Programming Semester Project Submission Form

Student Information

- Full Name: Ivan Ivanov
- Student ID: 74414993
- Email Address: ivan.ivanov.edu@gmail.com
- Subject: Programming 2
- Date: 15.05.2023

Project Overview

- Project Title: Tetris Game in C#
- Brief Description of the Problem:

I aim to develop a Tetris game using C#. Tetris is a popular puzzle video game where players arrange falling tetromino shapes to complete rows and prevent the stack from reaching the top. The objective of this project is to create an interactive and enjoyable gaming experience for users while implementing the game mechanics and rules of Tetris.

Problem Formalization

Given a grid-based game board with dimensions (width x height), the goal is to manipulate falling tetromino shapes, consisting of four connected blocks each, in order to create complete horizontal rows. When a row is completed, it is cleared, and the player earns points. The game ends if the stack of tetrominoes reaches the top of the game board.

Problem-Solving Algorithm Design

● The algorithm for solving the Tetris game can be summarized as follows:

1. Initialize the game board with the specified dimensions.
2. Generate a random tetromino shape and place it at the top of the game board.
3. Accept user input to move and rotate the falling tetromino.

4. Update the position of the falling tetromino based on user input.
5. Check for collisions between the falling tetromino and the game board or other placed tetrominoes.
6. If a collision occurs, fix the position of the falling tetromino and generate a new one.
7. Check for completed rows and clear them, updating the score accordingly.

- Repeat steps 2-7 until the game ends.

Input and Output Formats

- Input Format:

  The input will mainly consist of user keyboard inputs for moving and rotating the falling tetrominoes. These inputs will be in the form of keystrokes, such as arrow keys or specific letter keys.

- Output Format:

  The output will be displayed on the user interface, showing the updated game board, score, and any relevant messages or notifications to the player.

User Interface

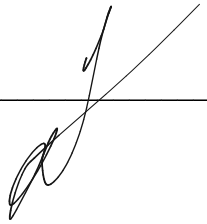
- Interface Type: Graphical User Interface (GUI)
- Interface Description:

The GUI will provide a visual representation of the game board and falling tetrominoes. It will include components such as a grid-based game board, score display, and upcoming tetromino preview. The player will interact with the game using keyboard inputs to move and rotate the tetrominoes.

Interactivity

1. User input: The player will be able to control the falling tetrominoes using keyboard inputs.
2. Real-time updates: The game board, score, and other relevant information will be updated in real-time as the game progresses.
3. Dynamic behavior: The position and rotation of the falling tetrominoes will be dynamically adjusted based on user input and game rules.

By submitting this form, I confirm that the information provided is accurate and represents my original work for the programming semester project.

- Signature:  Date: 15.05.2023