

BLM1011 Introduction to Computer Science

Semester Project

Due 29/12/2019 – 23:59

*** The presentations will be on 30th December at 14:00 in D-B26. You must attend to the presentations. The list will be announced on Monday morning.**

Instructor: Assist. Prof. M. Amaç GÜVENSAN

Project Description: Design a program, which a user could play the “TETRIS” game.

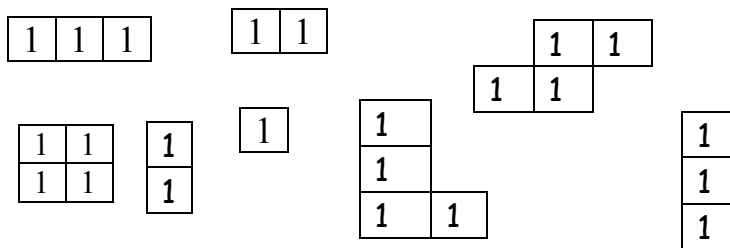
About TETRIS: Tetris[®] is the addictive puzzle game that started it all, embracing our universal desire to create order out of chaos. The Tetris game was created by Alexey Pajitnov in 1984—the product of Alexey’s computer programming experience and his love of puzzles. In the decades to follow, Tetris became one of the most successful and recognizable video games, appearing on nearly every gaming platform available.

The goal of Tetris is to score as many points as possible by clearing horizontal lines of Blocks. The player must rotate, move, and drop the falling Tetriminos inside the Matrix (playing field). Lines are cleared when they are filled with Blocks and have no empty spaces.

As lines are cleared, the level increases and Tetriminos fall faster, making the game progressively more challenging. If the Blocks land above the top of the playing field, the game is over.

Project Details:

- Your program should ask the size of the game board.
- Your program should create different pieces randomly at each round.



- Your program should rotate the given piece if the user demands.
- The user would give the (x,y) coordinates for placing the left up corner of the given puzzle piece.
- The program would place the given puzzle piece to the available most bottom part of the game board.
For example: The given block is

X	X	X
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If the user would give the x and y coordinates as (1,8), the block should be placed at (7,8) as given below

							X	X	X
1	1			1		1	1		
1		1	1	1			1	1	1
1		1	1	1			1	1	1

- If any horizontal line is full with puzzle pieces, your program should break the line and let all the pieces placed in the upper line fall down until a piece occurs.
- Your program should also calculate the points obtained from the aforementioned lines.
- Your program also should save the highest score.
- The program should end if the upperline of the game board consists of any puzzle pieces.
- The user could terminate the game, whenever he/she wants.

Recommendations:

- I would suggest to create a MENU for this game.
- Start with ease pieces to implement the game.
- Do not forget to show intermediate steps using printf. Someone should understand that your program could run without an logical error. For example, You should display the former and latter state of your game board after any placement of a puzzle piece.

Submission

1. Do not submit after submission deadline. **Due 29/ 12/ 2019 – 23: 59**
2. Collaboration on any assignment is strictly prohibited. Submitted assignments are automatically checked for similarities. Infractions will be given a zero for the entire assignment.
3. Assignments **MUST** be submitted via the given link below.
<https://forms.gle/RvXeC3W1v7Frjc8D7>
4. You should submit one .rar file including the PDF file and the source file of your program.

Example File Name : [18011001.rar](#)

Content

A .rar file which contains the following documents

- A source file written in C
- An PDF file which contains
 - a. **Question** - A brief description
 - b. **Solution** - An explanation
 - d. **Analysis** - Screenshots for different cases

Do not forget to prepare a cover page which should include

- Course Name
- Course Group
- Instructor Name
- Assignment Number

- Delivery Date of the Assignment
- Student Id
- Student Name and Surname
- Signature

You can draw your flowchart only using a drawing tool (such as LucidChart, DrawIo, etc.).
Do not draw it with your hand.

ATTENTION

- **Assignments that don't comply with submission rules will NOT be evaluated. "NO EXCEPTION"**