Programming Assessment

The purpose of this exam is to provide a better understanding of your design, programming, and analytical skills. As with any programming project, you will need to balance the amount of time spent on development against the quality of your result. We ask you not to spend more than two calendar days.

Please email a Github/Bitbucket/GitLab link with your solution and a readme file explaining if it is required to follow any additional step to run it.

You can use .NET or .NET Core for the back-end and SQL Server for the database structure. If you have previous experience with .NET Core, we encourage you to go down this path.

Usage of any ORM or Micro-ORM are both allowed.

For the front-end you can use ReactJS or Angular. If you have previous experience with Angular, we encourage you to go down this path.

You can add any external component you need.

Evaluation

We are aware that the time for developing the solution is short so please consider that for this instance your work will be evaluated in this order:

- Back-end
    - Architecture quality of the solution
    - Use of design and architecture patterns for each scenario.
    - Use of best practices (SOLID)
    - Code

    - Extensibility.
    - Dependency Injection
    - Unit testing
    - Optional
        - Azure DB and WebAppService.
- Front-end
    - Architecture.
    - Responsive design.
    - Use of best practices.
    - Unit testing.
- Easy startup

Game of drones game specification

In *Game of Drones* there are two players trying to conquer each other.

Players take turns to make their move, choosing Paper, Rock or Scissors. Each move beats another, just like the game “Paper, rock, scissors”.

Like so:

- Paper beats Rock
- Rock beats scissors
- Scissors beat Paper

The first player to beat the other player 3 times wins the battle.

The website must have the following behavior:

1. Inputs for each player to enter his name. (Only two players) and a start button to begin the game.
2. Once the game begins, each player chooses one of the possible moves.
    a. First, player1 pick his move, then player2.
    b. The system computes the result of the play.
        i. (The game happens on the same computer for both players. It is not required to create a true online game. Both players share the computer, and the system asks each player for their move assuming the other player looks away while the other selects the move)
    c. The result of each round should be displayed somewhere in the screen, so that players can know the game score while they are playing.

3. Step #2 repeats until one of the players wins three times. This player will be the winner of the game.
4. Once the game has finished, a Play Again button shows to start a new game.

Game statistics

The result of each game should be stored to keep track of games won by each player. We would like to know how many games a player has won and show them in a page.

Implementing this considering that there could be a large number of results will be a plus.

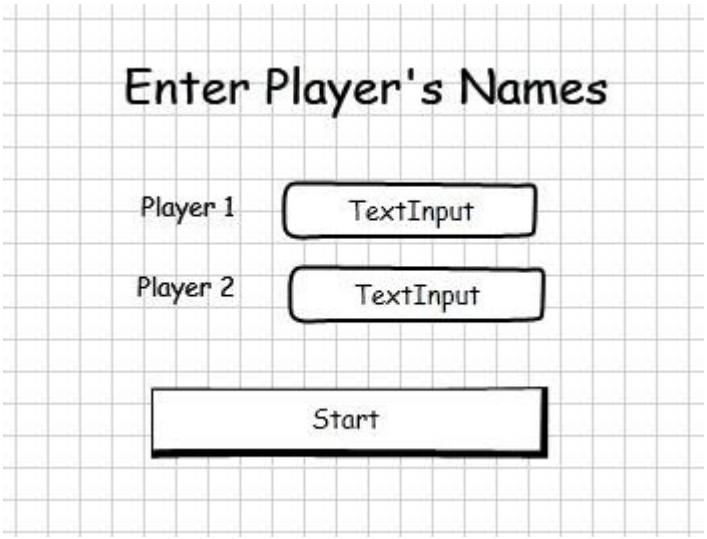
Logging

We would like to keep track of any action as well as any failure throughout the application.

Mocks

Here is a mock of each screen. You are free to modify the look and feel of the screen as you please.

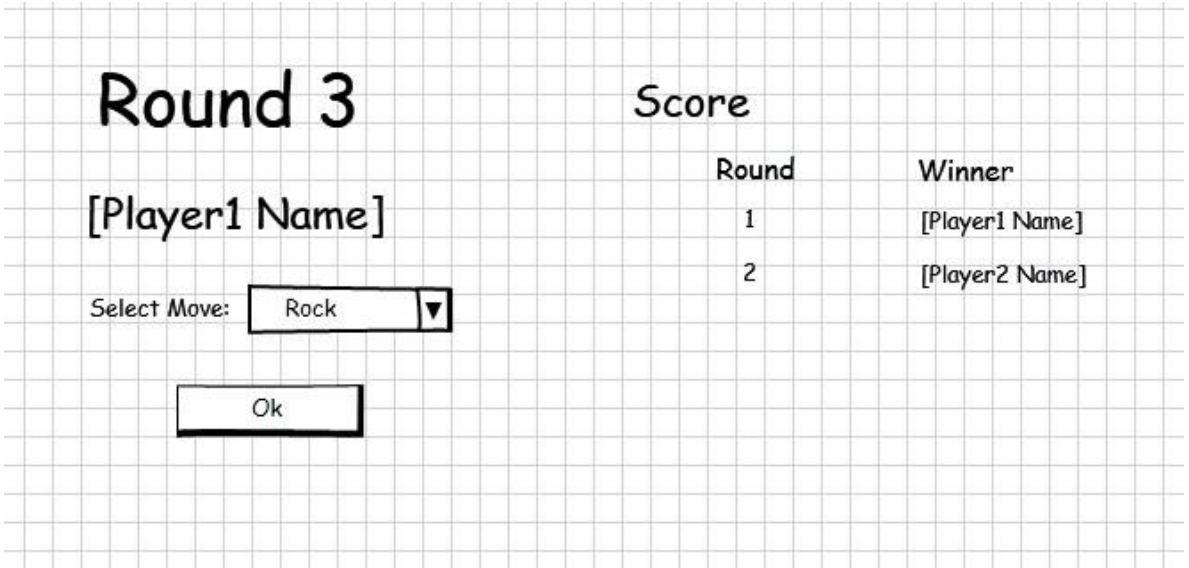
To start a game, the system asks for the name of each player.



The game starts with Round1. The system asks Player1 for a move. Replace [Player1 Name] with player's name.

After Player1 selects a move, then the system asks Player2 for a move (same round).

Winners of each round are displayed somewhere on the screen. Here we see Round #3, and to the right the score of the previous rounds:



When a player reaches three wins, he is the winner, and the following screen displays:

Clicking the Play Again button, the systems takes you to the first screen.