1.1 Dashboard Report

The "UFC Fighter's Latest Fight Performance Analysis" dashboard report shows the statistical data about the top 100 fighters who have shown the most knockdowns, who have similar fighting styles and similar performances, in their recent fight using the k-means clustering method. The report consists of four pages, as follows.

1. Top 100 – statistics and analysis about the top 100 fighters
2. R charts - the charts that show the performances of fighters, from the R script
3. Full stats – statics about every fighter in the unique dataset
4. Info   - Brief note about this project

In addition, to make it easy for users, we have made a page navigation pane as well. then the user can go through the report without any confusion while extracting valuable insights.
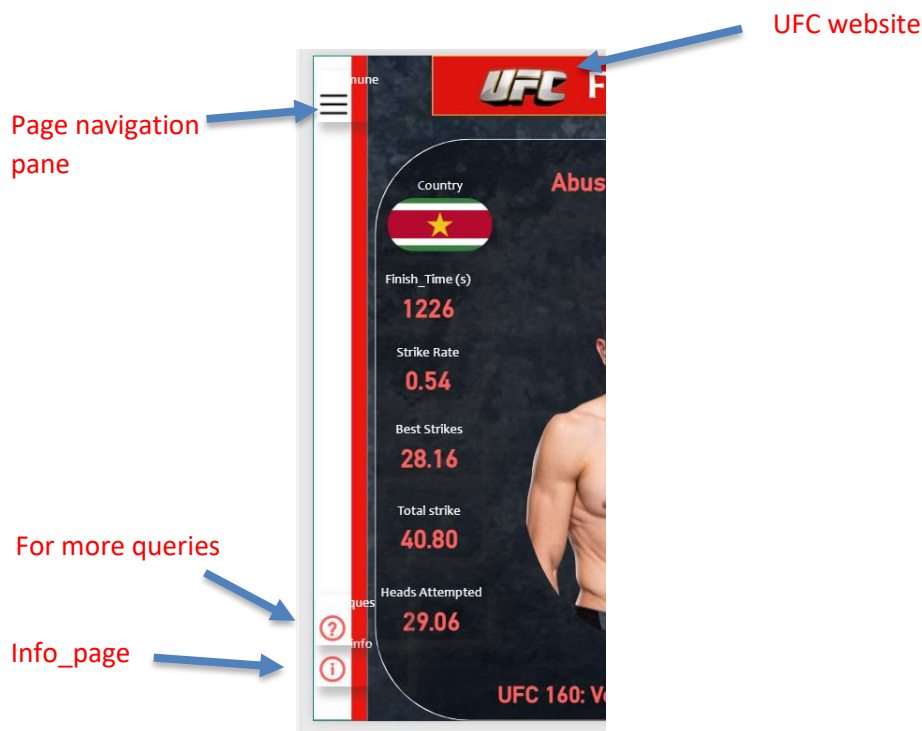

Figure 01

The user may access the page menu by clicking on the three horizontal lines in the top-left corner.
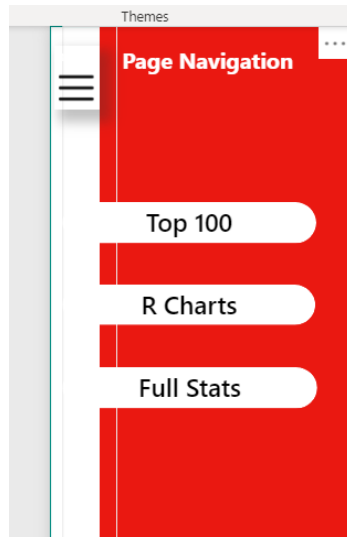
Figure 02

There are two ways for the user to close the page navigation pane. The user can collapse the navigation bar by clicking the orange-highlighted top of the arrow and the light-blue-highlighted section of the photo.
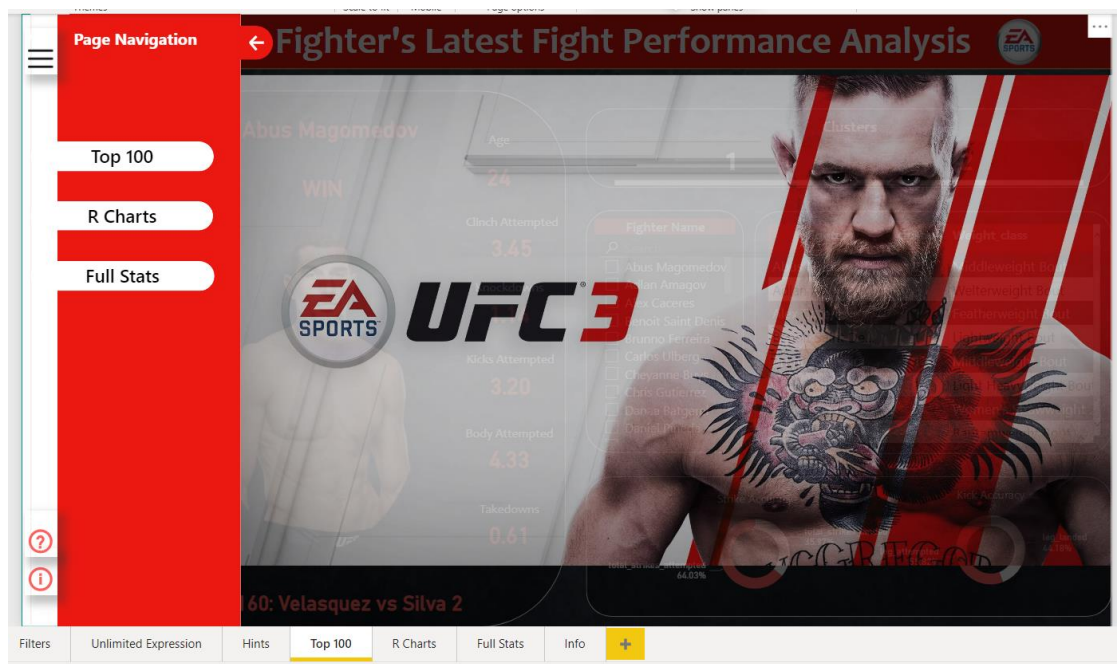

Figure 03

Let's break down the pages one by one.

1. Top 100

Figure 04

This graphic shows the major statistics of a fighter, which gives better insightful ideas to the user. It consists of a fighter's striking rate, fight finished time in seconds at his/her last fight. Significant strikes the fighter throws and attempts, as well as total strikes, clinches, strikes or kicks to the head and body, country, name, last event fought, win or loss status, and knockdowns likewise the data we should prioritize while deciding before choosing a fighter.

Figure 05
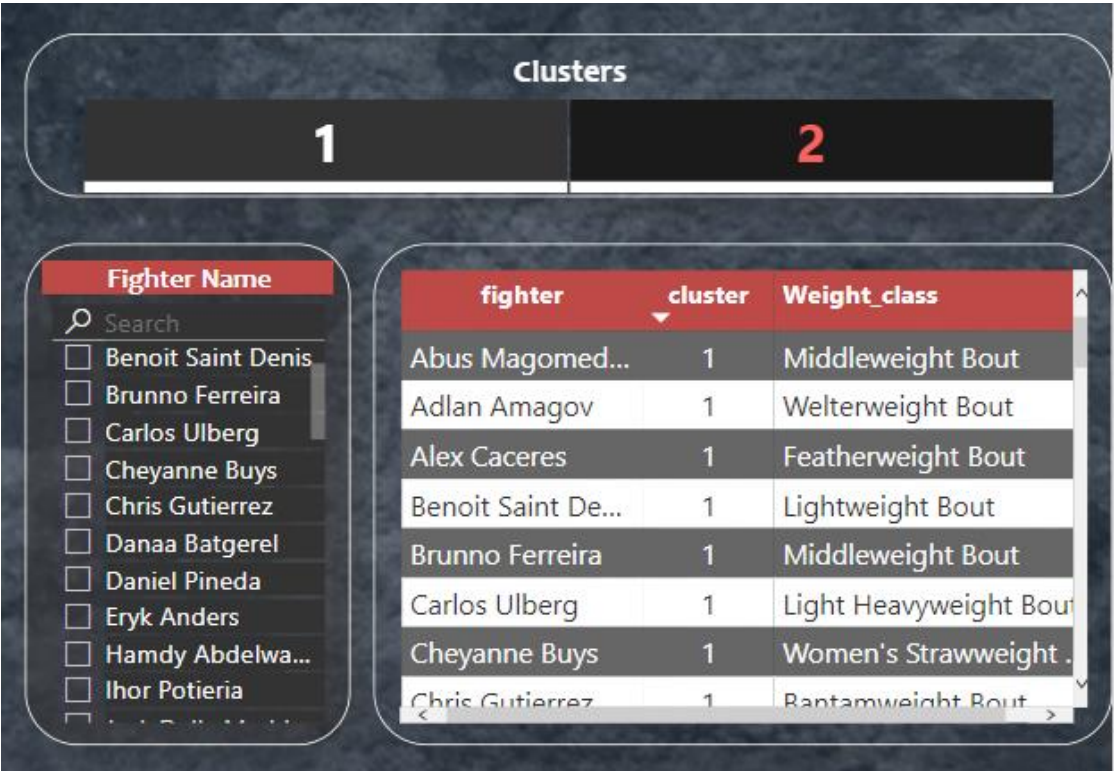
We can see the fighters who are members of various clusters, and the user of the table may view the weight division for each fighter. Additionally, we may look for any fighter's statistics by searching and filtering in the "Fighter Name" slicer.
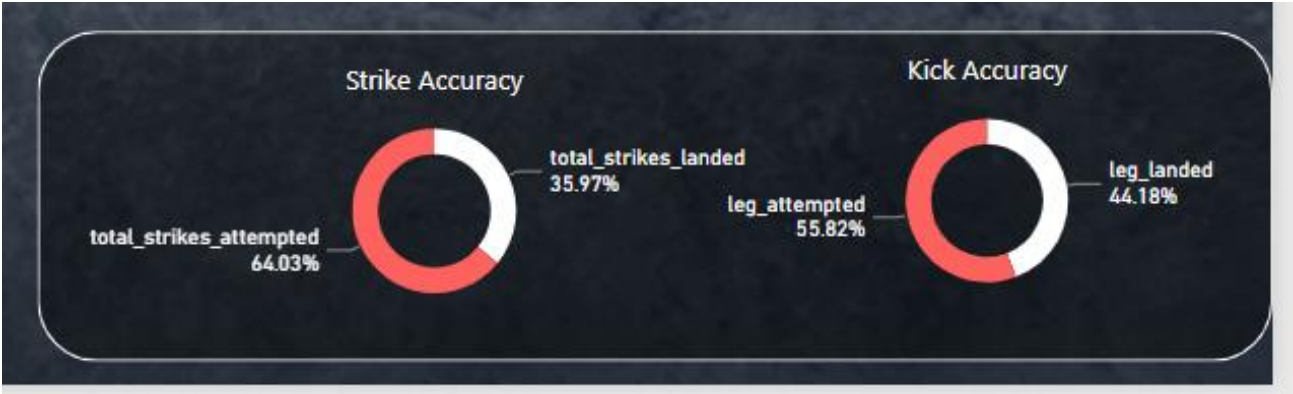

Figure 06

This section reveals the fighters' striking and kicks accurate charts which are plotted in donut charts. It shows as a percentage of the total, how much a fighter tried and how much he was able to accurately land the punches and kicks to the opponent.

2. R charts

The user will be able to see the graphical charts of fighters' performances as charts. There are four charts and every chart is built in an R script which exists as an inbuild option at the Visualization pane.
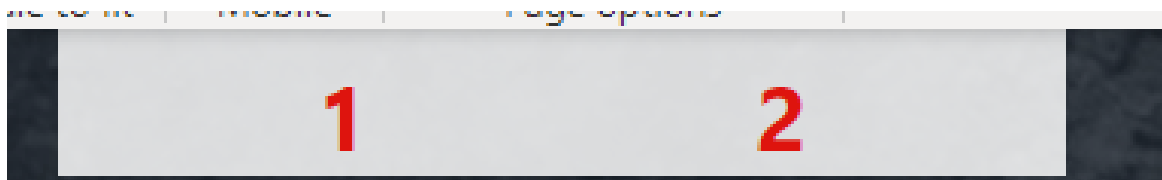

Figure 07

The cluster class that is displayed in a slicer can be chosen. With the exception of the "Cluster Groups of Fighter" chart, all charts are sensitive to the slicer.
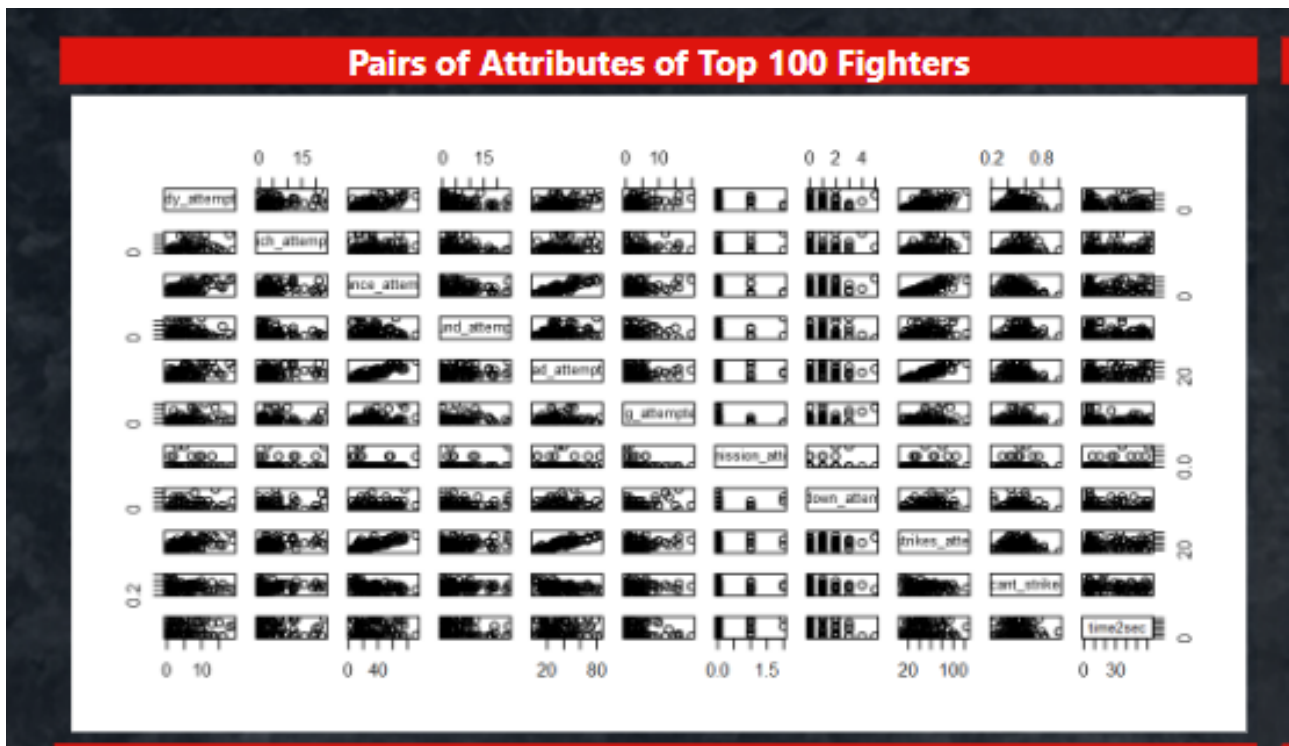
Figure 08

A potent tool for showing relationships between variables in a data set in R is the pairs plot. With it, scatterplots may be created for each set of variables in a data frame. The pairs plot can be used to spot trends and connections between different variables in a data set. Additionally, it can be used to spot data oddities like outliers.

When dealing with these data sets, we've found that the pairs plot is really helpful since it allows us to immediately spot correlations between variables. The factors with the strongest connections may also be found using it.
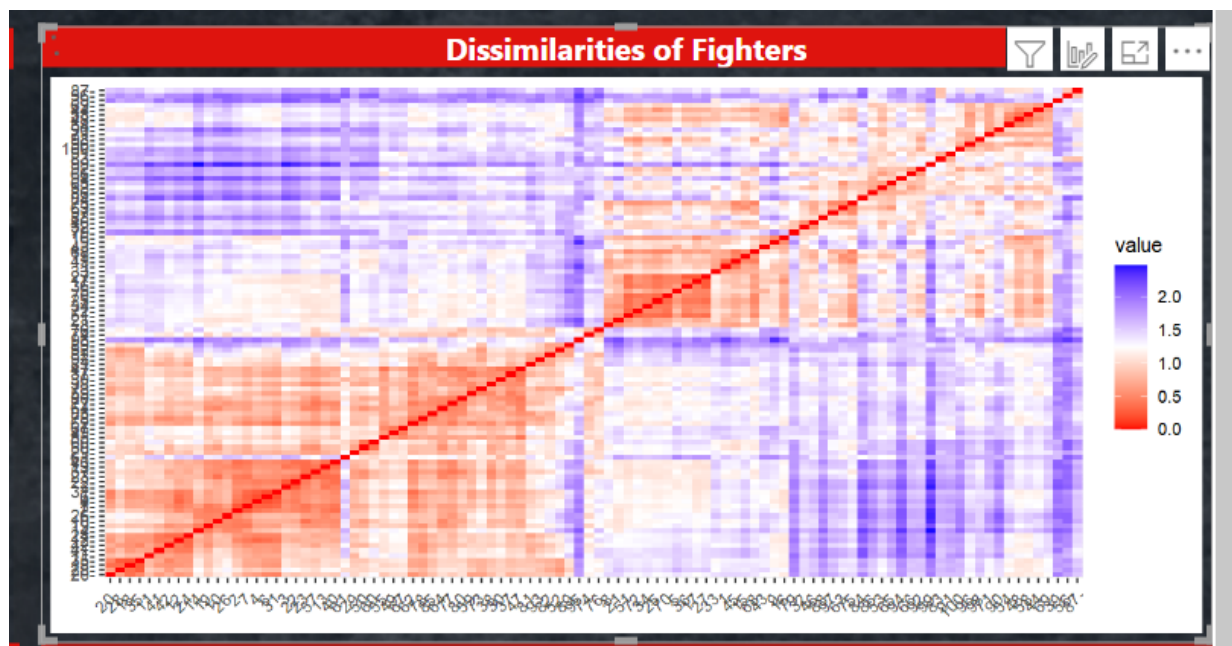

Figure 09

This chart shows the distances between each data point in the data frame. The 'fviz_dist' function is built in the 'factoextra' library and we used this chart to indicate the dissimilarities of each fighter according to their statistics.
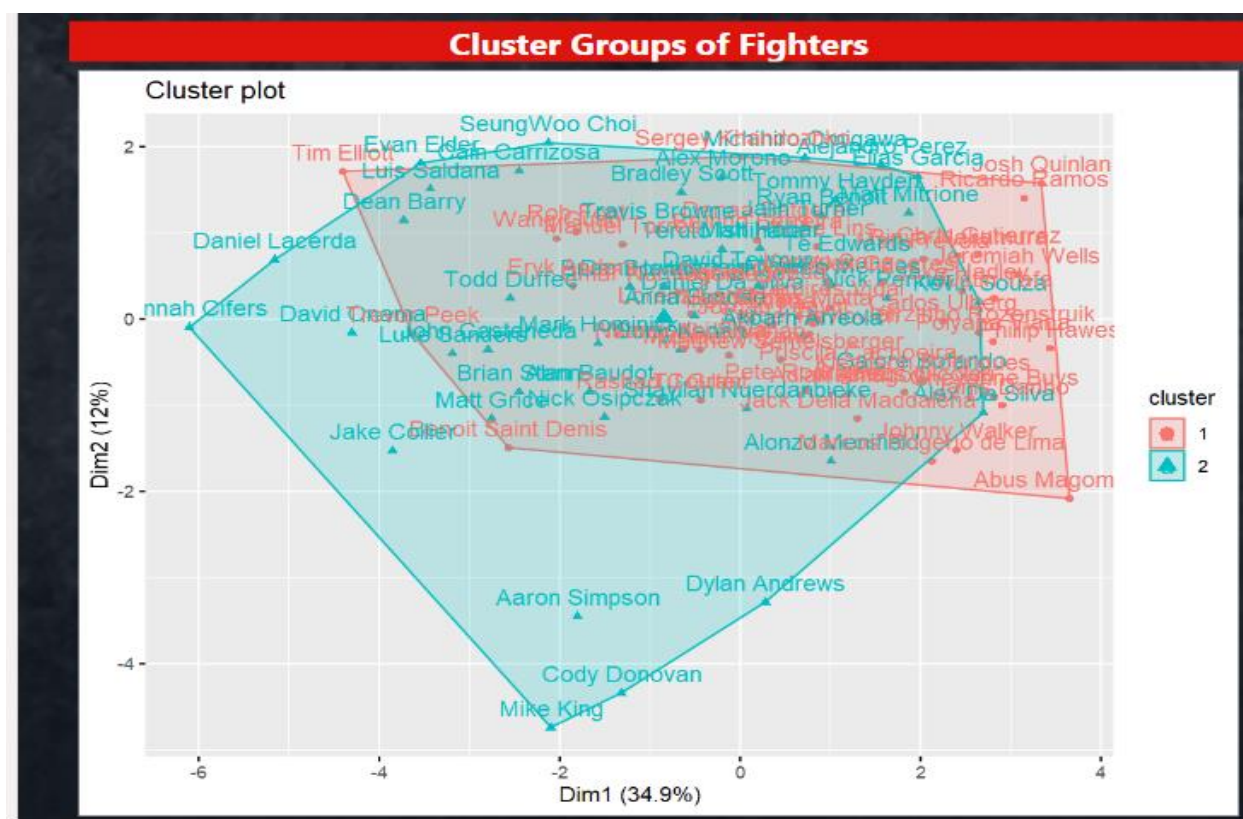
Figure 10

The two clusters that we had previously distinguished were displayed using the cluster plot shown above. The cluster map illustrates common behaviors among the participants and groupings the combatants in accordance with their most recent performances. Because the chart demands every single piece of data to produce a graphical result, the cluster plot is not responsive to the slicer at the top of the page.
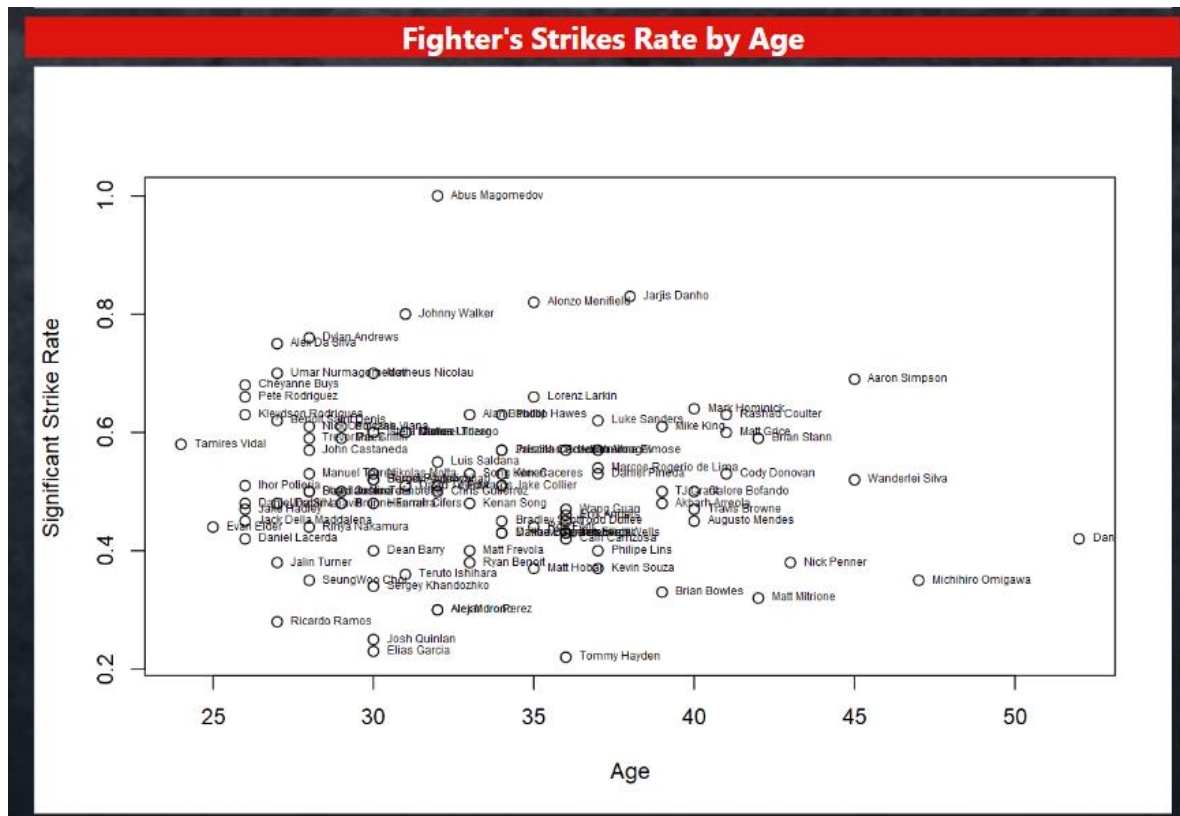

Figure 11

The scatter plot shows the striking rate of each player by their age. Briefly, we can see that fighters' striking rate is gradually decreasing when the age axis goes to higher values. On the other hand, we can see that fighters who are in their prime time show their best performances.

3. Full Stats

This page will display the statistics of all active and retired UFC athletes from the previously saved 'ucf_unique' dataset.
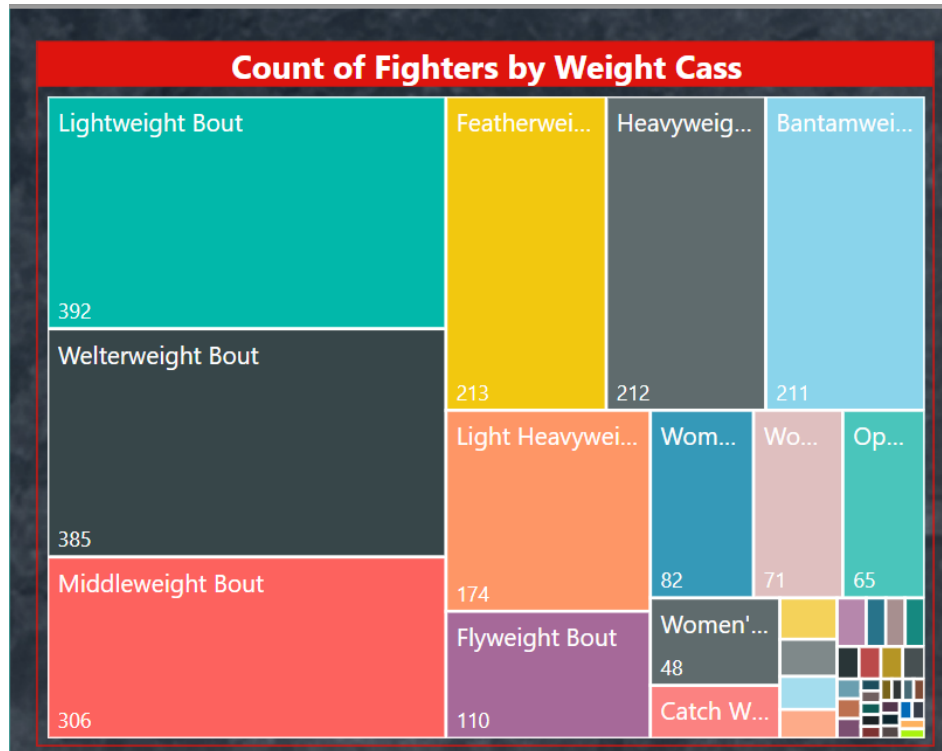

Figure 12

This tree map is used to show the number of fighters in each weight category. We have found that this chart is a great choice since we want to display large amounts of data and a bar chart can't effectively handle that large number of values. The size of each rectangle represents the value of the data point it contains and the color represents the category. It shows the proportion of differences and distribution of each category in a dataset and how they relate to each other.
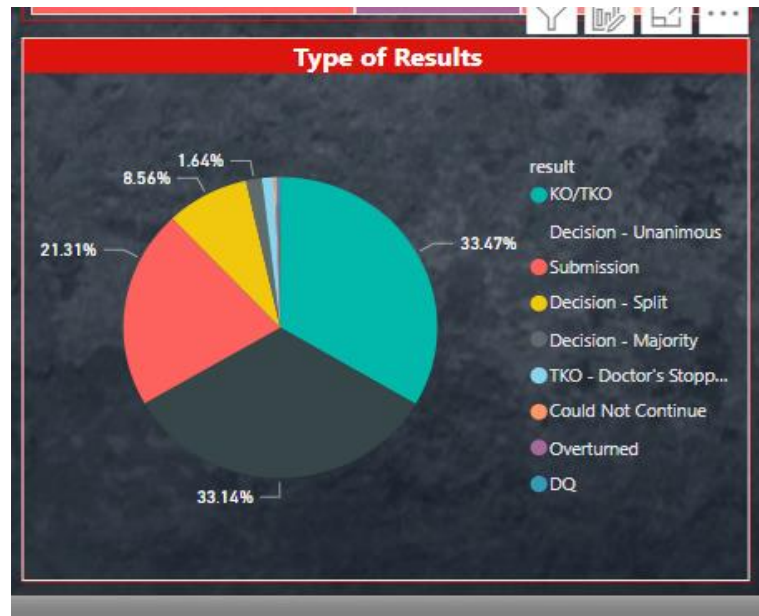
Figure 13

This graph shows how the winner was decided in the last event. Since there are several methods for choosing the winner, we have selected a pie chart to represent it with the percentage.
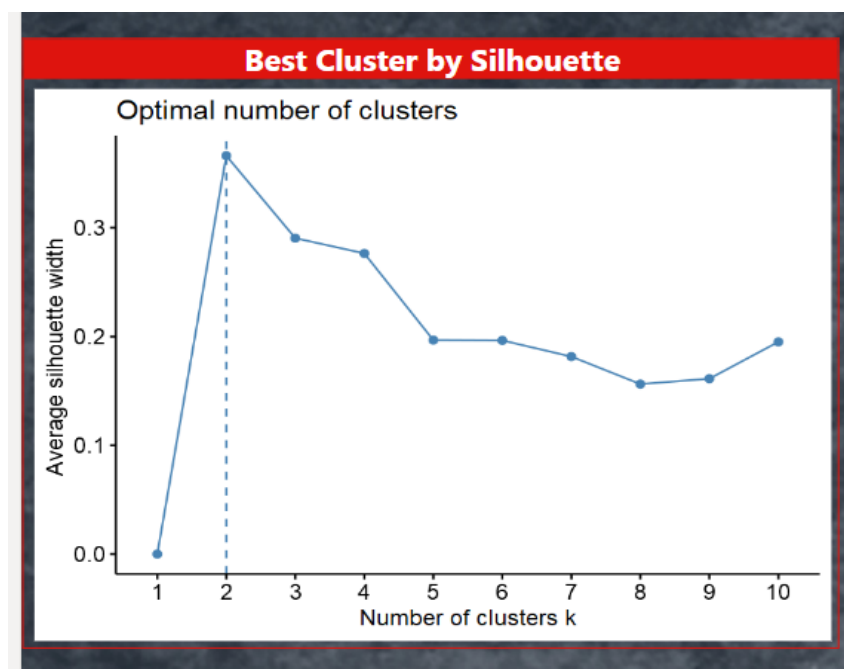

Figure 14

This plot is to show how many meaningful clusters are inside the chosen data range by using a weight class treemap or Decision pie chart. As we discussed earlier in the clustering section, the silhouette method is to suggest how many clusters we can use to find similar patterns in our data. According to the changes and filtering doing by the user, this chart will able to respond while showing significant fluctuations. After looking at this chart, the user can determine how many insightful clusters are in the selected data set.
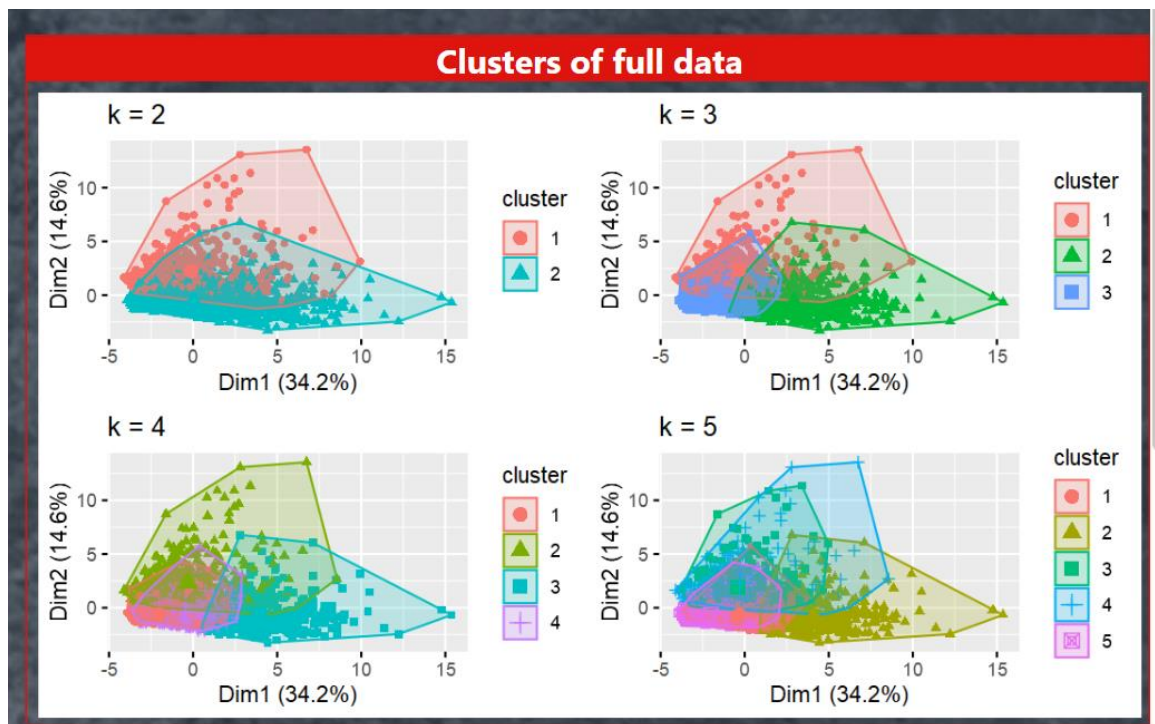
Figure 15

After determining the best number of clusters while looking at the previous chart, the user can head up to this chart. This chart shows the graphical charts of cluster groups in a standard manner. Since the max number of clusters and minimum number of clusters are between 2 and 4, we can plot these four cluster graphs that are between 2 and 5. Then the user has the ability to determine the optimal class while looking at the clustering chart, and will able to make better data-driven decisions easily.

fighter	significant_strikes_rate	takedown_rate	total_strikes_attempted	knockdowns	WinStatus	weight_class
Aaron Phillips	0.37	0.00	9	0	LOSS	Bantamweight Bout
Adrian Yanez	0.46	0.00	54	0	LOSS	Bantamweight Bout
Aiemann Zahabi	0.52	0.00	23	0	WIN	Bantamweight Bout
Alatengheili	0.36	0.00	44	0	WIN	Bantamweight Bout
Albert Morales	0.44	1.00	30	0	LOSS	Bantamweight Bout
Alex Soto	0.39	0.33	50	0	LOSS	Bantamweight Bout
Ali AlQaisi	0.00	1.00	24	0	LOSS	Bantamweight Bout
Anderson Dos Santos	0.13	0.00	65	0	LOSS	Bantamweight Bout
Andre Soukhamthath	0.40	0.00	21	0	LOSS	Bantamweight Bout
Anthony Birchak	0.40	0.00	49	0	LOSS	Bantamweight Bout

Figure 16

This table chart is to show only some of the important statistics about the athletes. Since this page is committed to the entire dataset and our main objective is to show the top 100 fighters, we are not looking for the individuals on this page.

4. Info page

This is the last page of our report and it reveals the Importance of this dashboard, Who can take the benefits out of it, and more information about this project. Users can use this button to go back to the first page.

Figure 17