National University of Computer and Emerging Sciences

Department of Computer Sciences

CL-217
Programming Fundamentals
Project

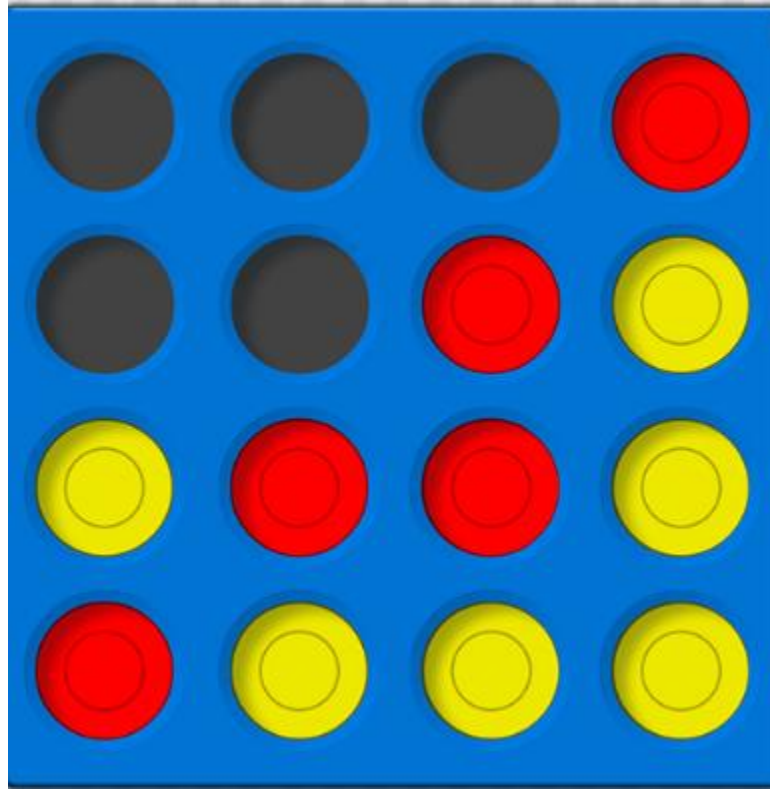| Instructor	M. Hannan Farooq
Semester	Spring 2022

Objectives:
- All concepts of programming fundamentals
- Control Structure (Selection)
- Control Structure (Repetitive/ Loops)
- Function
- Array (one-dimensional, Multi-dimensional)
- File Handling

Note: Carefully read the following instructions (*Each instruction contains a weightage*)

1. Anyone found in copying the project from any other group, both the groups will get F grade in Course as well as in the Lab.
2. 2 students are allowed per group. No cross-section is allowed.
3. You must submit the whole project by one member of the group.
4. There must be a block of comments at start of code, the block should contain brief description about functionality of code. Also comment with all functions about there functionality.
5. Proper indentation of code is essential
6. Write a code in C++ language using Microsoft Visual Studio.
7. First think about statement problems and then write/draw your logic on copy.
8. After copy pencil work, code the problem statement on MS Studio C++ compiler.
9. At the end when you done your project, submit **complete project**
10. Submit your file in this format
    FirstGroupMemberRollNumber_SecondGroupMemberNumber_Project.
11. Do not copy code from any source otherwise you will be penalized with negative marks.
12. Project is divided into two deliverables.
13. In first deliverable both group members discuss complete project with each other and divided equal work(50 % work for each member) on google classroom or Microsoft teams and submit recorded audio or video link.
14. In second deliverable submit your **complete project file** with **your code copy pasted on word file with all possible output screenshots. Both project file and word file must be included in .zip file.** Make your submission on Google Classroom (Make sure your submission is completed).

Problem: Connect Four

Use this link how Connect 4 game works

https://www.youtube.com/watch?v=ylZBRUJi3UQ

Write a C++ program to create a connect Four game with the following features.

- Player Vs Player
- **Play_game() function** (This menu function will further gave me choice to select between which module of game user want to play)
- **Credits()** (who created the game)
- **Instructions/rules ()** function
- **Score() function** (The score function will evaluate the score. Whenever USER check the score menu from the main menu platform it should display the number of games won by player 1 & player 2 , and number of drawn games .)

NOTE : Play_game() function will further include a function as

- **Player Vs Player**
    - **Player1 should have 'A'**
    - **Player2 should have 'B'**
- Your game will start from a toss, you have to create a Bool function as **bool toss()** (who won the toss to have the first turn .
- Game will not end until someone won or game is drawn.
- You will Create a function as winning_condition(). In this you will check all the possible combination of winning condition. Similarly you will create lose_condition() & draw_condition()
- You have to create a bool player_turn() function ,which will change the player turn after every valid move.

Proper code indentation will hold extra marks !

Best of luck ☺

You are done with your Project, submit on Google Classroom at given time.