CS225 Software Development

Class Project

FURPS+

**Functionality**

* Have a game description greeting the player.
  + A simple welcome message for the user.
* When removing a team from a predicted bracket slot, the team is also removed from any Higher rounds of the bracket
  + Each team that is removed from a certain position is also removed from their position further ahead.
* Higher-Ranked teams have a higher chance of winning
  + Teams ranked will have a slight advantage when points are randomized to mimic a realistic game based off of their rank.
* Create a login screen
  + Prompts user to enter credentials before filling out a bracket.
  + System should check to see if there is a bracket saved already, if so load the saved bracket. Otherwise an empty bracket should be generated.
  + Place the username in a dropdown menu once the user fills out a bracket this will allow the brackets to be stored and returned.
* First 32 matches are pre-determined
  + Teams compete all year to make this tournament therefore the first round games are already decided.
* Once Logged-in load 1 empty bracket with 64 teams
  + This bracket will be where the user decides which teams will win
* User clicks a team they think will win the game
  + Once a team is clicked the team will automatically populate the next rounds bracket spot.
* Provide a finalize functionality
  + When the user finalizes their bracket, it will be saved in a serialized format
  + Once finalize button is selected the “Simulate Tournament” button should appear.
* Simulate Tournament Button.
  + This is what simulates the actual tournament, all games are simulated. After simulation display each games score AND display how many points user earned based off of correct predictions
  + Each game is randomized (50-125 points)
* Save user name associated with their bracket
  + Each user should be associated with a bracket, this will allow the user to look at which teams their competition has selected to win.
  + Store User names in a drop down list, once selected the selected users bracket will be displayed.
* User with the most amount of points wins the tournament.
  + Each correct prediction earns a certain amount of points depending on a certain round of the tournament. These are the user’s points which will be added and compared to other users brackets. The highest amount of user points wins the tournament.
* After simulation is complete navigate the user to the ranking table
  + This table consists of “User Name” “User Points” “User Winning Team” this table should be sorted by the amount of user points from highest to lowest. The Highest points win the tournament.

**Usability**

* Scalable GUI
  + Elements in the GUI should resize with an adjusted size.
* Reset Button
  + When this button is pressed the users bracket is erased so they can start from scratch
  + Once the finalize button is selected the reset button should not be visible.
* Display the simulated scores for each game
  + In each games individual bracket the teams scores should be displayed so it is clear to the user why a certain team won and the other lost.
* Delete Button
  + Upon clicking removes current user’s data from the application

**Reliability**

* Validate Bracket before finalizing
  + Ensure that all necessary fields are filled out, if not display a message to the user asking them to complete the bracket before finalizing.
* Catch input output exceptions
  + Catch for incorrect log in credentials
* Adds password encryption
  + Each user’s password has a hash algoritm sha-256 that will verify whether or not the user entered the correct password based on the calculated hash

**Performance**

* Program should support up to 4 players
  + Each tournament will consist of 4 users.

**Supportability**

* Change teams in bracket
  + Allow the user to remove a previously selected team before finalizing bracket. Allow user to make edits to their bracket whenever as long as the finalize button has not been selected.
* Documentation on how to use software
  + Once user is logged in display an Instructions button which will give the user step by step instructions on how to use the software. Make this as simple as possible so the user does not get confused.
* Added Color
  + Adds color to the program to make the application look nicer

**PLUS**

* Providing stats for each team that influence the situation
  + Teams that are ranked in the top 10 will have a minor advantage against other teams to provide a real life simulation.
* Providing the option to compare the predicted bracket to the actual tournament.
  + Compare the users bracket (the simulated one) with the actual tournament winners from 2017.
* Display a tooltip next to the winning team
  + Tooltip will display the college information of the winning team once the mouse is has hovered over the tooltip icon.
  + Display tooltip with info of every team.
* Correctly predicted teams to be displayed with green text
  + If the user correctly chose a team to win the team name should be displayed in green.
* Incorrectly predicted teams to be displayed with red text
  + If the user incorrectly chose a team to win the team name should be displayed in red.