Title: MM802 - Visualization Mini-project
Date: 19/ Mar/ 2019
Names: Arsham Sarshogh , Md Nafize Sadik, Kumar Saikat Halder
Project Title: Visualization of FIFA World Cup Stats on web platform

Abstract

The purpose of this project is to create an Interactive dynamic website which is user friendly, we were able to develop this website using main web-design tools consisting Bootstrap, HTML, CSS, JavaScript and Canvas JS. Then according to our selected dataset containing 4 tables have the full history of FIFA worldcup games. We designed some questions and managed our data accordingly and finally using our website we created a responsive platform which is able to respond to some queries while showing useful knowledge regarding to the latest incoming World Cup and some facts about previous ones.

Motivation

1. We wanted to make a website which can be reached a lot of people irrespective of ages, regions, religions etc. And FIFA world cup viewer was almost 3.2 bn on 2014.
2. We got a very useful dataset to make our website resourceful.
3. Our motivation came from our choice too. We are very regular playing football and watching football games.

Introduction

Since our dataset is mainly focused on Football and World Cup games our platform could be used as a research, journal source and/or a news platform. By creating this web-site we have made it much easier and faster for those who are interested in World Cups feature and past, People seeking fast and understandable knowledge about one of football's most important events.
Even those who are not football fans when the world cup time comes and brings its special atmosphere they become interested for the sake of their country or many other reasons. That is when some question comes to mind such as which country first won the World Cup or which country has the most cups and or many other questions. Thanks to our user friendly and knowledgeable platform just by several clicks, people can find answer to their questions very simple and fast . Even sometime journalists who have to

create an important report don't have time to search and find their required data can use this platform.
In our website out of lots of queries we have selected few queries as a demo. However, it is possible to add more queries to make it more resourceful.

Dataset Source: We have collected the dataset from the Kaggle[1] website. The site has the characteristics of - Kaggle Datasets has four core components [2]:

- **Access:** simple, consistent access to the data with clear licensing
- **Analysis:** a way to explore the data without downloading it
- **Results:** visibility to the previous work that's been created on the data
- **Conversation:** forums and comments for discussing the nuances of the data.

Besides, for simplicity we have added another table named test.csv and information has got from FIFA official website [3].

Dataset Sizes:

- WorldCupMatches.csv has 4573 * 20
- WorldCupPlayers.csv has 37.8k * 9
- WorldCup.csv has 20 * 10
- Test.csv has 13 * 2

Project Status

As mentioned earlier our main goal was to develop a dynamic user friendly website which is interactive and contains the required data which we were able to create and meet our expectations. But that is not all, while trying to make all of this happen we faced some difficulties in different parts of our project both including front and back end development as an example sorting our data and moving displaying it accordingly using figures and charts which we were able to find solutions for and overcome.

As for duties and contribution it is difficult to divide responsibilities since we all were contributing in all of the project but mainly; Arsham Sarshogh was responsible to create and design the Front-End of our website While Kumar Saikat Halder was simultaneously operating on the dataset (sorting, searching etc) and which we are supposed to apply to our website furthermore, on the other side Md Nafize Sadik was working on creating figures and graphs, and generating ideas about most demanded questions and filters.

It is complete in a sense that we have used the dataset in our website. Besides, we have made the website interactive for its user to find out relevant information through visualization. Additionally, we have used some CSS effect to make slideshow animation and hovering effect at the bottom. However, what we have thought earlier to integrate all information in charts hasn't been done because of time constraints although it's possible. So, our website has been made mostly for the demo purpose and we have a future plan to release it online.

Development Environment

We have used local server for testing and demonstrating the website and information. We hosted local space of computer as a http server. This can be done by installing either from python console or node package manager (npm). For showing the chart, we used canvas js library. For querying,we have used another javascript library d3.js. For sorting, we have used quicksort algorithm and implemented some of our own algorithm for showing meaningfulness of data that we got from kaggle.

Development Work

Every website is consisted of 2 parts:

1) Front -end
2) Back-end

For our Front-End we used HTML and BootStrap to create the structure or in other words bones of our website then by applying CSS we styled it and applied some animations after that using JavaScript libraries and functions we were able to add functionality and interactivity to our website In order to make it more interesting and user friendly also we used SubLime as our text editor.

For using our Project Since it's an offline project and we haven't purchased Any domains for it or in other words haven't placed it on online servers You have to Download the folder containing our project which includes HTML files that are our pages, CSS, JavaScript files and a folder containing the used images. Note that all of these folders should be placed in the same directory In order for the WebSite to Run properly.

Our current website doesn't fully cover information regarding All of the Games and Matches which have happened due to our time limitations we tried to include most interesting and useful data as highlights.

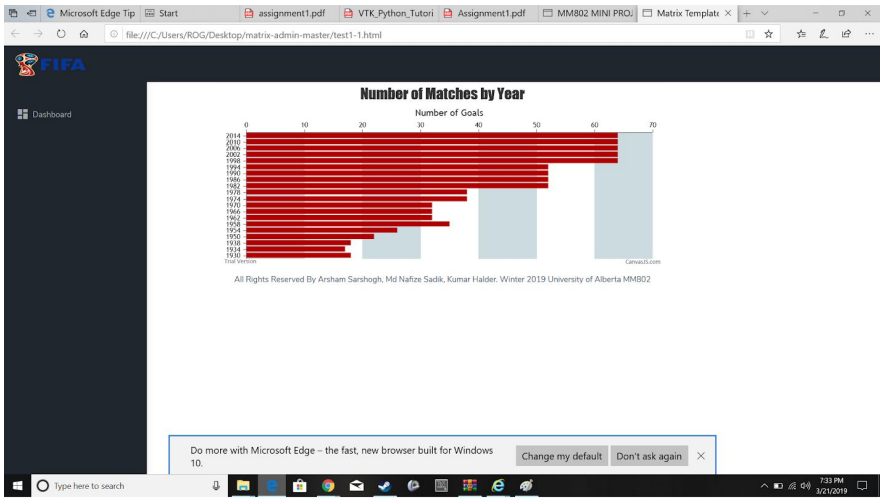
Concluding Remarks

Since some of our team members didn't have any experience in Web development we benefitted and learned alot about how powerful the tools which we used to develop this web site can be and how effective a good website can be to anything from a small business to a portfolio website.

As a conclusion mostly We learned how to benefit form JavaScripts libraries and use them to take our website to another level and achieve higher standards.

Finally for our future Project work we are planning on adding all of our data set to our web site and put it on the internet so that it is much more useful and knowledgeable for people from no to full knowledge about the World Cup .

While running the code and testing the web-site note that google chrome doesn't give us the access to share the data with our website. How ever the website runs totally fine in other browsers which we tried such as mozilla firefox or Microsoft Edge.



References:

[1] https://www.kaggle.com/abecklas/fifa-world-cup
[2] https://medium.com/@benhamner/introducing-kaggle-datasets-a935f9f76f5
[3] https://www.fifa.com/worldcup/