Rock Paper Scissors
Requirements Specification

Contents

1. Introduction

This document provides details of Rock Paper and Scissors web application project as required by the client, Sydney Institute of technology. This document covers:

- Required technologies
- How to play the game
- Design and user interface specifications

2. Required technologies

The required technologies to be used in the web application are:

- HTML
- CSS
- Bootstrap
- JavaScript

This web application must be developed using one page only having the file name: index.html.

The developer must use object-oriented programming in JavaScript. Please refer to the class diagram with the file name rpsClassDiagram.pdf.
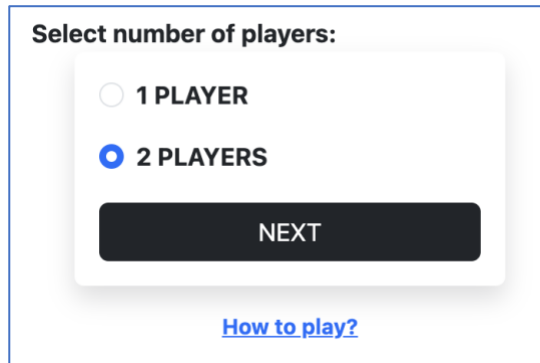
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3. How to play

This classic game involves two players: player 1 and player 2. Player 1 is a human, while player 2 can be either another human or computer.

Note that this section focuses on how to play the game, not the design of the game. The design of the game is covered in the next section.

Procedure:

1. Select number of players.

The first screen prompts the user to select the number of players. Choices are either one or two players as seen in the diagram.

If the user selects one player, then the player plays against the computer. Otherwise, the player plays against another player.

If the user selects the 'Next' button, it will prompt the user to enter player name(s) and select number of rounds as detailed in step 2.

When 'How to play?' link is clicked, a new tab opens showing a pdf document on how to play the game.

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2. Enter player name(s), select number of rounds, and start the game.

One player

Enter player 1 name:

Ethan

Select number of rounds:

○ ONE

● THREE

○ FIVE

○ SEVEN

START GAME

Two players

Enter player 1 name:

Ethan

Enter player 2 name:

Fiona

Select number of rounds:

○ ONE

● THREE

○ FIVE

○ SEVEN

START GAME

Player(s) enters their names and then select number of rounds of either one, three, five or seven. Below are the rules to win the game based on the number of rounds selected:

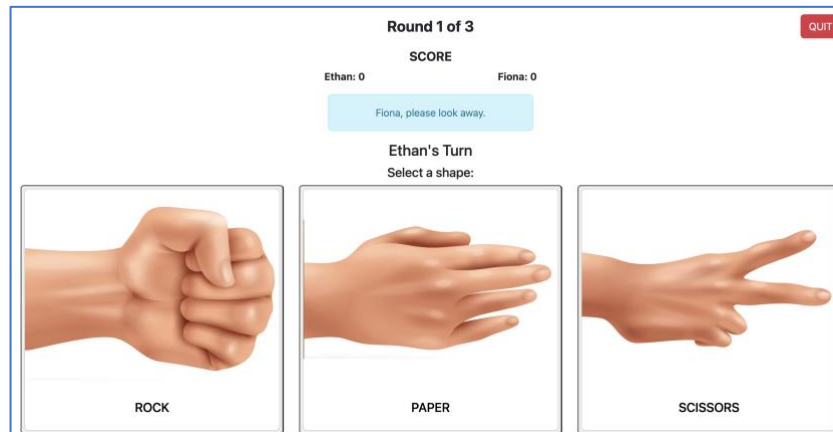| Total rounds	Rules
One	The player that wins the round wins the game.
Three	The first player that wins two rounds wins the game.
Five	The first player that wins three rounds wins the game.
Seven	The first player that wins four rounds wins the game.

For example, if the total round in a game is seven, and one player has already won four, the other player will never catch up even when they win the remaining rounds.

Draw
- A round can result to a draw if both players select the same shape.
- If the game results to a draw, then the players will play a one-round game. For more details about a game resulting to draw, please see step 8.

When the user clicks the 'START GAME' button, then the game starts.

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3. Player 1 turn.

Player 1 chooses a shape by clicking it. Shapes are rock, paper and scissors as seen in the diagram. Once done, then player 2 chooses a shape.

Other information shown in the diagram are:
- Current round of the total round. As seen in the diagram, it is Round 1 of 3.
- Score. Player that wins a round increases their score to one.
- Look away message.
   - The other player waiting for their turn has to look away. As seen in the diagram above, it is player 1's turn (Ethan), so player 2 (Fiona) has to look away.
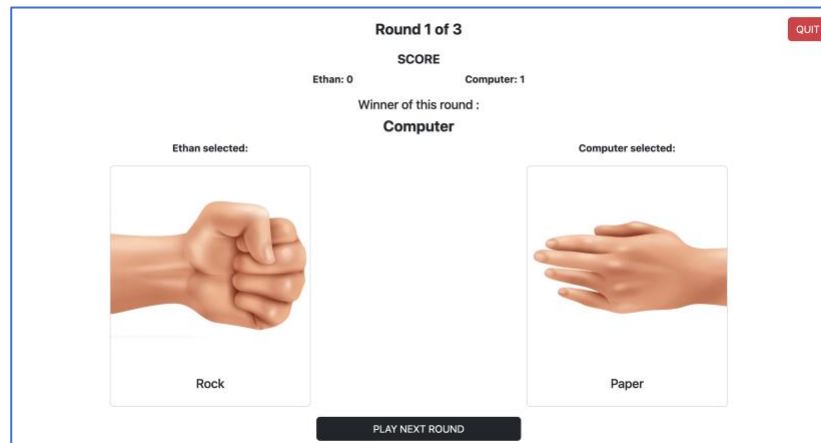   - The message will not be visible if the game is a one-player game.

4. Player 2 turn.

One-player game	Player 2 will be the computer. After player 1 selects a shape, the computer will select a random shape between rock, paper, and scissors in the background. The diagram in step three will not be displayed.
Two-player game	Player 2 will be another human player. The procedure is the same as step 3.

After player 2's turn, next screen will display the round winner.

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5. Display round winner.

The winner of the round is declared and the shapes each player has selected is displayed as seen in the diagram.

In the game of rock paper and scissors:
- rock beats scissors
- scissors beat paper
- paper beats rock.

As seen in the diagram above, the computer won the round because computer selected paper and player 1, Ethan, selected rock.

The black button in the diagram above is labelled 'PLAY NEXT ROUND' as the winner is not yet determined. This is because only one round out of three has been concluded. Clicking this button will direct the players to play the next round.

Once the winner has been determined, then the black button will be labelled 'DISPLAY WINNER'. Clicking this button will display the game winner.
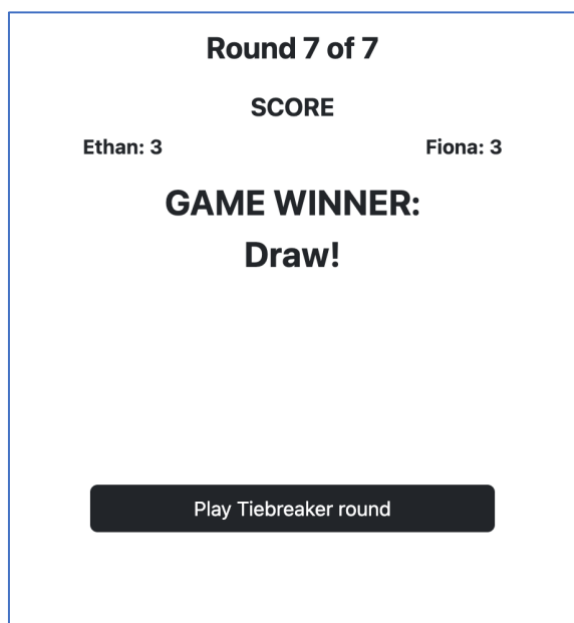
In the diagram above, since the computer has won the round, then the score of the computer gets updated from zero to one.

6. Display game winner.
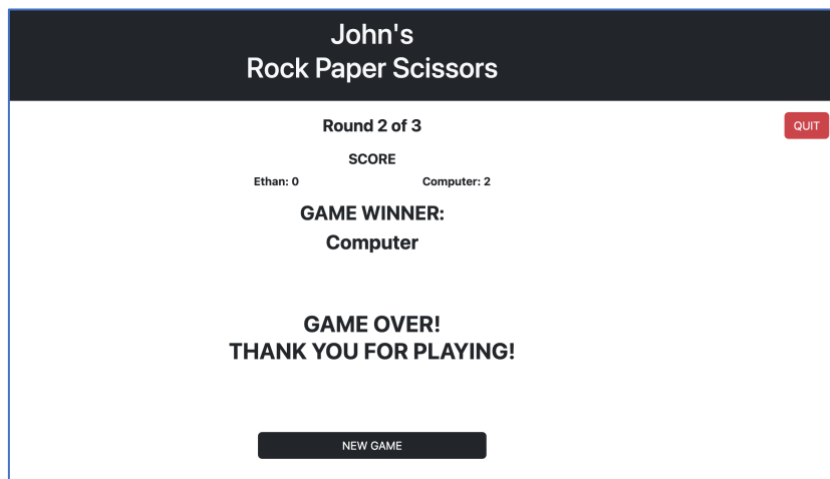
As seen in the diagram above, the computer won the game. Clicking new game redirects the users to the first window: Select number of players.

7. If game is draw.

As seen in the diagram above, the game ends in draw. Hence one tiebreaker rounds need to be played to display the winner. Clicking the 'Play Tiebreaker round' button will keep prompting the players to play one-round game until a winner has been determined.

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4. Design and user interface

The developer must develop the Rock Paper Scissors game web application that resembles the design specified in this section as well as section 3. No elements and functionalities specified in this document must be removed nor modified. The developer may add more features though.

Rock paper scissors web application game must only be in one page with file name: index.html. The page must be responsive to mobile phone and desktop computer.

The page is made up of two parts: header and main as shown:
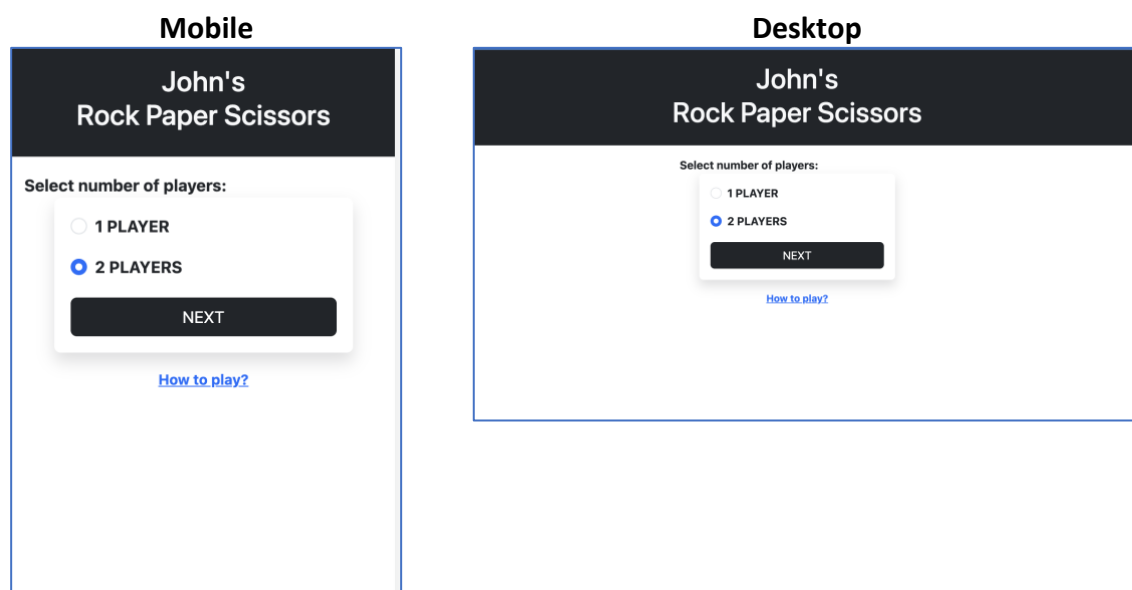
Header
As seen in the diagram above, the header part is the one with black background with the title of the game in white font. The title of the game consists of the developer's nickname in possessive form followed by 'Rock Paper Scissors'. For example, in the diagram above, the name of the developer is John, therefore the title of the game is: John's Rock Paper Scissors.

Main
As seen in the diagram above, the main part is the one with white background. Inside the main part is the 'Select number of players' section. The section inside the main part varies.
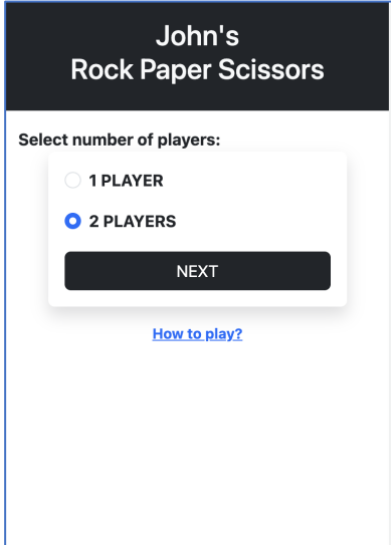
The main part must consist of multiple sections, which are:
1. Select number of players
2. Enter player name(s), select number of rounds, and start the game
3. Player turn

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4.   Display round winner
5.   Display game winner

Select number of players

Mobile	Desktop
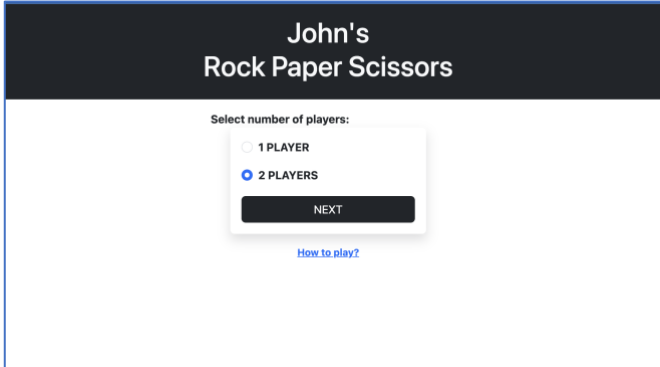
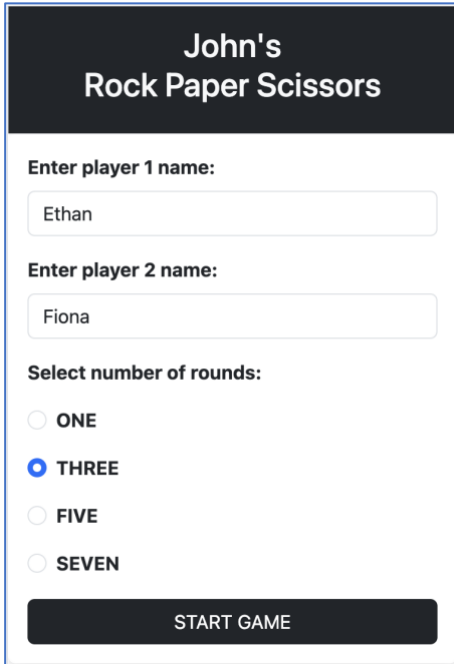This section is the default section. The game stops and redirects to this section if:
- The user clicks the title of the game
- The user clicks the QUIT button
- The user clicks the NEW GAME button

Enter player name(s), select number of rounds, and start the game
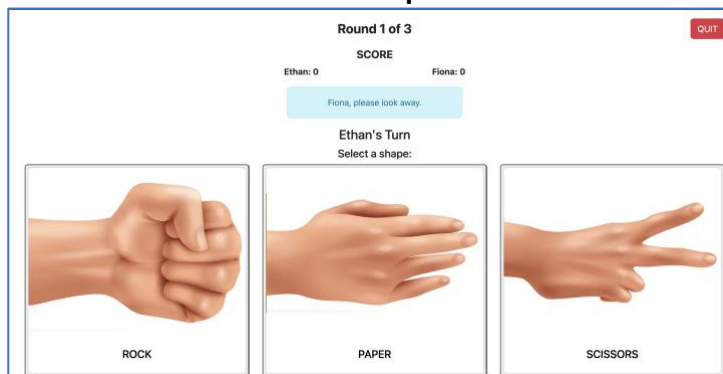
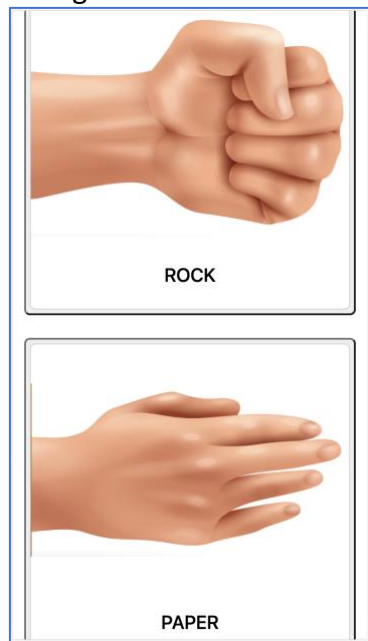| Mobile	Desktop
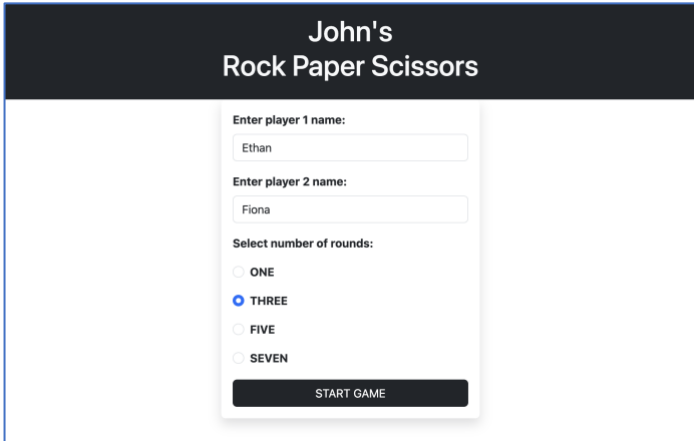
Player turn
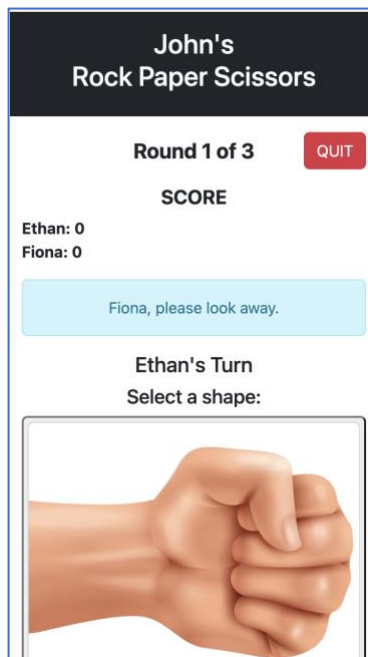
Mobile	Desktop

Scrolling down:

QUIT button.
When the user clicks the QUIT button, then the game ends and goes back to the 'Select number of players'

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Shape images

All shape images have been provided in the images folder. Each shape has versions for player 1 and 2. Please see below:

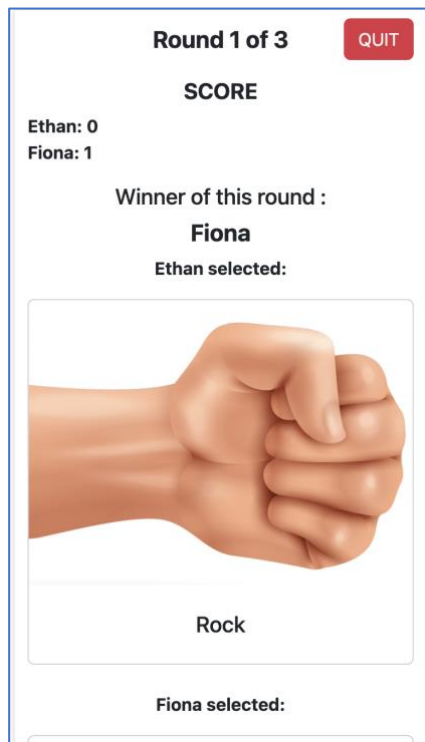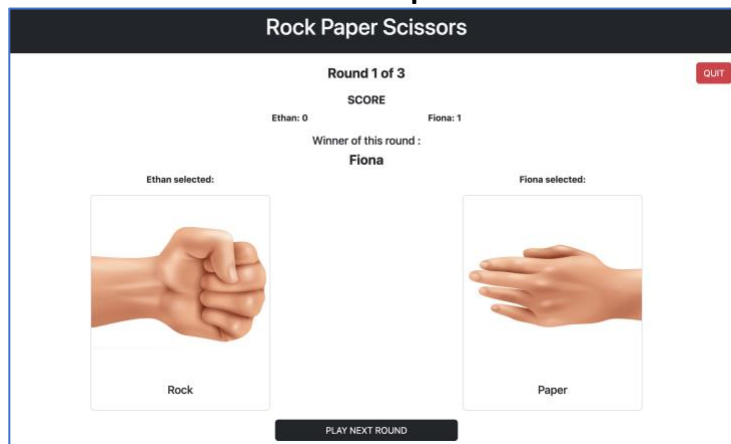| Shape	Player 1 Image	Player 2 Image
Rock		
Paper		
Scissors		
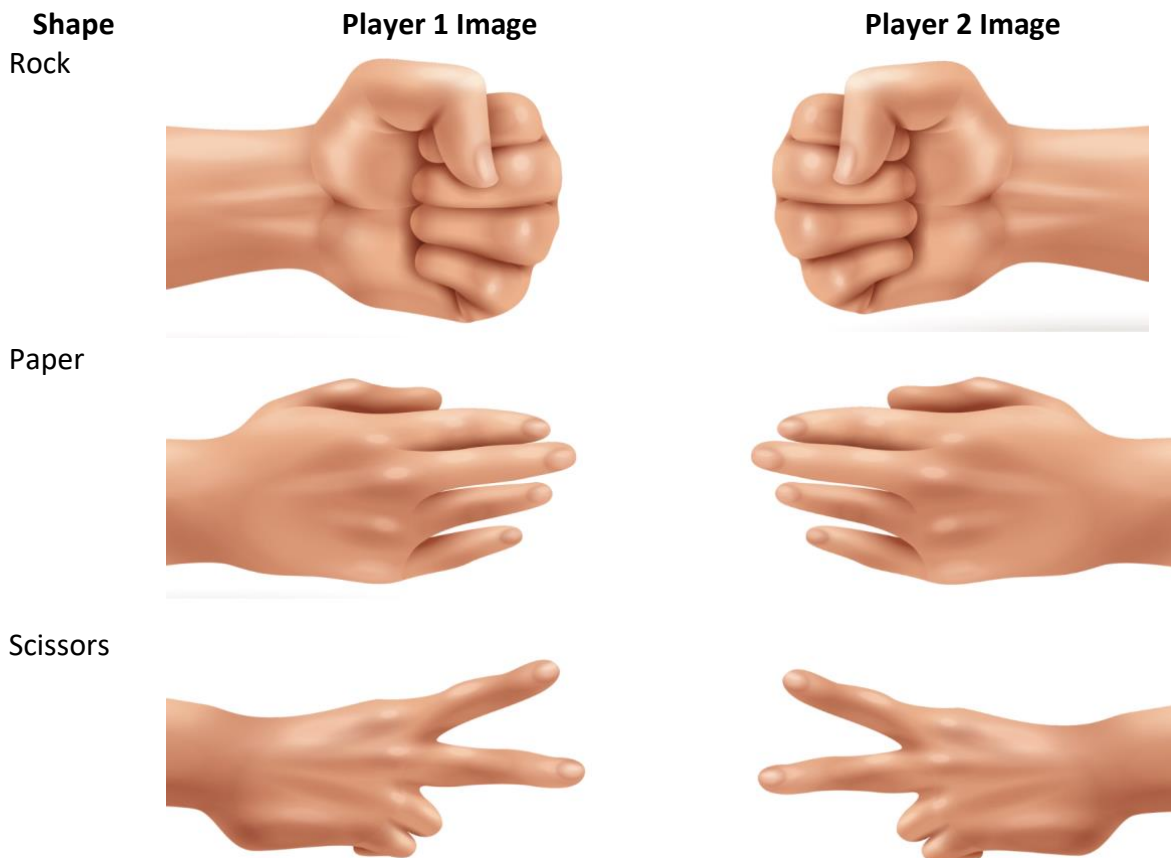
Shape button

All three shapes must be displayed in the sequence rock, paper and then scissors. As seen above, the shape button is square shaped containing the shape image and shape name. If it's player 1 turn, all player 1 images must be displayed. If it's player 2 turn, all player 2 images must be displayed.
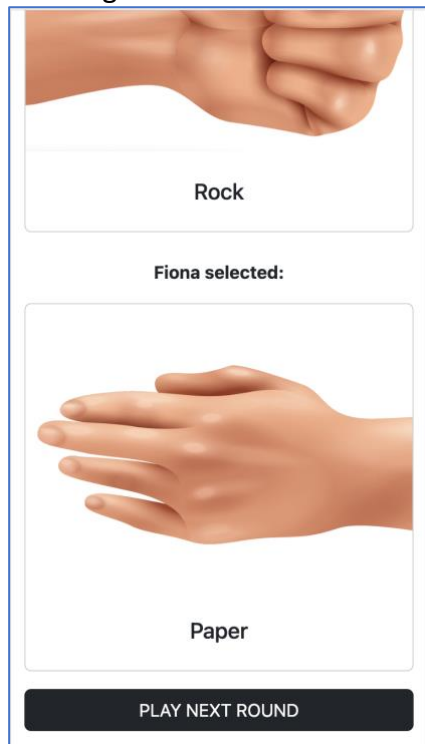
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Display round winner

Mobile

Round 1 of 3   QUIT

SCORE

Ethan: 0
Fiona: 1

Winner of this round :

Fiona

Ethan selected:

Rock

Fiona selected:

Desktop

Rock Paper Scissors

Round 1 of 3   QUIT

SCORE

Ethan: 0   Fiona: 1

Winner of this round :

Fiona

Ethan selected: Fiona selected:

Rock   Paper

PLAY NEXT ROUND

Scrolling down:

Rock

Fiona selected:

Paper

PLAY NEXT ROUND

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Display Game Winner
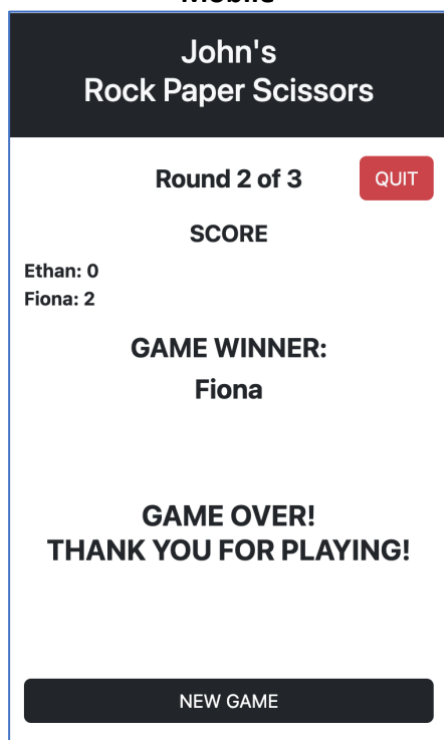
Mobile	Desktop
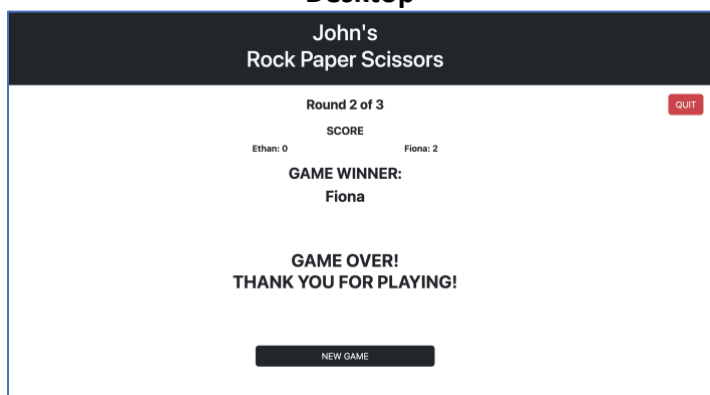
Only one section must be displayed. For example, if 'Display Game Winner' section is displayed, then the other sections must be hidden.