Assessment

Instructions:

Please read through introduction carefully before starting test. The test must be completed with end to end testing to qualify for evaluation.

You are also allowed to use internet for your reference.
You are required to save your work in a new folder on the desktop and name it as “DD/MM/YYYY – NAME”

Name: JIMMUEL M. REALIGUE

Date: DECEMBER 5, 2023

Introduction

There are total of TWO questions and ONE short quiz in this test. First question is for front-end, second question is for back-end and third question is a short quiz. All questions and quiz are expected to be completed but you may want to start with question that you are more comfortable with. In case that you cannot complete all questions, it is also important to explain during interview what you would have been done if you are given more time.

Below is the marking scheme and point allocated to Question 1 and 2:

Q1. Front-End (30)

Description	Score (Total:30)
How close the HTML is comparing with mockup	10
Correct text to be alerted in web browser	5
Quality of codes (HTML, Javascript / JQuery)	15

Q2. Back-End (70)

Description	Score (Total:70)
Understanding of requirements and implementation	30
Use of Object-Oriented Programming (OOP) (Class, Inheritance, Encapsulation)	20
Code quality (Variables, Methods, Code usages, Code flow)	20

Q1. Front-End

In this front-end question, the following skills will be assessed:

- HTML
- CSS
- Javascript/JQuery

Tool can be used:

- Visual Studio
- Visual Code

Please refer to below mockup and try to follow it as close as possible. Also it has to be mobile responsive following wireframe. You are free to use any of frameworks or extensions.

Additionally, please create Javascript function to find title of the event and alert in web browser when link 'WEBSITE' is clicked. The function should not be hard coded to alert title but has to be relative to the link 'WEBSITE'

The final output will be assess via following criteria:

- How close the HTML is comparing with mockup
- Correct text to be alerted in the web browser
- Quality of the codes (HTML, Javascript / JQuery)

Mockup:

Note

Mobile Responsive Wireframe:

SOURCE CODE FOR Q1: https://github.com/KoroSensei01/OCBC.git

Q2. Back-End

In this back-end question, the following skills will be assessed:

- Object Oriented Programming (OOP)
- C# and .NET
- Requirement Understanding
- Class Design
- Code Quality

Tool can be used:12122

- Visual Studio

Create a simple text-based console application with the following requirements.

1.You as a human player will face a computer AI in the mortal game of rock-paper-scissors.

2. At the start of the game, system will ask the player to enter their name.

3. Both the player and the computer will have 3 health points/hit points each.

4. During each turn, the player will first provide an input to choose from one of three available actions. For example; ‘q’ for rock, ‘w’ for paper and ‘e’ for scissors. (Note: You can also decide to define the inputs as you see fit in your implementation.) After the player input, the computer will randomly pick from the three available choices as well. z

5. The result of the turn will then be automatically decided based on their choices:
- Rock will beat the scissors, paper will beat the rock, and scissors beats the paper.
- If the player beats the computer during the turn, the computer will lose 1 health. If the computer won the turn, the player will lose 1 health.
    - If both the player and the computer picked the same choice, the turn will become a tie. Neither of them will lose health and the game continues to next turn.

6. At the end of every turn, the game has to display the result as output on screen as follows.
- The choices both the player and the computer made
    - Whether the player won or lost the current turn
    - And the remaining health for both player and computer

7. The game goes on until either the player or the computer lost all 3 health points and dies.

Additional requirements for bonus. (Note: Analyze these requirements carefully before you proceed.)

8. There will be a fourth input option only for the player, to use a magical potion in their possession. The potion can restore 1 health point if the player choose to drink it during the input phase. If the player chose to drink the magical health potion, the computer will not take any actions and skips the current turn.
9. The same magical potion will save the player from death. In other words, if the player is left with only 1 health point, and the computer just made the winning choice over the player during a turn, there is a 50% chance that the potion will automatically be used (provided of course that the potion hasn't been used throughout the entire game). This is quite similar to the previous requirement, except this only happens by chance at the end of the turn after the computer made its choice and the player health is about to reach 0.

CODE:

```
    using System;
using System.Collections.Generic;

namespace RockPaperScissorsGame
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.WriteLine("Welcome to Rock-Paper-Scissors Game!");
         Console.Write("Please enter your name: ");
         string playerName = Console.ReadLine();

         int playerHealth = 3;
```

```
    int computerHealth = 3;
    bool usedPotion = false;
    Random random = new Random();
    Dictionary<char, string> choices = new Dictionary<char, string>
    {
        {'q', "Rock"},
        {'w', "Paper"},
        {'e', "Scissors"},
        {'p', "Potion"}
    };

    while (playerHealth > 0 && computerHealth > 0)
    {
        Console.WriteLine($"\nPlayer Health: {playerHealth}");
        Console.WriteLine($"Computer Health: {computerHealth}");

        if (playerHealth == 1 && !usedPotion && random.Next(2) == 1)
        {
            Console.WriteLine("You have been saved by a magical potion!");
            playerHealth++;
            usedPotion = true;
            continue;
        }

        Console.Write("\nChoose your action (q for Rock, w for Paper, e for Scissors, p for
Potion): ");
        char playerChoice;
                                                while (!choices.ContainsKey(playerChoice =
char.ToLower(Console.ReadKey().KeyChar)))
        {
            Console.WriteLine("\nInvalid choice. Please choose again.");
                Console.Write("Choose your action (q for Rock, w for Paper, e for Scissors, p
for Potion): ");
        }
```

```
        Console.WriteLine();

        if (playerChoice == 'p')
        {
            if (!usedPotion)
            {
                    Console.WriteLine("You drink the magical potion and restore 1 health
point.");
                playerHealth++;
                usedPotion = true;
                continue;
            }
            else
            {
                Console.WriteLine("You have already used the potion.");
                continue;
            }
        }

        char computerChoice = choices.Keys.ElementAt(random.Next(choices.Count));
        Console.WriteLine($"Computer chooses: {choices[computerChoice]}");

        if (playerChoice == computerChoice)
        {
            Console.WriteLine("It's a tie!");
        }
        else if ((playerChoice == 'q' && computerChoice == 'e') ||
                 (playerChoice == 'w' && computerChoice == 'q') ||
                 (playerChoice == 'e' && computerChoice == 'w'))
        {
            Console.WriteLine($"{playerName} wins this turn!");
            computerHealth--;
        }
        else
```

```
            {
                Console.WriteLine("Computer wins this turn!");
                playerHealth--;
            }
        }

        if (playerHealth == 0)
        {
            Console.WriteLine($"\nSorry, {playerName}! You lost the game.");
        }
        else
        {
            Console.WriteLine($"\nCongratulations, {playerName}! You won the game!");
        }

        Console.ReadKey();
    }
  }
}
```

Q3. Short Quiz

Please write your answer below each question

1) Some months have 30 days, and some have 31, how many months have 28 days? All months have 28 days but February is the only month that consists of 28 days.

2) What number comes next 10, 9, 60, 90, 70 and 66? 67

3) Which number does not belong to this series 1,1,2,3,4,5,8,13,21? 4

4) Who will be the shortest among all of them? Binny

a. Roger is as tall as Oliver
b. Binny is shorter than Tony
c. Tony is taller than Oliver
d. Roger is shorter than Binny

5) By using number 7,3,7,3 can you get number 24 by using any mathematical signs (+, – , x, /)? Yes.