San José State University
Department of Computer Engineering

CMPE 135
# Object-Oriented Analysis and Design
Spring 2021
Instructor: Ron Mak

## Assignment #5

Assigned: Tuesday, March 23
Due: Wednesday, April 14 at 11:59 PM
Team assignment, 100 points max

**GUI-Based RPS Game**
Use **wxWidgets** to create a GUI-based version of your RPS game program from Assignment #4. This version of RPS should include the simple machine learning, and it should save the frequency table in a file.

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

- Display which round
- A way for the user to enter a choice for each round.
- The computer's prediction of the human's choice for the round.
- The computer's choice for the round.
- Who the winner is (or is it a tie) of the round.
- The number of human and computer wins, and the number of ties.
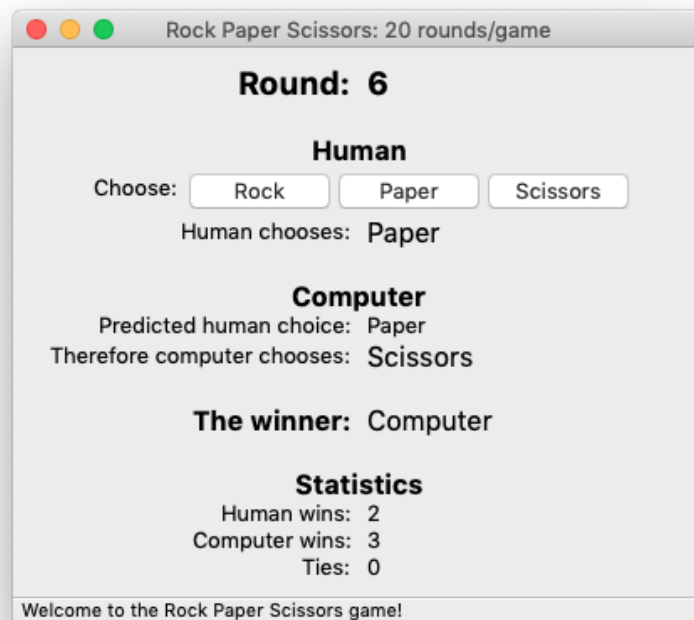
### Menu commands
Your game application should have the following menu items:

- About
- Exit
- Start a new game

The default is 20 rounds per game but provide a way for the human player to change that number before the start of the next game.

### 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 #4 now that you have inversion of control?

Include a screen shots of your GUI in your report. These should include your main game window and any menu items and dialog boxes.

### What to turn in
Make a zip file of all your C++ source files and your report.

Submit it into Canvas: **Assignment #5.** 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 |
|---|---|
| • **GUI components:** | • **60** |
|    ○ Display which round |    ○ 10 |
|    ○ A way for the user to enter a choice for each round. |    ○ 10 |
|    ○ The computer's prediction of the human's choice for the round. |    ○ 10 |
|    ○ The computer's choice for the round. |    ○ 10 |
|    ○ Who the winner is (or is it a tie) of the round. |    ○ 10 |
|    ○ The number of human and computer wins, and the number of ties. |    ○ 10 |
| • **Menu items:** | • **15** |
|    ○ About |    ○ 5 |
|    ○ Exit |    ○ 5 |
|    ○ Start a new game |    ○ 5 |
| • The human player can change the number of rounds per game. | • **5** |
| • Screen shots of your GUI. | • **10** |
| • The grader is able to play several games. | • **10** |