**Name: Session:**

**Programming II**

**Lab Exercise 1.31.2023**

**Complete the following programs. When you have completed each program, submit a copy of your documented source code. Your documentation should include at a minimum name, assignment number (i.e. Lab Exercise 1.31.2023 Problem 1) and a sample output of your program run.**

1. Write a console-based program for a lawn-mowing service. The lawn-mowing season lasts 20 weeks. The weekly fee for mowing a lot under 400 square feet is $25. The fee for a lot that is 400 square feet or more, but under 600 square feet, is $35 per week. The fee for a lot that is 600 square feet or over is $50 per week. Prompt the user for the length and width of a lawn, and then display the weekly mowing fee, as well as the total fee for the 20-week season. Save the file as Lawn.cs.
2. Write a console-based application that asks a user to enter an IQ score. If the score is a number less than 0 or greater than 200, issue an error message; otherwise, issue an “above average”, “average”, or “below average” message for scores over, at, or under 100, respectively. Save the file as IQ.cs.
3. You can create a random number that is at least min but less than max using the following statements:

Random ranNumberGenerator = new Random();

int randomNumber;

randomNumber = ranNumberGenerator.Next(min, max);

Write a console-based program that generates a random number between 1 and 10. (In other words, min is 1 and max is 11.) Ask a user to guess the random number, then display the random number and a message indicating whether the user’s guess was too high, too low, or correct. Save the file as GuessingGame.cs.

1. In the game Rock Paper Scissors, two players simultaneously choose one of three options: rock, paper, or scissors. If both players choose the same option, then the result is a tie. However, if they choose differently, the winner is determined as follows:

* Rock beats scissors, because a rock can break a pair of scissors.
* Scissors beats paper, because scissors can cut paper.
* Paper beats rock, because a piece of paper can cover a rock.

Create a console-based game in which the computer randomly chooses rock, paper, or scissors. Let the user enter a character, ‘r’, ‘p’, or ‘s’, each representing one of the three choices. Then, determine the winner. Save the application as RockPaperScissors.cs.

1. Create a console-based lottery game application. Generate three random numbers, each between 1 and 4. Allow the user to guess three numbers. Compare each of the user’s guesses to the three random numbers and display a message that includes the user’s guess, the randomly determined three-digit number, and the amount of money the user has won as follows:

|  |  |
| --- | --- |
| Matching Numbers | Award ($) |
| Any one matching | 10 |
| Two matching | 100 |
| Three matching | 1000 |
| No matches | 0 |

Make certain that your application accommodates repeating digits. For example, if a user guesses 1, 2, and 3, and the randomly generated digits are 1, 1, and 1, do not give the user credit for three correct guesses—just one. Save the file as Lottery.cs.