

# CMPE 202

## Software Systems Engineering

Section 47

Spring 2024  
Instructor: Ron Mak

### Assignment #4

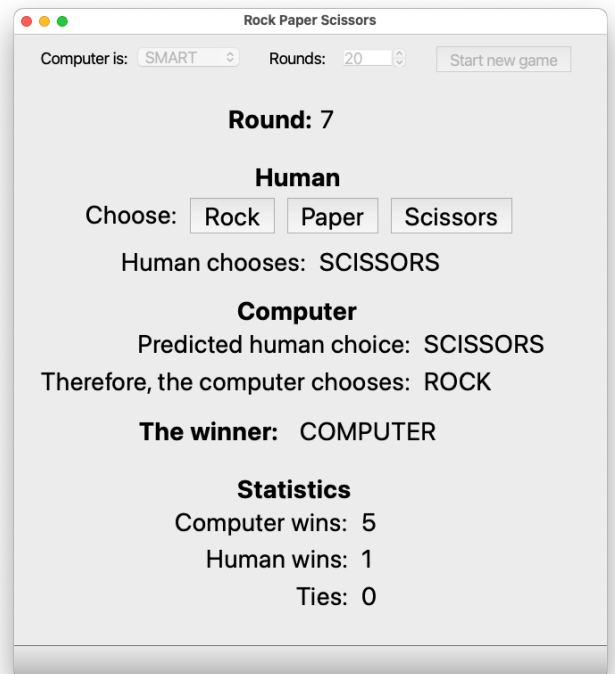
**Assigned:** Tuesday, March 12  
**Due:** Tuesday, March 26 at 5:30 PM  
Team assignment, 200 points max

#### GUI-Based Rock-Paper-Scissors Game

Use **Qt6** to create a GUI-based version of your RPS game program from Assignment #3. This version of RPS should include the “smart” computer choice algorithm with the simple machine learning.

The image below shows how the GUI can appear. Yours can be different, but it should contain at least these elements:

- Allow the user to set the choice algorithm and the number of rounds.
- Display the current round number.
- Allow the user to enter a choice for each round.
- Display the computer’s prediction of the human’s choice for the round.
- Display the computer’s choice for the round.
- Display who the winner is (or is it a tie) of the round.
- Display the number of human and computer wins and the number of ties.



## Written report

In a short report, describe:

- What events does your game application generate?
- How did you use callback functions to handle the events?
- How were you able to reuse code from Assignment #3 now that you have inversion of control?

Include a screenshot of your GUI in your report. Include your main game window and any dialog boxes.

## What to turn in

Make a zip file of all your C++ source files and your report. Name the file after your team name.

Submit it into Canvas: **Assignment #4**. This is a team assignment. Each member of the team will receive the same score.

## Rubric

Your program will be graded according to these criteria:

Criteria	Max points
<ul style="list-style-type: none"><li>• <b>GUI components:</b><ul style="list-style-type: none"><li>○ Allow the user to set the choice algorithm.</li><li>○ Allow the user to set the number of rounds.</li><li>○ Display the current round number.</li><li>○ Allow the user to enter a choice for each round.</li><li>○ Display the computer's prediction of the human's choice for the round.</li><li>○ Display the computer's choice for the round.</li><li>○ Display who the winner is (or is it a tie) of the round.</li><li>○ Display the number of human and computer wins, and the number of ties.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• <b>160</b><ul style="list-style-type: none"><li>○ 20</li><li>○ 20</li><li>○ 20</li><li>○ 20</li><li>○ 20</li><li>○ 20</li><li>○ 20</li><li>○ 20</li></ul></li></ul>
<ul style="list-style-type: none"><li>• Report with screenshot(s).</li></ul>	<ul style="list-style-type: none"><li>• <b>20</b></li></ul>
<ul style="list-style-type: none"><li>• The grader is able to successfully play several games.</li></ul>	<ul style="list-style-type: none"><li>• <b>20</b></li></ul>