Project Title: What-If Olympics

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Project Description

Project Summary:

Our project uses the 2021 tokyo olympics dataset from Kaggle to create a multi-paged user-friendly website. The first page creates data visualizations for various categories that the user may be interested in searching. Examples include medal count per country, winners in particular sports, a particular athlete's performance, the members of a country's team, the number athletes per country, the number of athletes per discipline, the distribution of gender on sport, etc. The second page is a "what-if table" in which the user can edit the person's ranking to see how it changes other variables – such as their country's ranking – and use Matlab and Google Cloud platform to visualize real-time changes in data.

Information about the app:

Description:

We want to tell the user what score each player got during the 2021 Olympics in Tokyo and the medal rank for countries. For each player, we tell the user what medal that person got, from which one. For each country, we tell the user how many gold, silver, and bronze medals that country got, and its ranking among all countries. We want to solve the following problems. How would the medal rank change if some athletes did better or worse? What if some athletes change their nationality to another country?

Usefulness:

This application is useful because it allows users to review different aspects of the 2021 Olympics that interest them. For example, someone might be very interested in learning about the distribution of medals across the countries that competed. Someone else might have a favorite athlete and want to see how well they performed in different events. We'll not only display this information in tables, but we'll also build graphs and other visualizations to help the user better understand the results.

Another really useful aspect of our application is being able to answer questions like, "If athlete x's ranking was different, what effect would that have on the overall medal count of their country? What would happen to the medal count of country y if one of their athletes changed nationality to country z?" By editing the data in real time, we can see the changes to our visualizations and make new analyses from them. All of these are questions that people often have about the Olympics that our application will be able to answer.

There may be similar applications that allow people to view the medal count or performance of particular athletes in their events. However, where our application differs is the ability to answer "what-if" questions to see how making changes to an athlete's ranking or nationality could impact other aspects of the data we're interested in.

Realness:

Our data is from Kaggle and describes records during the 2021 olympics in tokyo (LINK: https://www.kaggle.com/datasets/arjunprasadsarkhel/2021-olympics-in-tokyo/code?resource=download). There are 5 main data tables in this kaggle dataset.

- "Teams" lists - the country for which the team played for, the discipline (or sport) the team played, the National Olympic Committee for which the team played for (abbreviated as NOC), and the Event (whether it was a men's game, a women's game, or a co-ed game).
- "Medals" lists - the global ranking of the country based on the number of medals won and the points valued at each medal type, the country name, the number of gold medals the country won, the number of silver medals the country won, the number of bronze

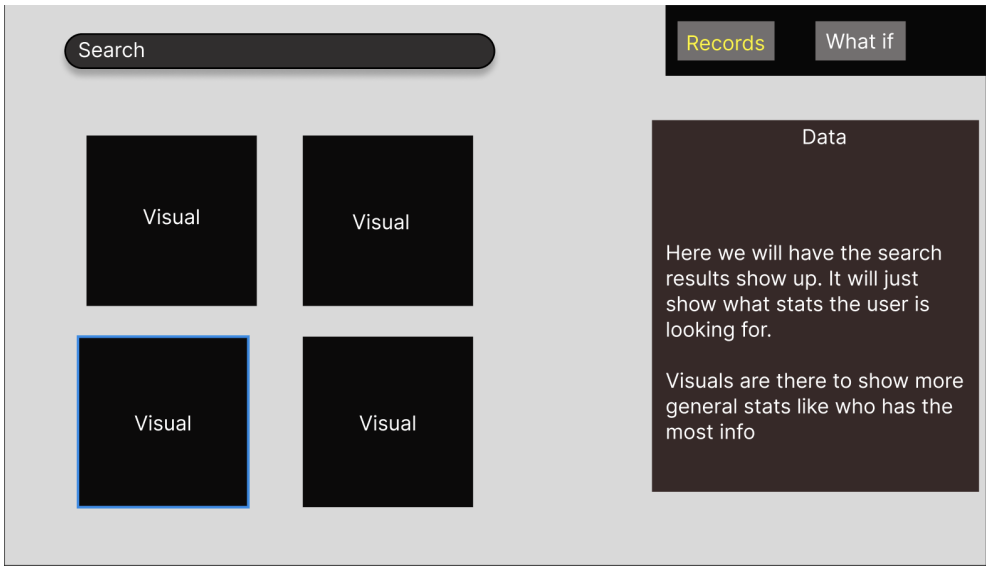
medals the country won, the total number of medals the country won, and the adjusted rank of the country based on the total number of medals

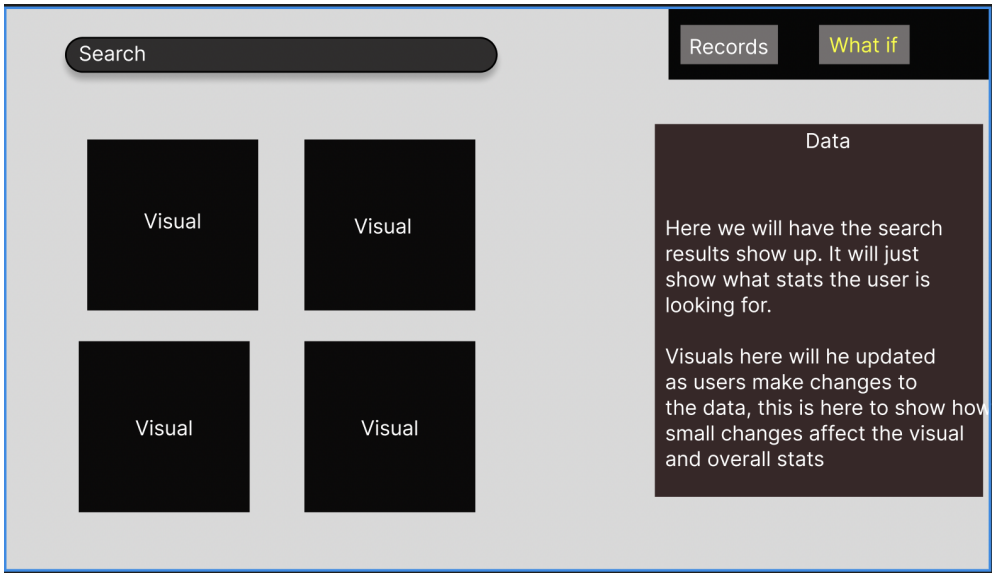
- "EntriesGender" lists - the discipline (or sport) in which the athletes competed in, the number of female athletes who competed in that sport, the number of male athletes who competed in that sport, and the total number of athletes who competed in that sport
- "Coaches" lists - the name of the coach, the National Olympic Committee for which the coach's team played for (abbreviated as NOC), the discipline (or sport) in which the coach was involved in, and the Event (whether it was a men's game, a women's game, or a co-ed game) → empty/null values are present in this data table
- "Athletes" lists - the name of the athlete, the National Olympic Committee for which the athlete played for (abbreviated as NOC), and the discipline (or sport) in which the athlete competed in

Functionality:

- Records:
    - This page will be purely for searching and a few visuals. There will roughly 4-5 visuals displayed on the page. These visuals will be from the data we have. The user can search and on the right hand side of the page the results will show up. The search will look for anything that contains the term that was searched.
- What if:
    - The functionality for this would be the same as records but slightly more. Once the results are shown on the right hand side of the screen. Only now they will have the option to edit,delete or even add a new record. From there the visuals on the right hand side would also change based on the edit made.

Low Scale UP mock up:





Ideal (current) workload distribution:

Name	**Work to do:**
Maninder	Schema Construction in GCP - Set up GCP environment by executing our schema specifications and commands on the database Python-Matlab visuals using GCP - Creating visuals using matlab and database - Learn how to make visuals change with changes to data
Shloaka	Data Entry - Perform inserts to populate our database tables - Decide which rows of data to include/exclude User Edits - Handle database modifications by the user: add new data, delete existing row, and insert new ones
Emily	DDL SQL commands - Write the commands to construct entity and relationship tables based on the schema we agree upon User Searches - Handle database searches by the user and optimization - Bring to front-end for display in visualizations / graphics
Hansen	Schema Constraints - Incorporate constraints and assertions on our schema - Create triggers to preserve integrity of data after modifications User interface - Creating react pages - Create the user interface for search, visuals and results
Everyone	Schema Specification - Decide on entities and relationships to include in database, including attributes and keys - Build and normalize ER diagram Visual Specification - Decide what type of visuals to display