CS225 Software Development

Class Project

FURPS+

**Functionality**

Original by Katherine, edited by Phoenix.

* What will the system do?
  + Login Screen
    - A game description greeting the user.
    - User enters a username and password.
    - Creates a new account if username is unused.
    - Saved usernames shown in a dropdown.
    - Account is retained between sessions.
    - Entering credentials allows access to a previously created bracket.
    - All passwords are stored as a hash value.
  + Bracket Prediction
    - Either starts with an empty bracket or the bracket associated with an account.
    - User can construct their predicted bracket.
      * Teams can be moved forward and back on the bracket at will.
    - Can show team stats and information.
    - Bracket can be finalized once filled out which makes the prediction eligible for the leaderboard.
  + Simulation
    - Shows the winners of each match including their score.
    - Team’s scores are weighted based on their rank.
    - Calculate points earned by each user from correct predictions.
      * The later the matchup the higher the points.
      * Points earned for each matchup will be shown to user.
    - Show a user leaderboard of all accounts with finished brackets and their scores.
* When will it do it?
  + Login Screen
    - On program start.
  + Bracket Prediction
    - After a valid login is entered or account is created.
  + Simulation
    - When the simulation button is pressed after the bracket has been finalized.
* What kind of computation or data transmission will be performed?
  + The program computes winning teams using weighted randomizations.
  + Calculates scores for player brackets using round based weighted points.

**Usability**

* Scalable GUI
  + Elements in the GUI should resize once the GUI frame is resized.
* Undo
  + Users can erase a bracket or division of bracket, so they can start from scratch.
* Display Simulated Match Information
  + The scores of every match will be shown.
  + The winners and losers of each match will be highlighted to indicate the result.
* Feedback
  + Inactive buttons are greyed out.
  + If a button has been misused a popup will occur letting the user know what happened.

**Reliability**

* Bracket Validation
  + Ensure that all necessary fields are filled out before the user finalizes their bracket.
* Handling Missing Files
  + If any of the files required to run the program are missing, the program will inform the user.

**Performance**

* File Reading
  + Bracket objects corresponding to a given account must be stored and read in from files.
  + Team information is read from files.
  + Data quantity should be relatively small given the simplicity of the files.

**Supportability**

* Syncing Simulations
  + Have a universal event that runs a single simulation that corresponds to all brackets.
  + This would better simulate the idea of a single March Madness season taking place.

**PLUS**

* Customization
  + The user can customize the name of their account.
  + Each user creates a custom bracket that is saved between sessions if finalized.