DTSC 450 Project Submission
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Goals of the project:

My goal for this project is to create a Shiny application focused around the Men's NCAA March Madness Tournament that users can interact with to look at past tournament results, overall team statistics, individual player statistics, and lastly compare team statistics. My vision for the shiny app can be seen here. My shiny app will be an interactive application for basketball fans, analysts, and people who are interested in finding patterns and gaining insights from past NCAA tournament data.

The application will feature a navigation bar where users are able to select the following tabs, Compare Team, Statistics, Tournament History, and About.

The Compare Teams tab will allow users to select a year/season, teams, and a team statistic they would like to compare. Using the user input, the application will display a bar graph where users can compare the team statistic they selected amongst the teams they chose.

The Statistics Tab will allow users to select a year/season and team. Using the user input, the application will display two data tables. The first data table will display the variables TEAM, RECORD, WINS, LOSSES, ADJOE, ADJDE, EFG_O, EFG_D, TOR, TORD, ORB, DRB, FTR, FTRD, 2P_O, 2P_D, 3P_O, 3P_D, ADJ_T, WAB, POSTSEASON, SEED, and YEAR. The description for these variables can be found here. The second table will display each player on the roster, and the following variables for each player: Player (Name), Jersey Number, Class, Height, Weight, Minutes, Points, Rebounds, Assists, Steals, Blocks, and Turnovers. These values will be per game statistics.

The Tournament History tab will allow users to select a year/season and a placement. Using the user input, the application will display a table of all the teams eliminated in selected round/placement and year. The variables SEED, TEAM, RECORD, and POSTSEASON will only be visible in this table.

Lastly, the About tab will give a brief overview of each tab and the features it allows users to use.

Altogether, this project will integrate sports data and interactive visualization, allowing basketball enthusiasts to gain insight into the Men's NCAA March Madness Tournament. By using Shiny's tools and capabilities, users will be able to take a closer look at past tournament results, compare teams, and analyze team and player statistics in a unique manner.

*[Project Inspiration](#)

        The project I am referencing is the type of application I would like to model mine after. I will reference code and more so the overall structure of how they constructed the user interface when designing my application.

Data description:

        I will be using a college basketball dataset from [Kaggle](#) which provides me with team statistic data from 2013-2023. This data set has 24 variables and 3,523 observations. I used data from [Sports Reference](#) as well to gather roster and player statistic information. This data set has 8 variables and 9398 observations.

Software:

        I used RStudio to manipulate, clean, and visualize data. I used google sheets to collect and store data.

Deliverables:

- Mockup ([click here](#))
- Data Files (cbb.csv, team_statistics.csv, roster_info.csv)
- Data Cleaning (team_statistics.Rmd)
- Shiny App (app.R file)