

# BLM1011 Introduction to Computer Science

## Semester Project

### Version - 1

**Due 11/01/2021 – 23:59**

**Instructor: Assist. Prof. M. Amaç GÜVENSAN**

**Project Description:** Design the board game, namely Parcheesi/Ludo/Kızma Birader.  
<https://www.oyunbilim.com/kutu/kizma-birader/>

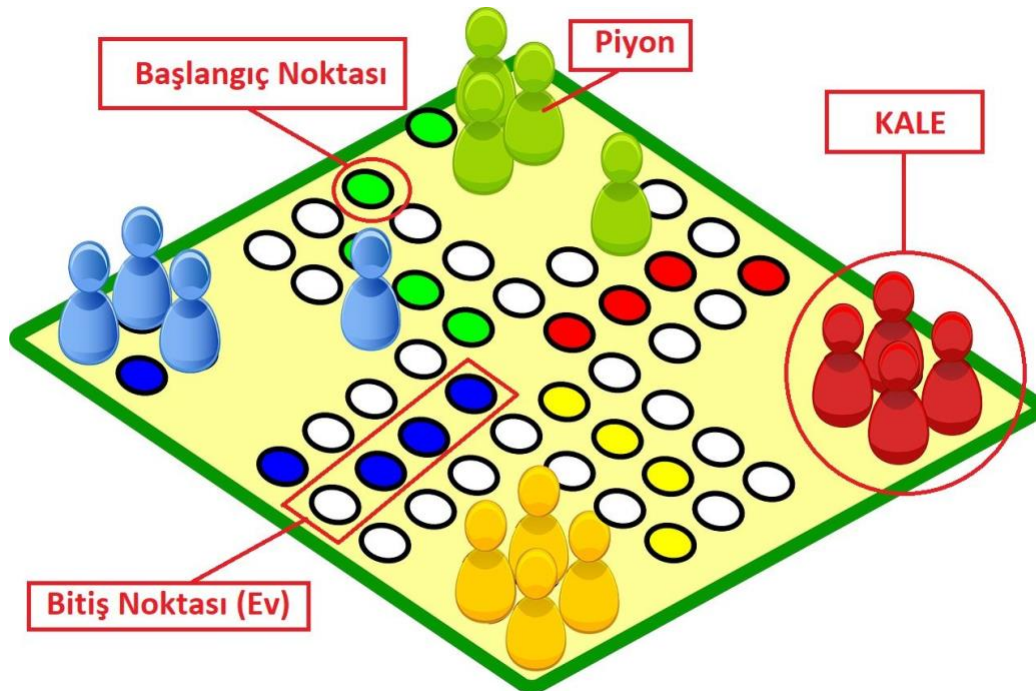
**About Parcheesi:** *Parcheesi* is typically played with two dice, four pieces per player and a gameboard with a track around the outside, four corner spaces and four *home paths* leading to a central end space. The most popular *Parcheesi* boards in America have 68 spaces around the edge of the board, 12 of which are darkened *safe spaces*. Each corner of the board contains one player's *nest*, or starting area.

1. Each player has 4 pieces.
2. There might be 2, 3, or 4 players (Red (R) ,Yellow (Y), Green (G) and Blue (B))
3. At each round the respective player rolls the single dice (1-6).
4. Each piece is allowed to leave from the nest, if the dice shows “6”.
5. At each cell, only one single piece could exist.
6. Each player is allowed to place any number of his/her pieces into the raceway.
7. If the player rolls six, he/she could either place a piece into the board from the nest or play any piece on the board.
8. A piece could move forward even if there is a piece of any opponent on its way.
9. If a piece stops at the same place of another piece of the same player, the player is not allowed to move it. He/she should wait for his/her next turn.
10. Nobody could hurt a piece if it reaches at the final destination.
11. If any piece could reach to the location of another players’ piece, the piece should return to its nest.
12. The player whose all 4 pieces reach at final destination becomes the WINNER.

### Project Details:

You should exploit a matrix to simulate the board.

HY1	HY2		P	P	P		HR1	HR2
HY4	HY3		P	DR3	P		HR4	HR3
			P	DR2	P			
P	P	P	P	DR1	P	P	P	P
P	DY3	DY2	DY1		DB1	DB2	DB3	P
P	P	P	P	DG1	P	P	P	P
			P	DG2	P			
HG1	HG2		P	DG3	P		HB1	HB2
HG4	HG3		P	P	P		HB4	HB3



- Do not forget to ask the user the number of players at the beginning
- Please use the given board.
- All actions should be displayed as a text message to the users.
  1. For example, “the R1 should return to its nest.”
  2. “The Y2 should wait for the next round”

- All the given rules should be implemented.
- Use a randomize function for the dice.
- Do not forget to DISPLAY the winner, if a user successfully finishes the game.

### Recommendations:

- I would suggest to create a MENU for this game.
- Start with easy 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 round of a player.

### Submission

1. Do not submit after submission deadline. Due 11/01/2021 - 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 [online.yildiz.edu.tr](https://online.yildiz.edu.tr)
4. You should submit one .zip file including the PDF file and the source file of your program.

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

### 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”