

UNIVERSITY OF LAGOS
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
B.Sc. (Hon.) Computer Engineering Degree Examination
CPE311: COMPUTER PROGRAMMING LANGUAGES

FIRST SEMESTER

2023/2024 SESSION

INSTRUCTION:

TIME: $1\frac{1}{4}$ HOURS

Attempt the Question

Use Microsoft Visual Studio 2010 or Higher

Build all your programs in a multifile organizational scheme

Question 1

Consider the Ludo Game Board shown in Fig. Q1. The board has four houses namely, Red, Yellow, Green and Blue and each house has four members. The game is played by either two or four players. Write a C Program that create an appropriate datatype "Colour" for the coloured houses such that during assigning houses to players only the identified houses could be assigned. The user-defined datatype Colour is an element of the structure "House" that has also four members and keeps also the status of the class either true or false when assigned to a player. Let the elements of the House structure be initialized to Red, 4 and false for the color, member and status, respectively, using a constructor. The "Player" structure incorporates the name of a player and the house assigned to him/her.

In the main function, declare variables for player's name, number of players, type of color of type char and four of instances of players. Let the variables player's name, number of players and type of color be used to ask the game master to configure the game for playing using appropriate string handling command. The program should not allow multiple assignment of the same house to different players; however, a player can be assigned two houses in any order.

At the end of the assignment, the program should display the results of the action of the game master on the screen in a tabular form having headings "Name", "House" and "Member". Finally, deduct 1, 2, 3 and 4 members from player 1, player 2, player 3 and player 4, respectively, as named by you and again display the new results on the screen. The solution should have at least two separate files, declaration and definition files.

The solution should be organized with a header file containing all user-defined datatypes, an assignment function for the configuration of the game and the print function for displaying results as definition files.

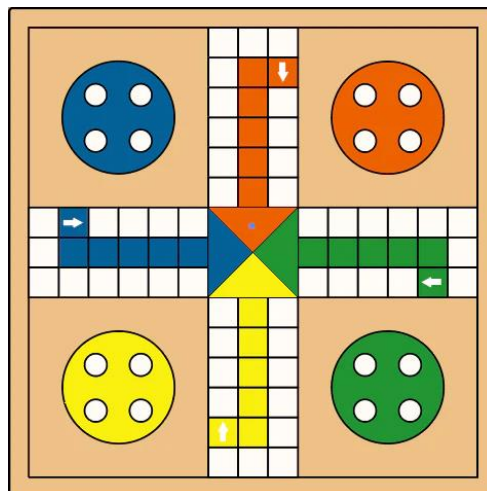


Fig. Q1. Ludo Game Board