RShiny App Proposal

> **DATE**: March 28, 2019
>
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> **PREPARED FOR:** PUBH 7462 (001) ADVANCED PROGRAMMING AND DATA ANALYSIS IN R (SPRING 2019)

App Name

Olympic Games

App Purpose

This app will be designed to use RShiny to present modern **Olympic Games** (from Athens 1896 to Rio 2016). And highlight factors or features that determine the performance of medal owners compared with other athletes.

Data Source

Data scraped from Sports-Reference that contains 271116 rows and 15 features. Each row corresponds to an individual athlete compete in an individual Olympic event. These features are:

1. ID - Unique number for each athlete;
2. Name - Athlete's name;
3. Sex - M or F;
4. Age - Integer;
5. Height - In centimeters;
6. Weight - In kilograms;
7. Team - Team name;
8. NOC - National Olympic Committee 3-letter code;

9. Games - Year and season;
10. Year - Integer;
11. Season - Summer or Winter;
12. City - Host city;
13. Sport - Sport;
14. Event - Event;
15. Medal - Gold, Silver, Bronze, or NA.

App Functions

- Show distributions of players' age, height, weight, etc
- Multiple comparison between countries, events, nations, ages, etc
- By using heat geo map show medals distribution among countries
- Show multiple visualization by different events, gender, players, height, weight, countries, etc
- By using some machine learning algorithms predict futures medals owners' weight and height
- By using word cloud to see the common medal winners' name
- Dig out some interesting **truth** behind the data
- Animation shows medals distribution among countries by year

Programming Challenges

Programming challenges involves:

- Need a while to be familiar with rshiny
- May need CSS to beautify this shiny app
- It may need more time to debug than accomplishing
- Need to learn how rshiny support multiple pages

Work Schedule

Stage 1 - Preparation (approximately 2 days)

1. Scrape required datasets
2. Initial designing layout of shiny app (by hand)

Stage 2 - Development (approximately 2 weeks)

1. Build draft shiny app to match app functions planning
2. Build CSS style and adjust each visualizations
3. Build out optional inclusions

Stage 3 - Review & Testing (approximately 2 weeks)

1. Deliver shiny app to classmates and friends for inspection/testing
2. Address any concern or change through inspection
3. Populate needed content to match approved structure

Division of Labor

Lin Deng will be the only member in this project. He will be responsible for every coding work and UI.