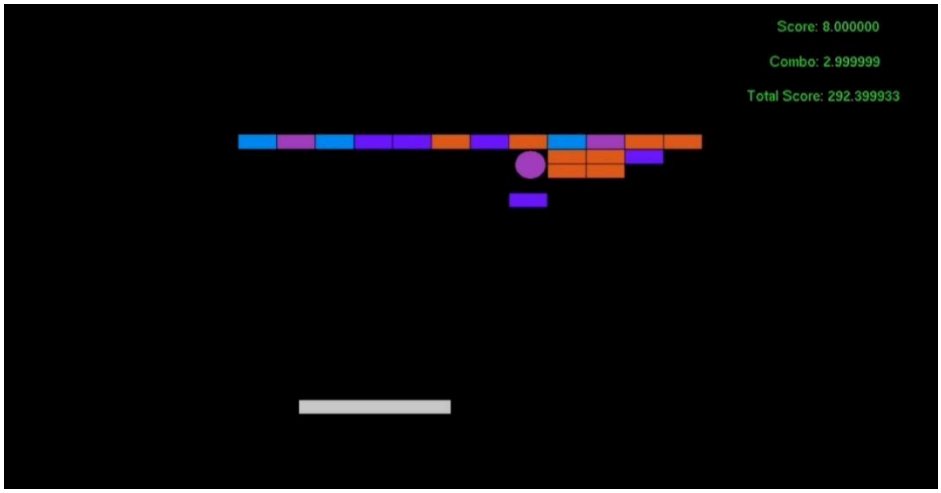


Figure 2 & 3: Gameplay



Conclusion & Future Improvements

Summary

Elemental Breaker Project successfully implemented a strategic and real-time decision-making, fast-paced arcade game to create a fun and engaging experience for players. iGraphics allowed for real-time rendering of graphics.

Future Enhancements

- **More Levels** – Allow players to face more challenging and uniquely designed levels.
- **SFX and VFX**– Add background music and explosion sounds and visual effects.
- **Advanced Elemental System** – Allow even more interactions between ball and bricks for a better experience.