

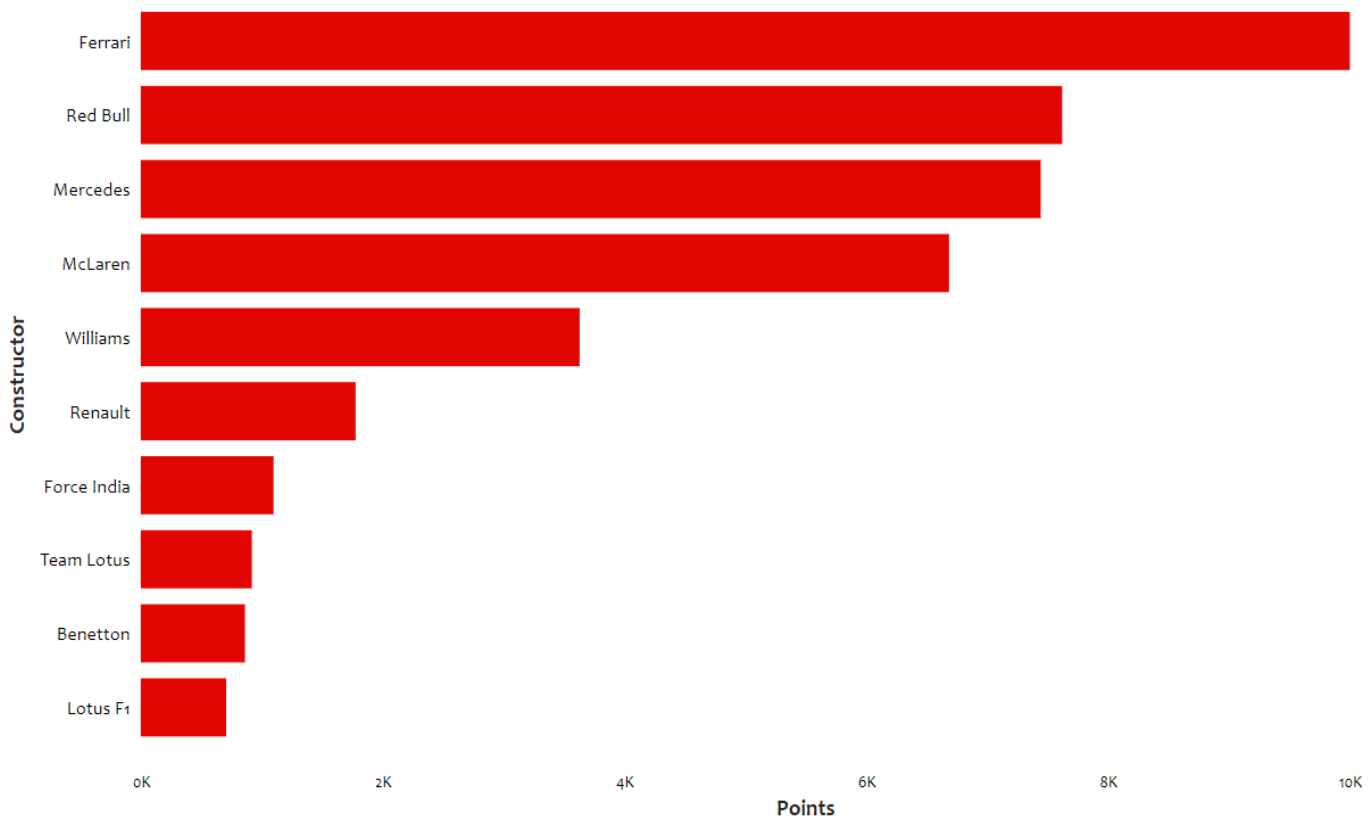
Formula 1 Data Analysis Project



Formula 1 is one of the most exciting and competitive motorsports in the world. It combines speed, talent, cutting edge technology, innovative engineering and teamwork to achieve greatness and to be the best in sport. The formula is a set of rules that all participants cars must follow. Formula 1 has evolved through the years, from high revving V10 engines through V8 and now turbocharged V6 hybrids.

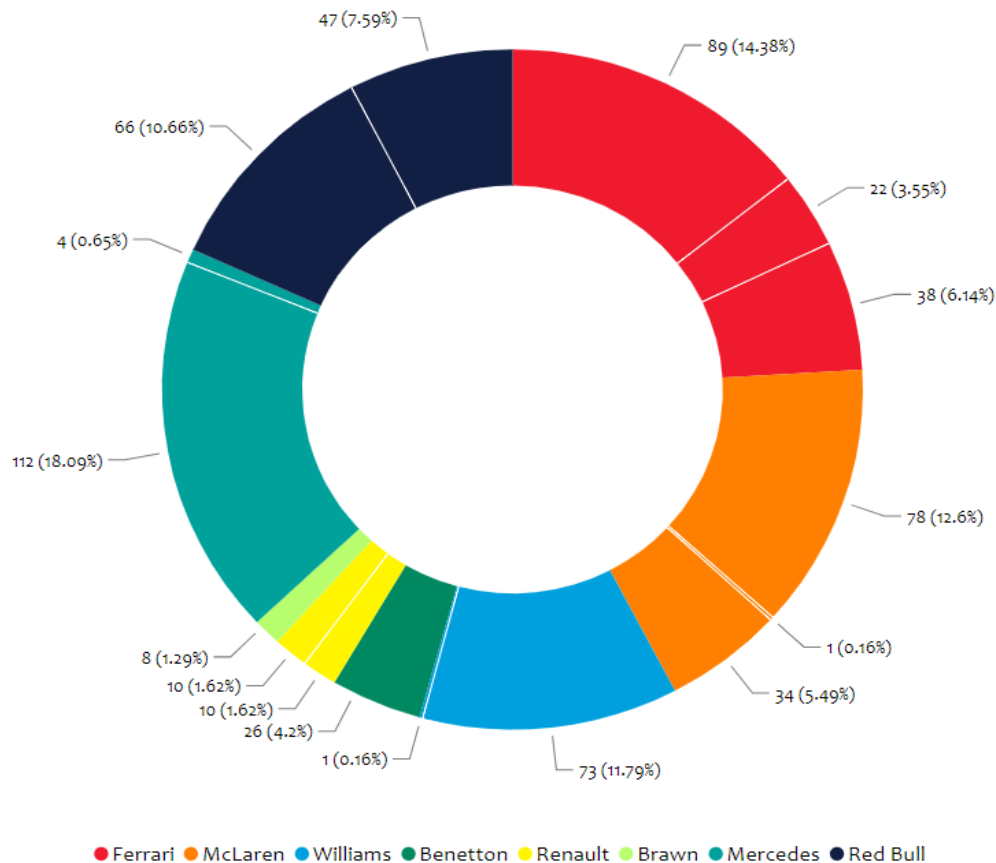
This project aims to conduct an in depth analysis of f1 champions, will take you through the different era's of F1 racing, ranging from the 1950's to 2023.

Top 10 constructors of all time



Formula 1 racing began in 1950, with points being awarded to both constructors and drivers. Leading the table is legendary Ferrari, renown for its masterpiece cars and outstanding drivers over the years. Following closely is Red Bull, with Max Verstappen dominating in recent seasons. Mercedes with Hamilton's seven World Championships dominated recent years

Constructors dominance trough F1 Era's



The donut chart refers to the years between 1989 – present. Formula 1 racing different Era's.

The V10 Era was between the years 1989 – 2005 This was the Era of the legendary Michael Schumacher known for he's aggressive yet precise driving style. Achieving 5 out of 7 championships with Ferrari.

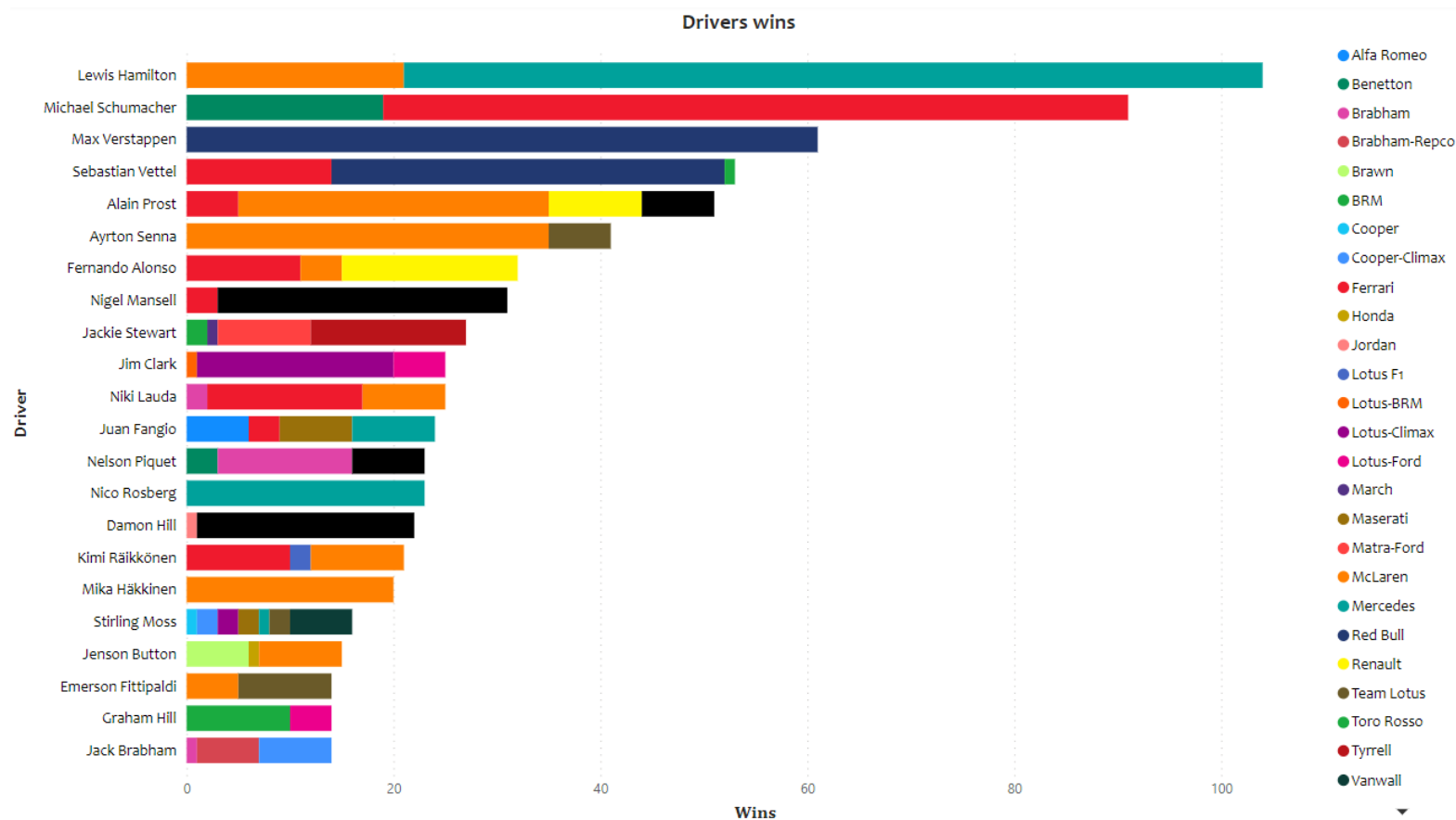
Due to new regulations, environmental concerns, cost control and other considerations in 2006 F1 changed to V8 engines which where a bit slower but aid the competitive balance between the team, lasting until 2013. Today F1 changed to turbocharged V6 hybrids.

New regulations and different laws are always considered in F1 Racing. These changes are driven by many factors like, safety issues, technological advancements and the desire to attract more manufacturers to the sport.

As you can see in the donut chart above, different constructors dominated different Era's of F1. From this chart you can see how Ferrari maintained its reputation

dominating the V10 Era, achieving significant wins through the years. Mercedes with Lewis Hamilton dominating the V6 Era breaking even with 7 world championships of Michael Schumacher.

From this we understand that new technologies and laws offer a chance for manufacturers to be more competitive and win races. Making the sport more thrilling for the fans.



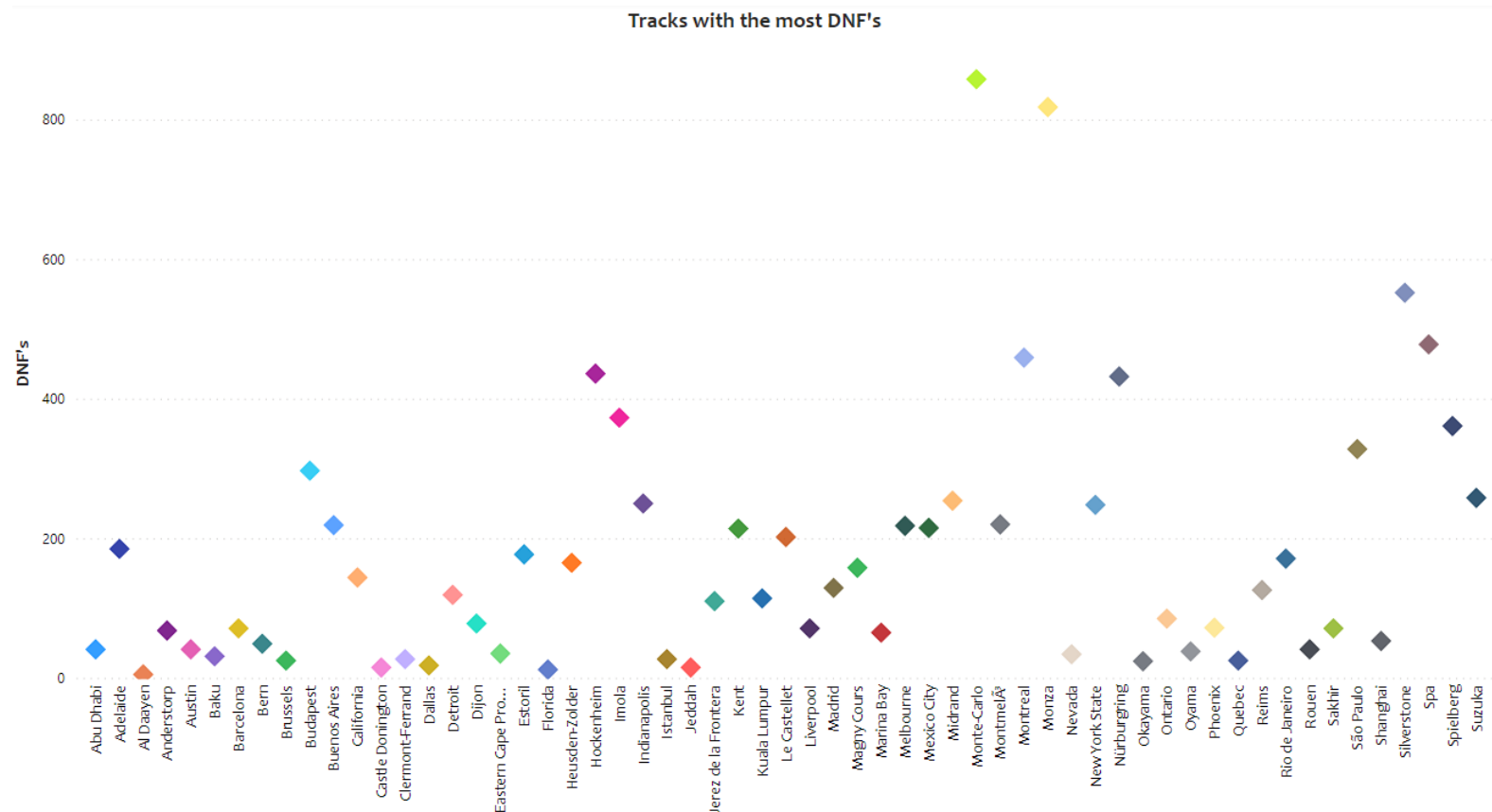
We can see that Lewis Hamilton leading the table wining more races than any other driver with his Mercedes.

Here you can see drivers race wins with each team they have been with. The top drivers that won the most races often remained loyal to a single constructor or made a team change fewer times. This suggests that not only driver's skill and talent plays a role in F1 racing but also long term consistency with a competitive team plays a significant role in achieving greatness in the sport.

As we see that Lewis Hamilton leading the table wining more races than any other driver with his Mercedes. Michael Schumacher known as a Ferrari driver. And lately Max Verstappen achieving many wins with he's Red Bull F1 car. At the bottom of the table are the drivers who won fewer races but also changing teams more often.

In each season in Formula 1 there are 20 races on average, that means 20 different tracks. Each track has its unique characteristics, tracks built for racing have high speed straights, technical corners and much safer, than temporary tracks that set up on city streets, these are much difficult tracks because they often have narrower track and tight corners making overtaking much harder.

We'll examine which tracks are considered the most challenging by how many DNF's a tracks have. DNF stands for "did not finish", drivers who started from grid position but didn't finish the race due to crash or disqualification.



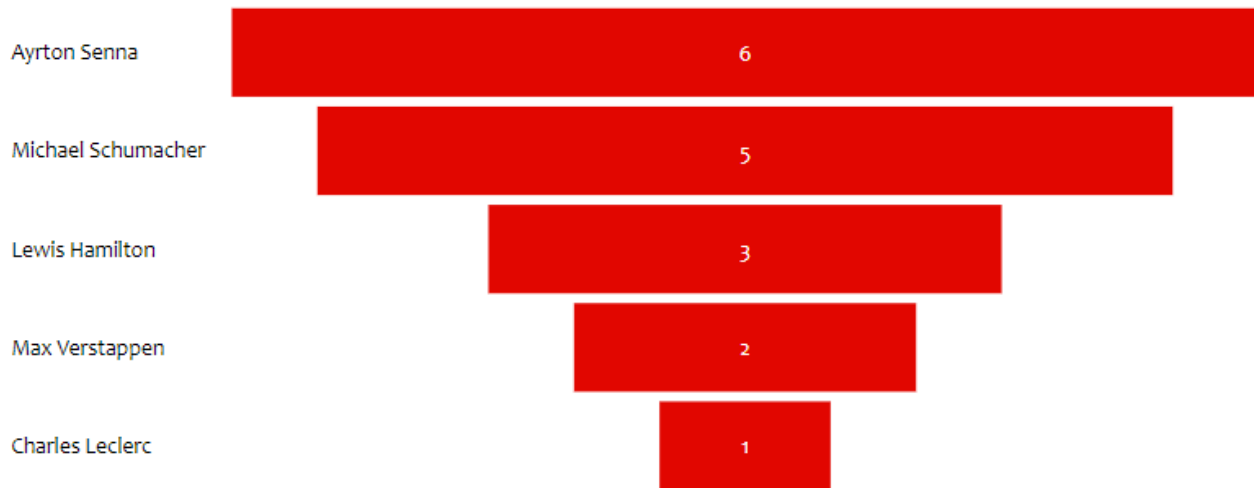
You can see right away that two tracks lead the chart for the most challenging tracks having much higher DNF's than other tracks on the list.

Monza is an iconic track known for its high speed layout, drivers often reaching top speeds for a significant portion of the track. Teams run minimal downforce setup to maximize the top speed of the car on straight lines compromising stability in corners. This can explain the high number's of DNF's in Monza.

But the most dangerous and most challenging track of all is the Monaco Grand Prix circuit located in Monte Carlo. The track known to be very difficult for drivers to even finish the race because of its narrow layout and tight corners. The track is surrounded by metal barriers leaving no runoff areas, a minor mistake often ends with a crash.

Now lets see how top drivers perform in this challenging track

Top 5 winners on Monte-Carlo Track



Ayrton Senna considered the “King of Monaco”, he had exceptional control on his car and could take risks to gain speed at the track where other wouldn’t dare speeding. In such narrow and tight corners track pole position is crucial in the race, Senna would push as hard as he can to lock into the pole positions and gain the advantage in the race itself.

From Monaco Grand Prix we learn that in such challenging track, drivers who win races on these tracks are considered talented and have high driving skills and lack the fear of taking risks.

This chart doesn’t mean that the bottom drivers aren’t as skilled drivers as the top drivers, but they are young rising drivers. They could win more races maybe set new records. Time will tell.