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Introduction to Data Management PROJECT REPORT

(Project Semester August-December 2021)

**PROJECT REPORT
ON
FIA F1 1950-2020**

Submitted by

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DECLARATION

I, Poloju Nithin, student of Computer Science & Engineering under CSE/IT Discipline at, Lovely Professional University, Punjab, hereby declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date: 18/12/2021

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Signature

ACKNOWLEDGEMENT

Primarily I'd thank God for being able to complete my project with success. Then I'd like to thank my teacher **Ms. Komal Arora**, whose valuable guidance has been the ones that helped me patch this project and make it full proof success in contribution towards the completion of this project.

Last but not least I'd rather thanks to **Lovely Professional University,** and my parent's inspiration, who gave me this golden opportunity to learn many new things, to learn another aspect of life.

Poloju Nithin

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INTRODUCTION

- Data management is important because the data your organization creates is a very valuable resource.
- The last thing you want to do is spend time and resources collecting data and business intelligence, only to lose or misplace that information.
- In that case, you would then have to spend time and resources again to get that same business intelligence you already had.
- And on that data analysis is carried out which show visualization of our problems in efficient way.
- Data Analysis is a process of inspecting, cleansing, transforming, and modeling data with the goal of discovering useful information, informing conclusions, and supporting decision- making.
- This project is based on such data analysis on FIA 1950-2020
- This file contains two data sheets

OBJECTIVES/SCOPE OF ANALYSIS

After analysis of the dataset, the aim of this project is to give answer of given objectives in easy way:

1. Most Number of laps

2. Top 10 Race Winners

3. Top 10 Drivers with Most Career Points

4. Most Occurred Venues

5. Top 10 Succesfull race finishers

SOURCE OF DATASET:

Source of the data sheet:

https://www.kaggle.com/aadiltajani/fia-f1-19502019-data

The dataset is based on FIA F1(formula 1)1950-2020

The columns included in the dataset are given below:

➢ Year
Gives the participation year of participant

➢ Position

Gives the position achieved by participant

➢ Driver no

Gives which sequence number of driver(participant)

➢ Venue

Gives the race venue for drivers

➢ Name

Gives the driver's name

➢ Nametag

Gives the name tag of driver

➢ Team

Gives the team name

➢ Laps

Gives the laps completed by driver

➢ Time

Gives the time taken by driver to complete the race

ETL PROCESS:

➢ **ETL** is a process that extracts the data from different source systems, then transforms the data (like applying calculations, concatenations, etc.) and finally loads the data into the Data Warehouse system.

➢ Full form of ETL is Extract, Transform and Load.

➢ The triple combination of ETL provides crucial functions that are many times combined into a single application or suite of tools that help in the following areas:

- Enhances Business Intelligence solutions for decision making.

- Allows verification of data transformation, aggregation and calculations rules.

- Allows sample data comparison between source and target system.

- Helps to improve productivity as it codifies and reuses without additional technical skills.

Sample of dataset with data fields is given below:

S. No.	Year	Position	Driver No.	Venue	Track	Name	NameTag	Team	Laps
0	1950	1	2	great-britain	Silverstone Circuit	Nino Farina	FAR	Alfa Romeo	70
1	1950	2	3	great-britain	Silverstone Circuit	Luigi Fagioli	FAG	Alfa Romeo	70
2	1950	3	4	great-britain	Silverstone Circuit	Reg Parnell	PAR	Alfa Romeo	70
3	1950	4	14	great-britain	Silverstone Circuit	Yves Giraud Cabantous	CAB	Talbot-Lago	68
4	1950	5	15	great-britain	Silverstone Circuit	Louis Rosier	ROS	Talbot-Lago	68
5	1950	6	12	great-britain	Silverstone Circuit	Bob Gerard	GER	ERA	67
6	1950	7	11	great-britain	Silverstone Circuit	Cuth Harrison	HAR	ERA	67
7	1950	8	16	great-britain	Silverstone Circuit	Philippe Etancelin	ETA	Talbot-Lago	65
8	1950	9	6	great-britain	Silverstone Circuit	David Hampshire	HAM	Maserati	64
9	1950	10	10	great-britain	Silverstone Circuit	Joe Fry	FRY	Maserati	
10	1950	10	10	great-britain	Silverstone Circuit	Brian Shawe-Taylor	SHA	Maserati	64
11	1950	11	18	great-britain	Silverstone Circuit	Johnny Claes	CLA	Talbot-Lago	64
12	1950	NC	1	great-britain	Silverstone Circuit	Juan Manuel Fangio	FAN	Alfa Romeo	62
13	1950	NC	23	great-britain	Silverstone Circuit	Joe Kelly	KEL	Alta	57
14	1950	NC	21	great-britain	Silverstone Circuit	Prince Bira	BIR	Maserati	49
15	1950	NC	5	great-britain	Silverstone Circuit	David Murray	MUR	Maserati	44
16	1950	NC	24	great-britain	Silverstone Circuit	Geoff Crossley	CRO	Alta	43
17	1950	NC	20	great-britain	Silverstone Circuit	Toulo de Graffenried	DEG	Maserati	36
18	1950	NC	19	great-britain	Silverstone Circuit	Louis Chiron	CHI	Maserati	24

Power Pivot

- ➢ **Power Pivot** is a feature of Microsoft Excel. It is available as an add-in in Excel 2010, 2013 in separate downloads, and as an add-in included with the Excel 2016 program. Power Pivot extends a local instance of Microsoft Analysis Services Tabular that is embedded directly into an Excel Workbook.
- ➢ This allows a user to build a ROLAP model in Power Pivot and use pivot tables to explore the model once it is built.
- ➢ This allows Excel to act as a Self-Service BI platform, implementing professional expression languages to query the model and calculate advanced measures.

Analysis on dataset

1. **Most Number of laps**

   - ➤ By performing this analysis, we will get the Comparison of drivers from year to year rather it was rapidly growing or decreasing and from that we can get Most number of laps with Races occured

   - ➤ From this we can analyze reasons if the drivers decrease and can take certain actions for more participations
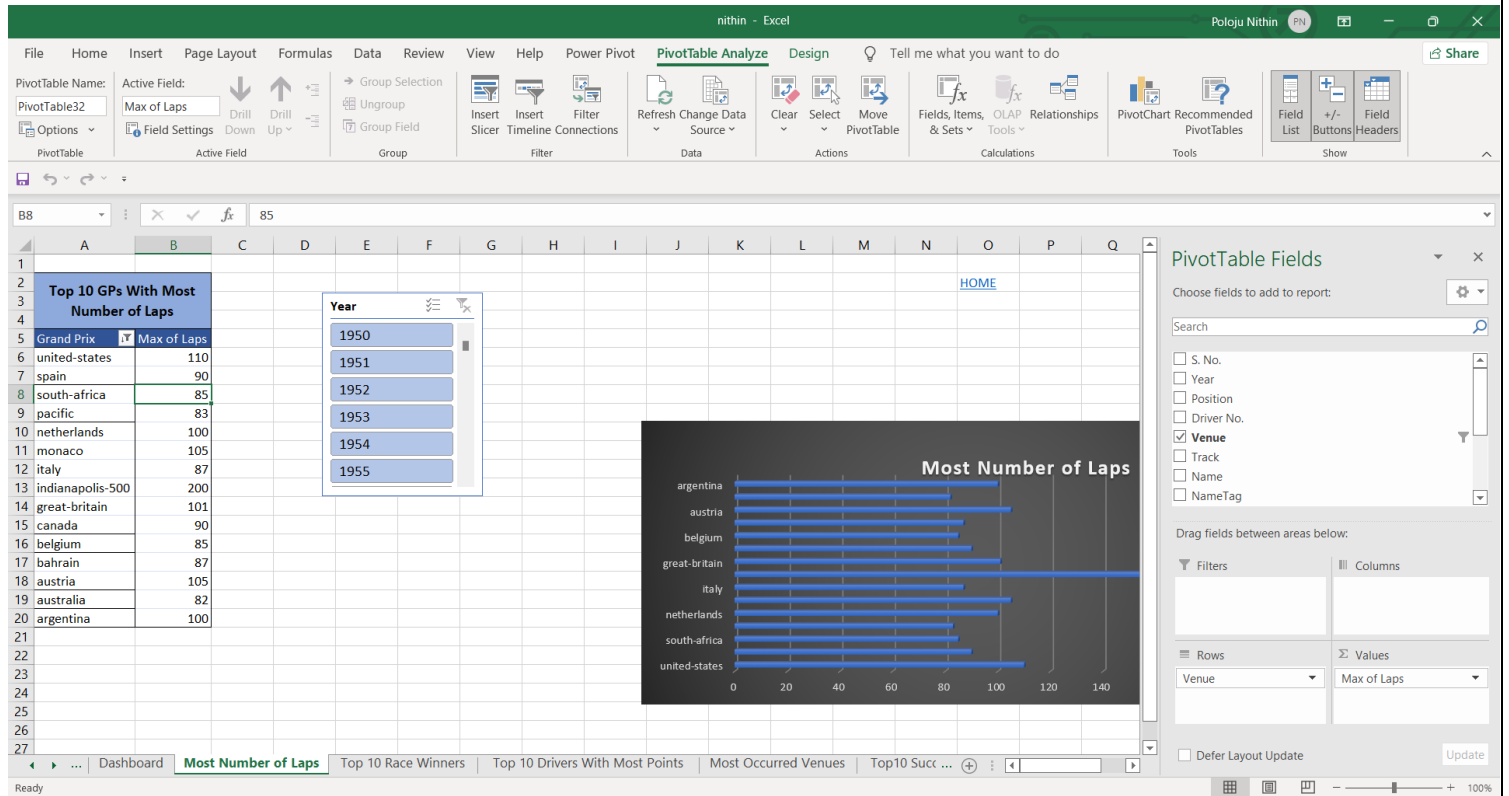
   Description

   - ➤ The analysis is based on Laps completed by drivers, most wcc and wdc winners, top drivers with most career points, participations of drivers

   Specific requirements, functions and formulas
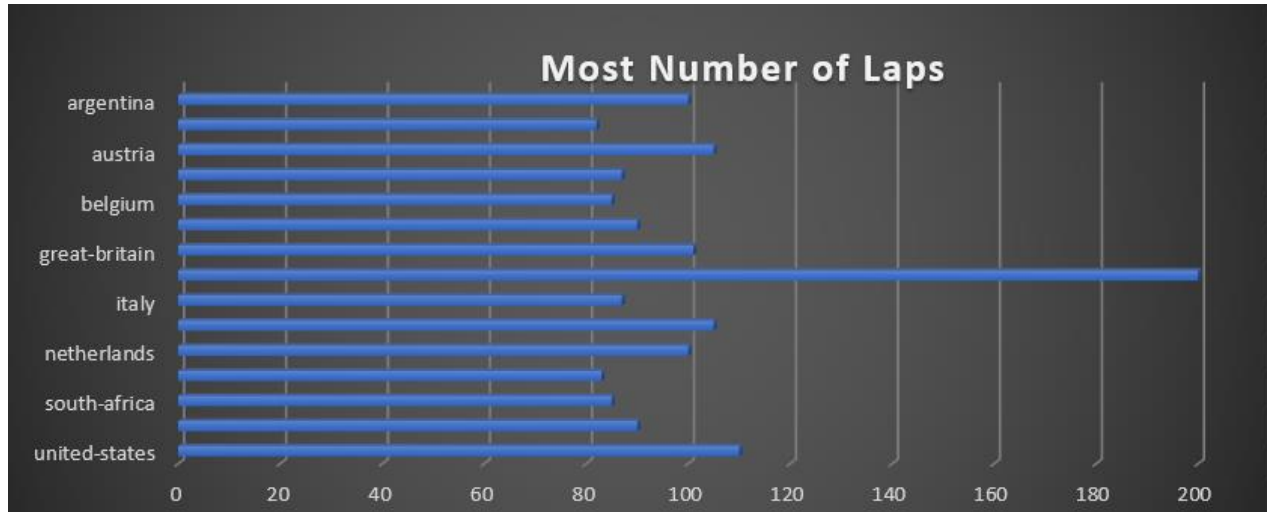
   - ➤ Some formulas are used for Comparisions.

   Analysis results

   - When the participants are compared with respect to the number of laps

Visualization

When the drivers are compared with number of laps

2.Top 10 Race winners

> By performing this analysis, we will get the Top 10 wcc winners

Description

> The analysis based on the Publishers of the game

Specific requirements, functions and formulas
> count function is used in pivot table for the count of the wcc winners
> Sort function used to get the top 10 same as wdc winners

Analysis results

Driver	Wins
Drivers with Most Wins	
Lewis Hamilton	95
Michael Schumacher	91
Sebastian Vettel	53
Alain Prost	51
Ayrton Senna	41
Fernando Alonso	32
Nigel Mansell	31
Jackie Stewart	27
Niki Lauda	25
Jim Clark	25

Visualization

TOP 10 RACE WINNERS

Driver	Total
Lewis Hamilton	95
Michael Schumacher	91
Sebastian Vettel	53
Alain Prost	51
Ayrton Senna	41
Fernando Alonso	32
Nigel Mansell	31
Jackie Stewart	27
Niki Lauda	25
Jim Clark	25

3.Top 10 drivers with most career points

Introduction

➢ By performing this analysis, we will get Topmost 10 drivers with highest points

Description

➢ The analysis based on the Genre of the race

Specific requirements, functions, and formulas

➢ Count function is used in pivot table for the counting of no of points for a certain genre
➢ Sort function is used in pivot table to arrange in ascending order of the values of count of drivers.

Analysis results

Driver	Career Points
Top Drivers With Most Career Points	
Lewis Hamilton	3778
Sebastian Vettel	3018
Fernando Alonso	1899
Kimi Raikkonnen	1863
Nico Rosberg	1594.5
Michael Schumacher	1566
Valtteri Bottas	1512
Jenson Button	1235
Felipe Massa	1167
Max Verstappen	1162
Daniel Ricciardo	1159

Visualization

Top 10 Drivers With Most Career Points
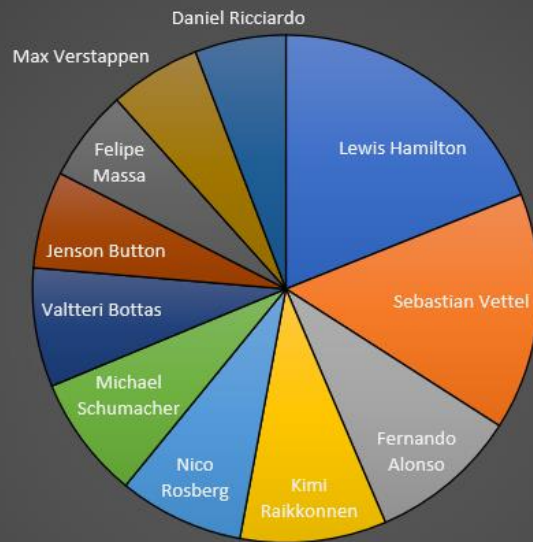
4.Most Occurred venues

Introduction

By performing this analysis, we will get Most occurred venues based on the races occurred places.

Description

➢ The analysis is based on Races and places

Specific requirements, functions, and formulas

➢ Value filters are used to for the top 10

Analysis results

Most visited venues by FIA Formula 1	
Venues	Race Count
italy	71
great-britain	71
monaco	66
belgium	65
germany	65
france	60
canada	50
spain	50
brazil	47
united-states	44

Visualization

Most visited Venues

Country	Value
italy	71
great-britain	71
monaco	66
belgium	65
germany	65
france	60
canada	50
spain	50
brazil	47
united-states	44

5.Top 10 Most successful Race Finishers

Introduction

 ➢ By performing this analysis, we will get year to year comparisons in races and Successful race finishers from 1950-2020

Description

 ➢ The analysis is based on Names of the drivers.
 ➢ Drivers who DNF(do not finished races).

Specific requirements, functions and formulas

 ➢ Count function is used in pivot table for the Completed races and drivers participated
 ➢ Value Filter is used to show Names of the drivers

Analysis results

	Drivers With Most Successful Race Finishes	
DNF	0	🔽
Row Labels 🔽	Successful Finishes	
Kimi Raikkonnen	262	
Fernando Alonso	246	
Lewis Hamilton	240	
Michael Schumacher	237	
Jenson Button	231	
Rubens Barrichello	226	
Felipe Massa	226	
Sebastian Vettel	221	
Nico Rosberg	174	
Sergio Perez	166	
David Coulthard	166	

Visualization

Top 10 SUCCESSFUL RACE FINISHERS

Conclusion

1.Most number of laps with venues and max of laps

Grand Prix

united-states

Spain

South-africa

Pacific

Netherlands

Monaco
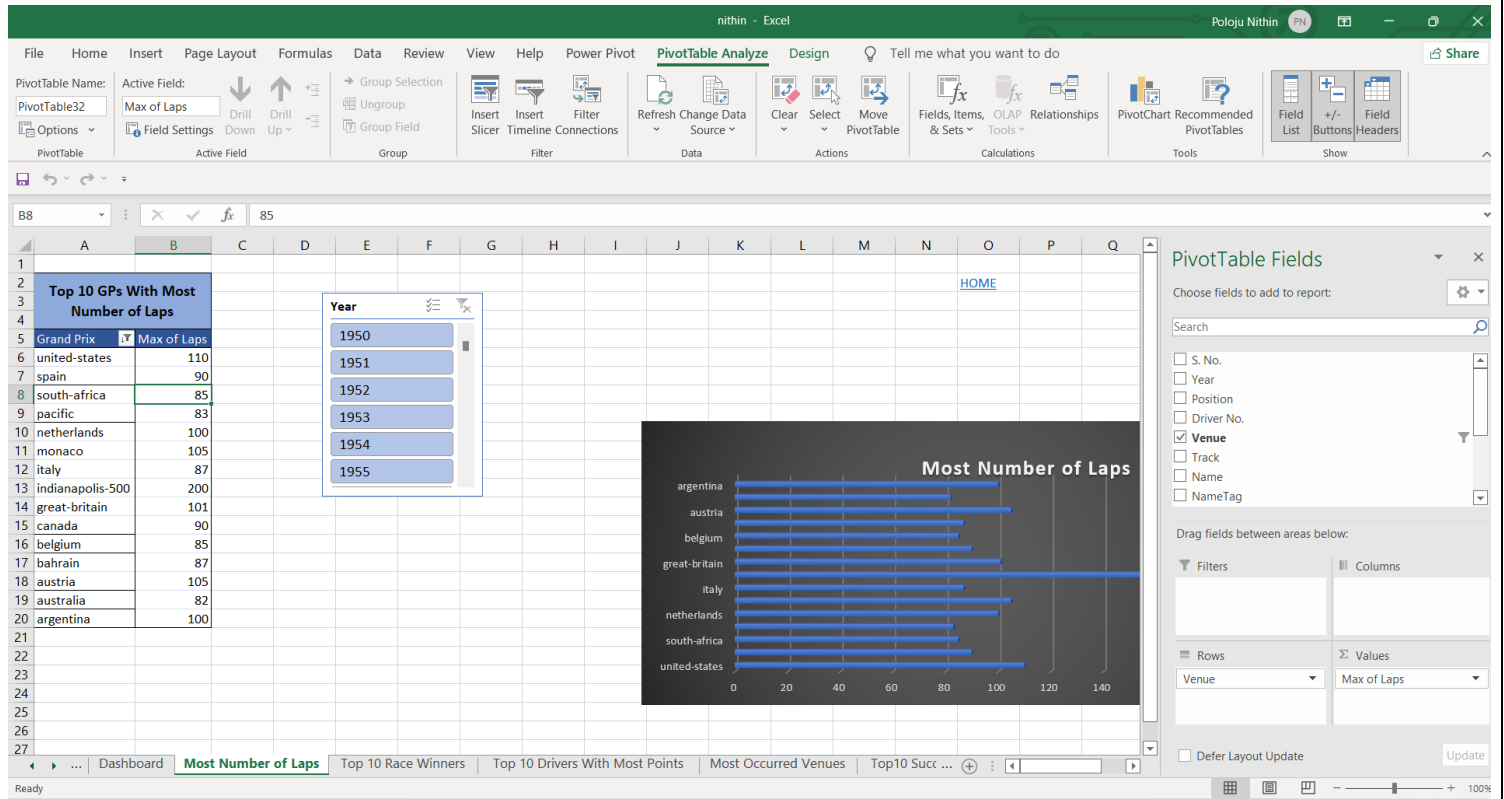
Italy

Indianapolis-50

Great-Britain

Canada

Belgium

Bahrain

Austria

Australia

Argentina

Poloju Nithin

| | | | | | | | | | | | | | | | | | | |

HOME

Top 10 GPs With Most Number of Laps

Grand Prix	Max of Laps
united-states	110
spain	90
south-africa	85
pacific	83
netherlands	100
monaco	105
italy	87
indianapolis-500	200
great-britain	101
canada	90
belgium	85
bahrain	87
austria	105
australia	82
argentina	100

Year

- 1950
- 1951
- 1952
- 1953
- 1954
- 1955

Most Number of Laps

PivotTable Fields

Choose fields to add to report:

- [ ] S. No.
- [ ] Year
- [ ] Position
- [ ] Driver No.
- [x] Venue
- [ ] Track
- [ ] Name
- [ ] NameTag

Drag fields between areas below:

Filters

Columns

Rows
Venue

Values
Max of Laps

Sheets: Dashboard | Most Number of Laps | Top 10 Race Winners | Top 10 Drivers With Most Points | Most Occurred Venues | Top10 Succ ...

23

2.Top 10 Race winners

Lewis Hamilton

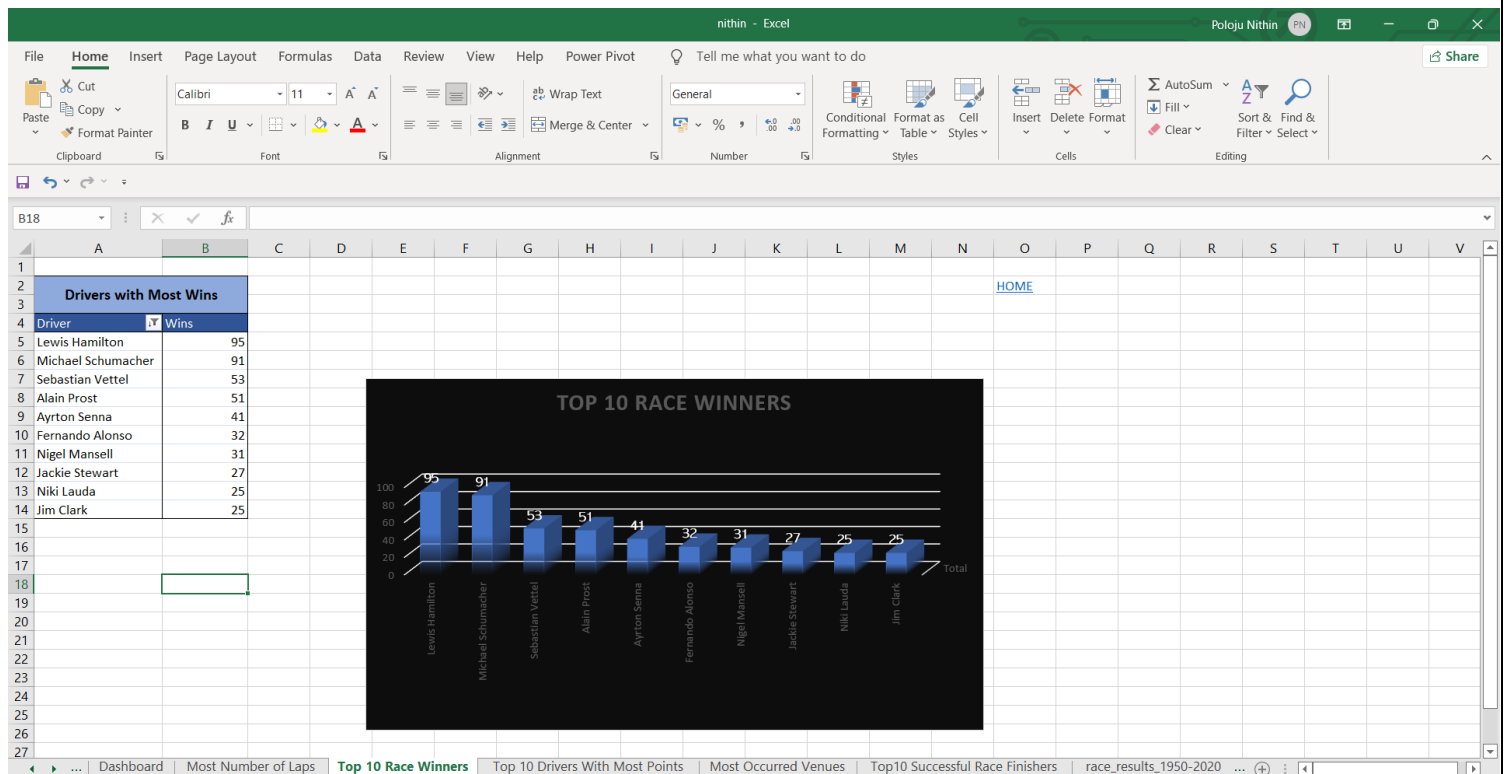Michael Schumache

Sebastian Vettel

Alain Prost

Ayrton Senna

Fernando Alonso

Nigel Mansell

Jackie Stewart

Niki Lauda

Jim Clark

3.Top 10 drivers with most career points

Lewis Hamilton

Sebastian Vettel

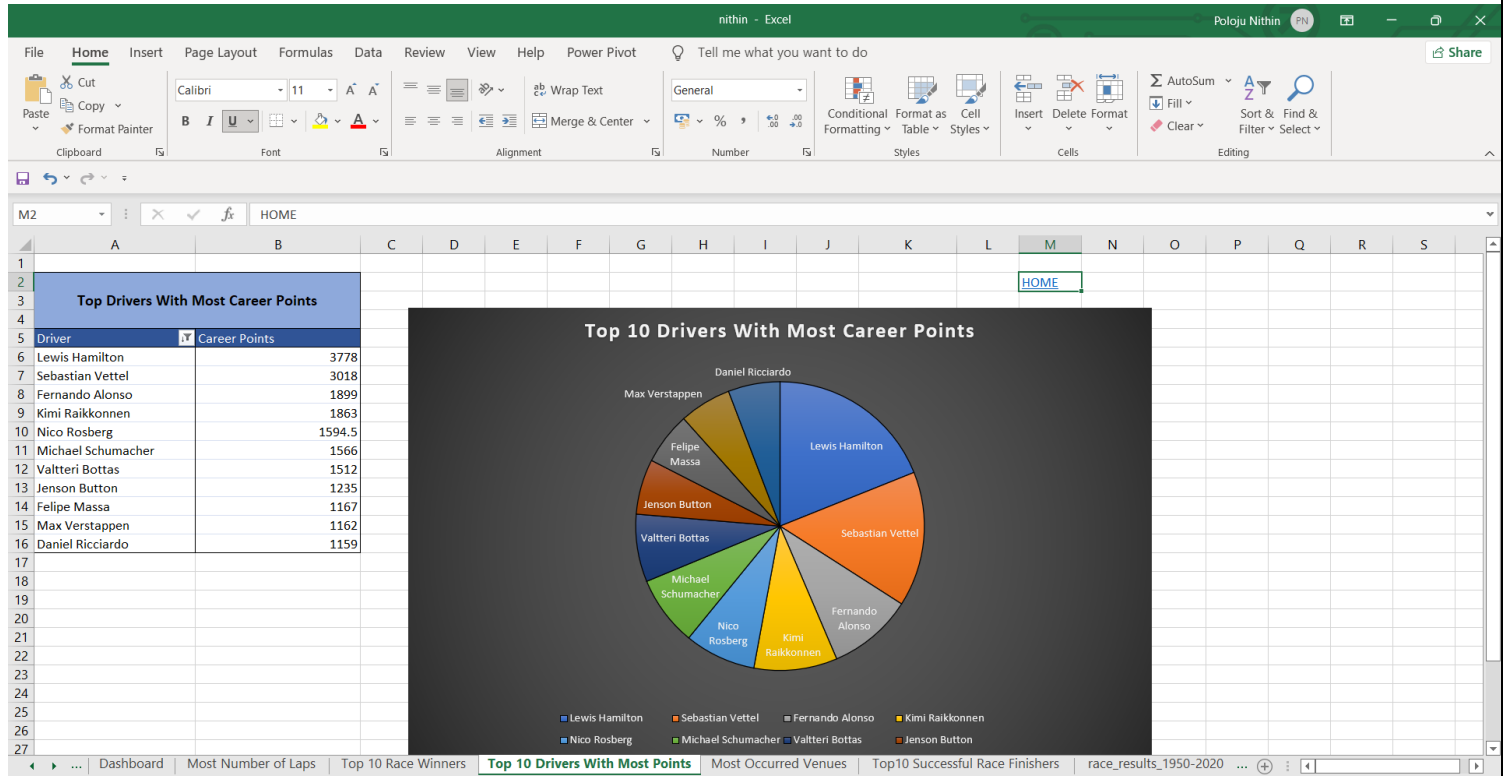Fernando Alonso

Kimi Raikkonnen

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Daniel Ricciardo

Top Drivers With Most Career Points	
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Top 10 Drivers With Most Career Points

4.Most Occurred venues

italy

great-britain

monaco

belgium

germany

france

canada

spain

brazil

united-states
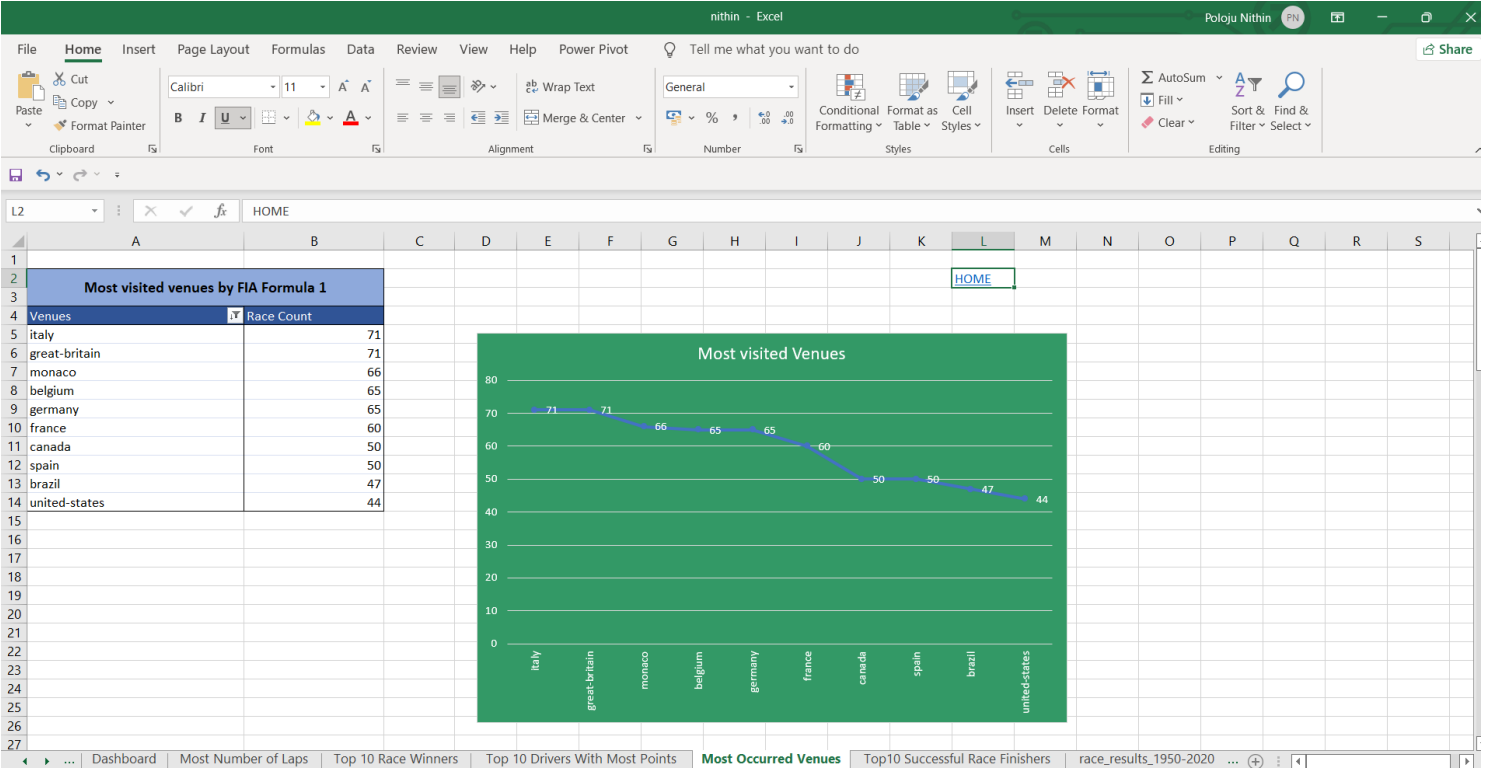
5.Top 10 succesful race finishers

Kimi Raikkonnen

Fernando Alonso

Lewis Hamilton
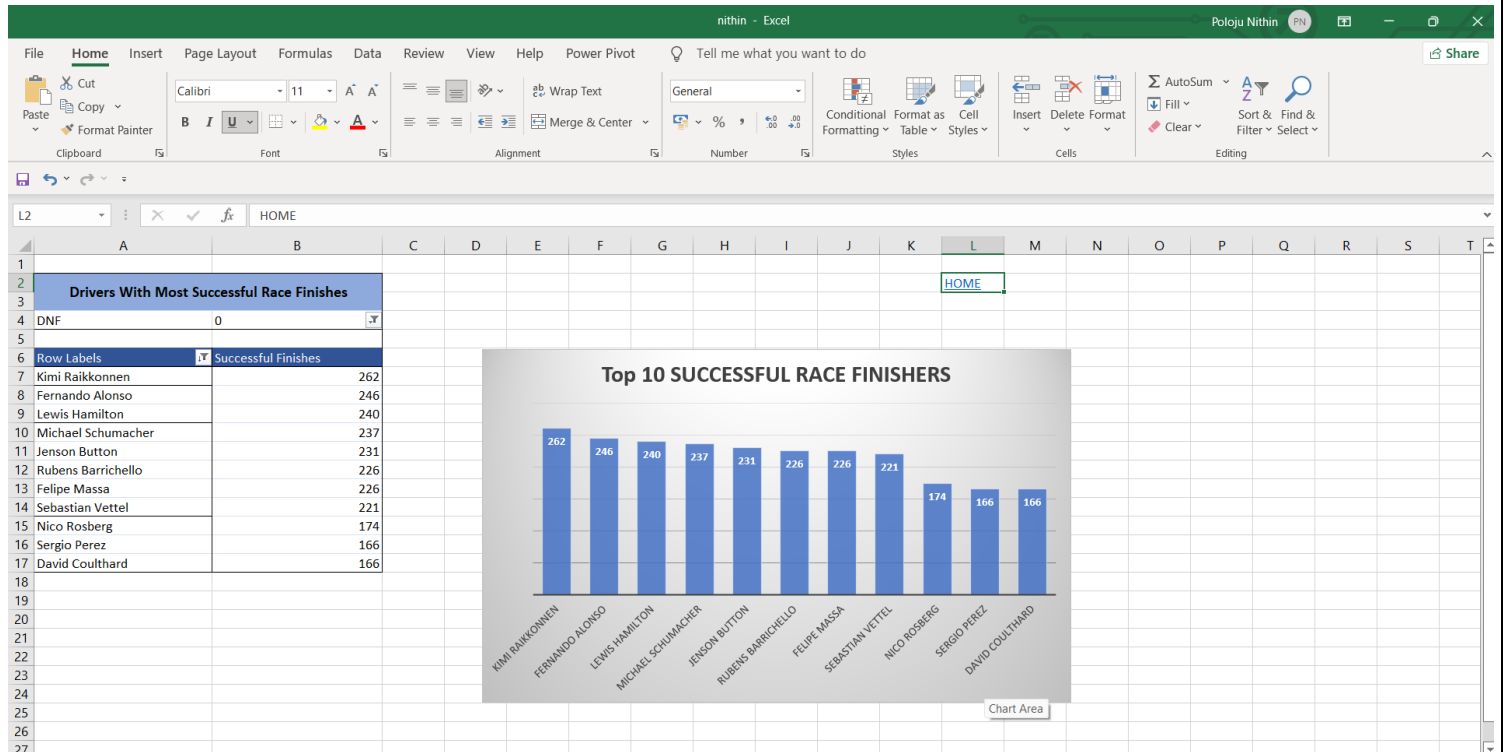
Michael Schumacher

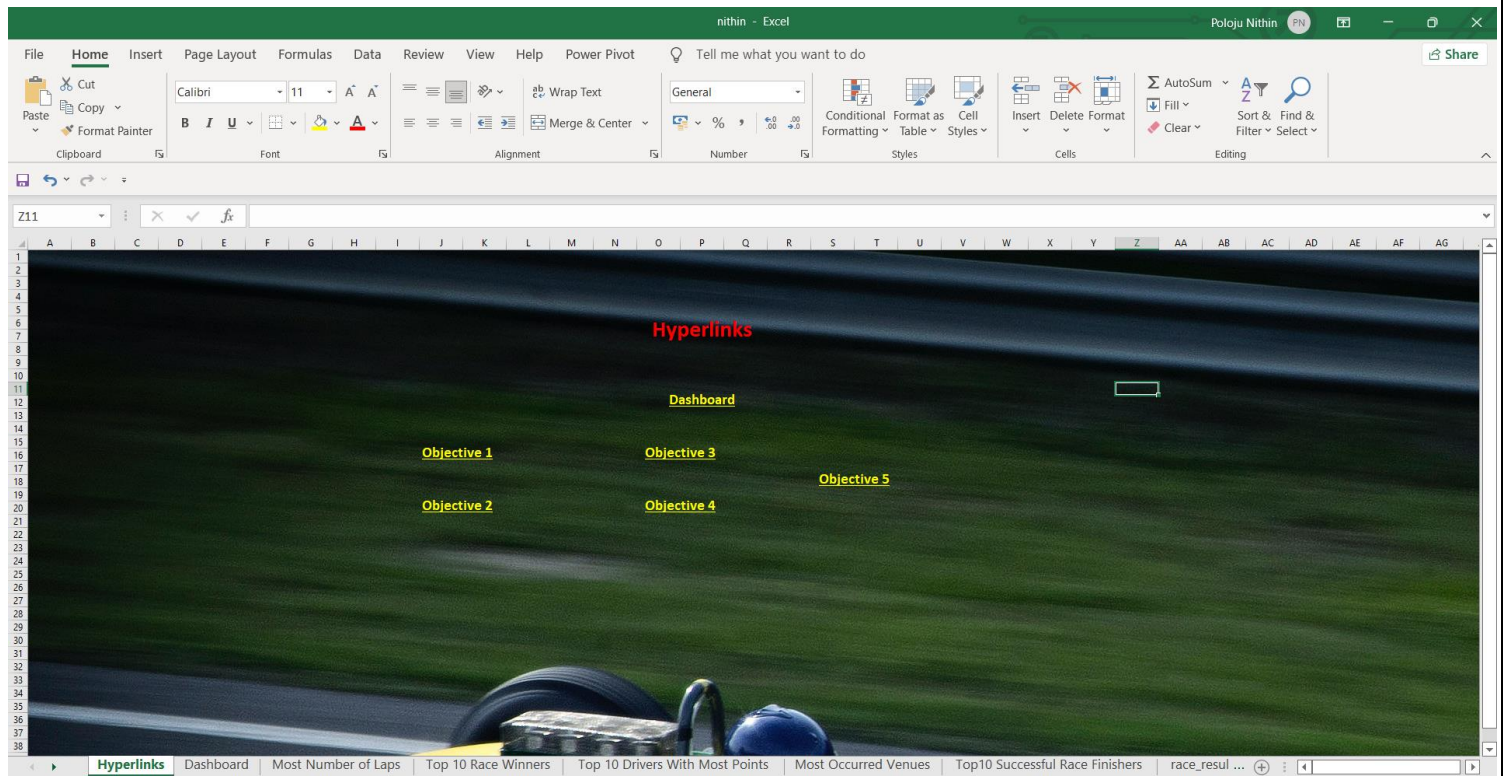Jenson Button

Rubens Barrichello

Felipe Massa
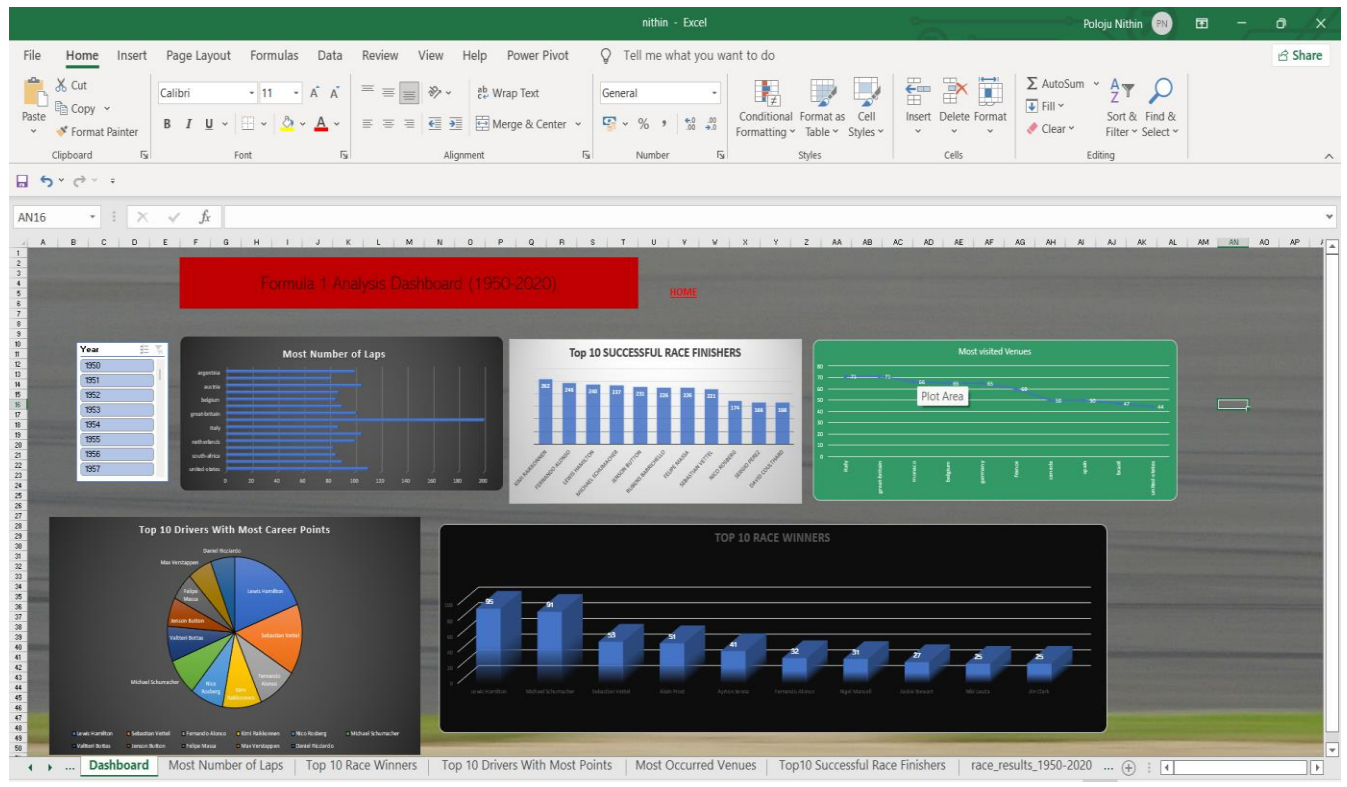
Sebastian Vettel

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Drivers With Most Successful Race Finishes

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David Coulthard	166

Top 10 SUCCESSFUL RACE FINISHERS

262 246 240 237 231 226 226 221 174 166 166

KIMI RAIKKONNEN, FERNANDO ALONSO, LEWIS HAMILTON, MICHAEL SCHUMACHER, JENSON BUTTON, RUBENS BARRICHELLO, FELIPE MASSA, SEBASTIAN VETTEL, NICO ROSBERG, SERGIO PEREZ, DAVID COULTHARD

Hyperlinks:

Hyperlinks

Dashboard

Objective 1   **Objective 3**

Objective 5

Objective 2   **Objective 4**

Hyperlinks | Dashboard | Most Number of Laps | Top 10 Race Winners | Top 10 Drivers With Most Points | Most Occurred Venues | Top10 Successful Race Finishers | race_resul ...

FINAL DASHBOARD:

BIBLIOGRAPHY:

➢ Dataset source:

https://www.kaggle.com/aadiltajani/fia-f1-19502019-data?
select=race_results_1950-2020.csv

➢ Dashboard Background Image:

https://unsplash.com/photos

➢ Information about Data Management:

https://www.blue-pencil.ca/what-is-data-management-and-why-it-is- important/