Problem Description: Multiplayer Bingo Game in Python

Objective:

Develop a multiplayer Bingo game in Python where one player is the user and the other player is the computer. The game will be played on a 5x5 grid, but only 16 random numbers (ranging from 1 to 25) will be placed on each board. The remaining 9 cells will be empty. The game continues until either the user's or the computer's board has all numbers struck off, determining the winner.

Requirements:

1. **Game Setup:**
    - The game consists of a 5x5 grid for both the user and the computer.
    - Only 16 random numbers from the range 1 to 25 need to be placed on each grid.
    - The remaining 9 cells on each grid will be empty.
2. **User Input:**
    - Allow the user to input 16 unique numbers between 1 and 25 for their board.
3. **Computer Setup:**
    - The computer will randomly assign 16 unique numbers between 1 and 25 to its board.
4. **Game Play:**
    - The game starts with the user selecting a number from their board that has not yet been struck off.
    - If the selected number is present on either the user's or the computer's board, it will be struck off.
    - The turn then passes to the computer, which selects a number from its board that has not yet been struck off.
    - If the computer's selected number is present on either the computer's or the user's board, it will be struck off.
    - The turns alternate between the user and the computer until one player has all their numbers struck off, declaring them the winner.
5. **Winning Condition:**
    - The first player (either the user or the computer) to have all their 16 numbers struck off wins the game.

Implementation Steps:

Step 1: Generate an Empty Grid [3pts]

Write a function `emptyGrid(rows, cols)` which creates a new 2D list (called a grid) with `rows` number of rows and `cols` number of columns. The value of each cell should be `None`, indicating an empty spot. Return the new 2D list.

Step 2: Populate the Grid with Numbers [5pts]

Write a function `populateGrid(grid, numbers)` which takes a grid and a list of numbers, and places those numbers randomly in the grid. Ensure that only 16 cells are filled with numbers and the remaining cells are left empty (`None`).

Step 3: User Input for Grid [3pts]

Write a function `getUserNumbers()` which prompts the user to input 16 unique numbers between 1 and 25. Validate the input to ensure there are no duplicates and all numbers are within the specified range.

Step 4: Computer Grid Setup [5pts]

Write a function `generateComputerNumbers()` which randomly selects 16 unique numbers between 1 and 25 for the computer's grid.

Step 5: Display the Grid [3pts]

Write a function `displayGrid(grid)` which prints the grid to the console, showing numbers and empty cells distinctly.

Step 6: User Turn [5pts]

Write a function `userTurn(user_grid, computer_grid, number)` which takes the user's selected number and marks it as struck off (e.g., replace the number with `X`) if it is present on either the user's grid or the computer's grid.

Step 7: Computer Turn [5pts]

Write a function `computerTurn(user_grid, computer_grid)` which randomly selects a number from the remaining numbers on the computer's grid and marks it as struck off if it is present on either the computer's grid or the user's grid.

Step 8: Check for Winner [4pts]

Write a function `checkWinner(grid)` which checks if all 16 numbers on a grid have been struck off. Return `True` if there is a winner and `False` otherwise.

Step 9: Game Loop [20pts]

Write the main game loop which alternates turns between the user and the computer, using the functions above, and checks for a winner after each turn.

The following is the console Output

```
Welcome to Multiplayer Bingo!

Please enter 16 unique numbers between 1 and 25 for your Bingo board:
> 1 3 5 7 9 11 13 15 17 19 21 23 24 25 2 8

Your Bingo Board:
 1  3  2  *  7
 5  9 11  8  *
 * 13  * 15  *
17  * 19  * 21
23 24 25  *  *

Computer's Bingo Board:
 5 10  *  * 25
 4  * 14  9  12
 *  8  * 18  *
 2  3  *  * 22
 1  * 11  12  24

Your turn! Pick a number to strike off:
> 3

Your Bingo Board:
 1  X  2  *  7
 5  9 11  8  *
 * 13  * 15  *
17  * 19  * 21
23 24 25  *  *

Computer's Bingo Board:
 5 10  *  * 25
 4  * 14  9  12
 *  8  * 18  *
 2  X  *  * 22
 1  * 11  12  24

Computer's turn!
Computer selects: 14

Your Bingo Board:
 1  X  2  *  7
 5  9 11  8  *
```

```
 * 13  * 15  *
17  * 19  * 21
23 24 25  *  *

Computer's Bingo Board:
 5 10  *  * 25
 4  * X  9  12
 *  8  * 18  *
 2  X  *  * 22
 1  * 11  12  24

Your turn! Pick a number to strike off:
> 7

Your Bingo Board:
1  X  2  *  X
 5  9 11  8  *
 * 13  * 15  *
17  * 19  * 21
23 24 25  *  *

Computer's Bingo Board:
  5 10  *  * 25
 4  * X  9  12
 *  8  * 18  *
 2  X  *  * 22
 1  * 11  12  24

Computer's turn!
Computer selects: 22

Your Bingo Board:
1  X  2  *  X
 5  9 11  8  *
 * 13  * 15  *
17  * 19  * 21
23 24 25  *  *

Computer's Bingo Board:
 5 10  *  * 25
 4  * X  9  12
 *  8  * 18  *
 2  X  *  * X
 1  * 11  12  24
```

...

Your turn! Pick a number to strike off:
> 25

Your Bingo Board:
```
 X  X  X  *  X
 X  X X  X  *
 * X  * X  *
X  * X  * X
X X X  *  *
```

Computer's Bingo Board:
```
  X 10  *  * X
 4  * X  X  X
 *  X  * X  *
 X  X  *  * X
 X  * X  X  X
```

Congratulations! You have struck off all numbers. You win! Bingo!