Team18 Project Proposal

Project Title: 2021 Olympic Visualizer

Describe what data is stored in the database.
We plan to store the 2021 Tokyo Okympic's Data in our database. The data is from https://www.kaggle.com/datasets/arjunprasadsarkhel/2021-olympics-in-tokyo. This data set includes five CSV files including the data of Athletics, the data of Coaches, the data of EntriesGender, the data of Metals and the data of Teams. The Athletics dataset has three attributes: Name of Athletics, Country of Athletics and Discipline of Athletics. The Coaches dataset has four attributes: Name of Coaches, Country of Coaches, Discipline of Coaches and Events of Coaches (e.g. men or women, may be null). The EntriesGender dataset has four attributes: the Discipline, Number of Female Athletics in this Discipline, Number of Male Athletes in this Discipline and Total Number of Athletics in this discipline. The Medals dataset has seven attributes: Rank of the Countries based on Number of Gold Medals, Name of Country, Number of Gold Medals, Number of Silver Medals, Number of Bronze Medals, Total Number of Medals and Rank of the Country based on Total Number of Medals. The Teams dataset has our attributes: Name of Countries, Discipline of the Countries, Full Name of Countries, and Events of the discipline (men or women, solo or duet).

What are the basic functions of your web application
Our website allows users to insert, delete, update and search for specific records from the 2021 Tokyo Olympics dataset. The simple part is about to insert, delete, update and search, which are basic functions of SQL. Our complex features aim to allow users to select specific countries and generate data visualizations like bar charts to compare the proportion of different genders of each discipline.

What would be a good creative component (function) that can improve the functionality of your application?
The creative component(function) for us would be to select specific and generate data visualizations like bar charts to compare the proportion of different genders of each discipline. We plan to achieve this by getting data from the database using Python code and then generating different plots to do a summary to help users better visualize the scores of each country instead of just looking at the numbers. We also let users register and login. We would then remember and display his/her history, and let the user like/dislike a search. Users will then be recommended by searches with high "like" numbers.

Project Summary

We are interested in the achievements & participation situation of the world athletes in the 2021 Olympics, a special Olympics during the Covid-19 pandemic. Thus we decide to build a project which is going to show 2021 Olympics data sorted by the users' preference. People can have a clear glance of the kinds of data of the athletes sorted by different aspects, like coaches, countries, athletes, etc. We will also further our development on the exhibition of the data by including charts built by the data in the app.

The project is separated into three parts - designing, developing and testing. It is predictable that there will be challenges when we implement chart functions in the app, which means we will allocate more time on developing the app. This app will be useful for educating students and bringing a quick way to search data for people who keep a watchful eye on the 2021 Olympics sports. People are able to register for their own accounts to enjoy personalized functions.

Description

Users of our application may want to search, edit, compare and visualize the 2021 Tokyo Olympics data to see some interesting insights, such as the rank of each team based on total medals, gold medals.

To solve this problem, our application will provide some fixed popular search recommendations as well as the customized search, update, and insert for users. Moreover, we can compare valid search results and generate data visualization for them. For example, we will generate a bar chart for comparing selected countries' total medals. Our application will generate some summary with data visualizations for selected sub-datasets required by the user, such as the pie chart to illustrate the numbers of coaches for each country in Europe. Finally, we will enable users to like/dislike the countries/athletes/disciplines for better search recommendations.

Usefulness.

The application is useful for educating children and helping people find 2021 Olympics records quickly by the categories they want. For now, there isn't a similar application out, which increases the necessity of building such an application so that people interested in the 2021 Olympics can find data quickly. People who want to find the data of medals, number of participants, etc. currently still need to google the data themselves. If their restrictions for searching are quite a lot, or quite uncommon, they

may need to find the data set and do data cleaning themselves to get the result they want, which is quite inconvenient.

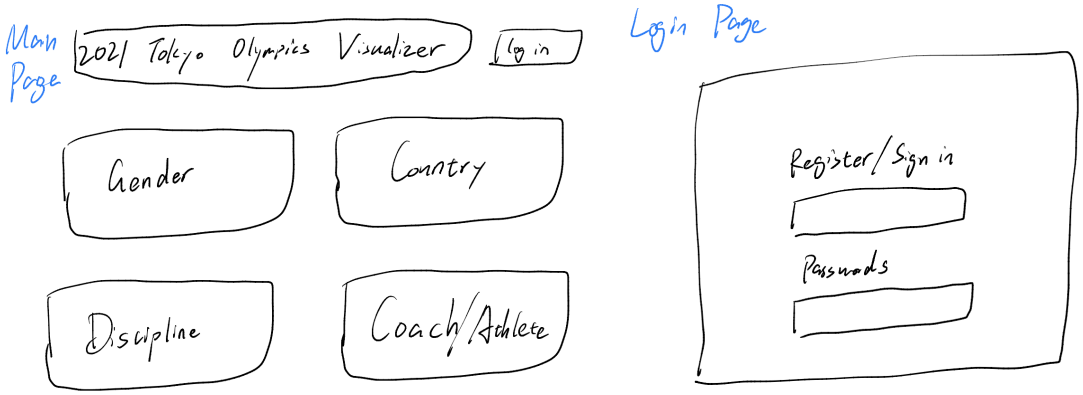
Realness
The data is about the information of the 2021 Olympics, which contains the details of the Athletes, Coaches, Teams participating as well as the Entries by gender. It contains their names, countries represented, discipline, gender of competitors, name of the coaches, and medals.

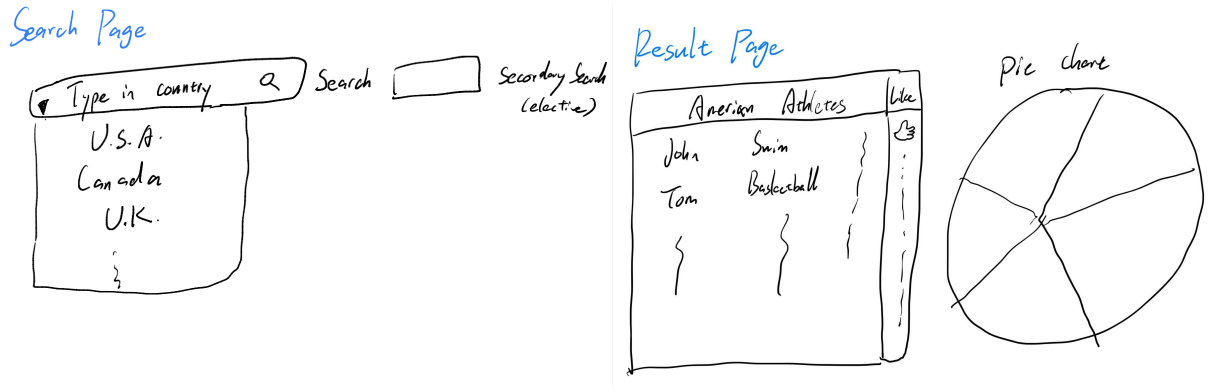
We will get this data from https://www.kaggle.com/datasets/arjunprasadsarkhel/2021-olympics-in-tokyo and the source of this csv file is from the Tokyo Olympics 2020 Website.

Description of the functionality that your website offers. This is where you talk about what the website delivers. Talk about how a user would interact with the application (i.e., things that one could create, delete, update, or search for). Read the requirements for stage 4 to see what other functionalities you want to provide to the users.

You should include:

1. **A low-fidelity UI mockup**: What do you imagine your final application's interface might look like? A PowerPoint slide or a pencil sketch on a piece of paper works!





2. **work distribution**: Who would be responsible for each of the tasks or subtasks? List of the person responsible for which exact functionalities in section 6. Explain how backend systems will be distributed across members. Be as specific as possible as this could be part of the final peer evaluation metrics.

We would do these **front-end and design works together including Database Design, Table Creation, Visualization, Frontend, and Testing**. In the Backend, we plan to provide four main functionalities for our users to search on: Men&Women statistics, Country statistics associated with Athletes/Coaches/Medals, Coach-Athlete pair info, Discipline statistics associated with Athletes/Coaches. We plan to enable register functionality so that we can support personalized functions. Personalized functionality backend work includes: Register and Login, Remember Recent Search Histories, Enable Likes/Dislike Toward Research Results, Recommend Search Based on Other User's Likes.

Men&Women statistics for selected countries/ disciplines(with graph) - Hao Yuan
We want to show the number and percentage of men&women in countries participating in the 2021 Olympics. We also would like to show the statistics by different disciplines to see if there is preference on attending sports. This chart will be helpful in showing data for small countries which may not dispatch athletes at all seats.
Numbers of Athletes/Coaches/Medals/disciplines for each/selected country (with pie chart) - Yijie Huang
Users could first select all/some countries from all participating countries in the 2021 Tokyo Olympic and filter the data by Athletes, Coaches or Medals. We could then either display the visualization of the data or add some limitations, such as top n countries. This functionalities could help user understand the any data related with countries.
Coach-Athlete pair info - Jerry Zhao
This functionality would enable the user to search on any Athlete or Coach the user is interested in. If the user asks for an Athlete, we would tell the user all information of this

Athlete together with his/her Coahes's info. Also, when the user asks for a Coach, we would tell the user all information about this Coach together with all Athletes coached by him/her.

Numbers of Athletes/Coaches for each discipline - Yibin Huang

This function allows the users to group each discipline with the number of athletes and coaches. We can apply a data visualization to show the distribution of them and compare this for each country.

Register and Login - Hao Yuan

People can register their own accounts and enjoy personalized functions based on their preferences. If people want to use the whole functions of the app, they need to login.

Remember Recent Search Histories - Jerry Zhao

This functionality lets the user track his/her recent search histories. We would remember the most recent three searches in each category. When a new search is made by this user, the oldest one of the three previous searches will be deleted, and the new one will be added.

Enable Likes/Dislike Toward Search Results - Yijie Huang

Let the user like/dislike disciplines/countries/athletes for future recommendation.

Recommend Search Based on Other User's Likes - Yibin Huang

Based on the number of likes and dislikes, we will recommend the user the top liked/disliked athletes or discipline across all users.