

Department of Data Science Results Analysis Report

Introduction

This report presents an analysis of student performance data to evaluate trends across different subjects and sections. Key insights include pass/fail distributions, average scores by subject, and overall section-wise performance.

Abstract

This project is a **Department of Data Science Results Analysis** that processes student performance data to generate insights on pass/fail counts by section and subject. The project includes visualizations that display results breakdown across different sections, helping in analyzing academic performance trends and identifying areas of improvement.

Features

- **Section-wise Pass/Fail Analysis:** Visualizes the number of students who passed or failed in each subject, separated by section.
- **Subject-wise Performance Comparison:** Compares performance metrics across subjects to give a clear view of student strengths and weaknesses.
- **Data Cleaning & Transformation:** Prepares raw data by handling missing values and converting data types as needed.
- **Interactive Data Visualization:** Generates visual charts (bar plots) to illustrate performance statistics.

Dataset

The dataset includes columns such as:

- Roll Number, Name, Section
- Subject names (e.g., BEFA, DM, OS, DBMS, DPA) with corresponding status columns (Befa_Status, Dm_Status, etc.)
- Total_Marks, SGPA, CGPA, Subjects_due

Abbreviations:

BEFA - Business Economics and Financial Analysis

DM - Discrete Mathematics

OS - Operating Systems

DBMS - Database Management Systems

DPA - Data Preparation and Analysis

ES - Environmental Science

SD-Lab - Skill Development Lab

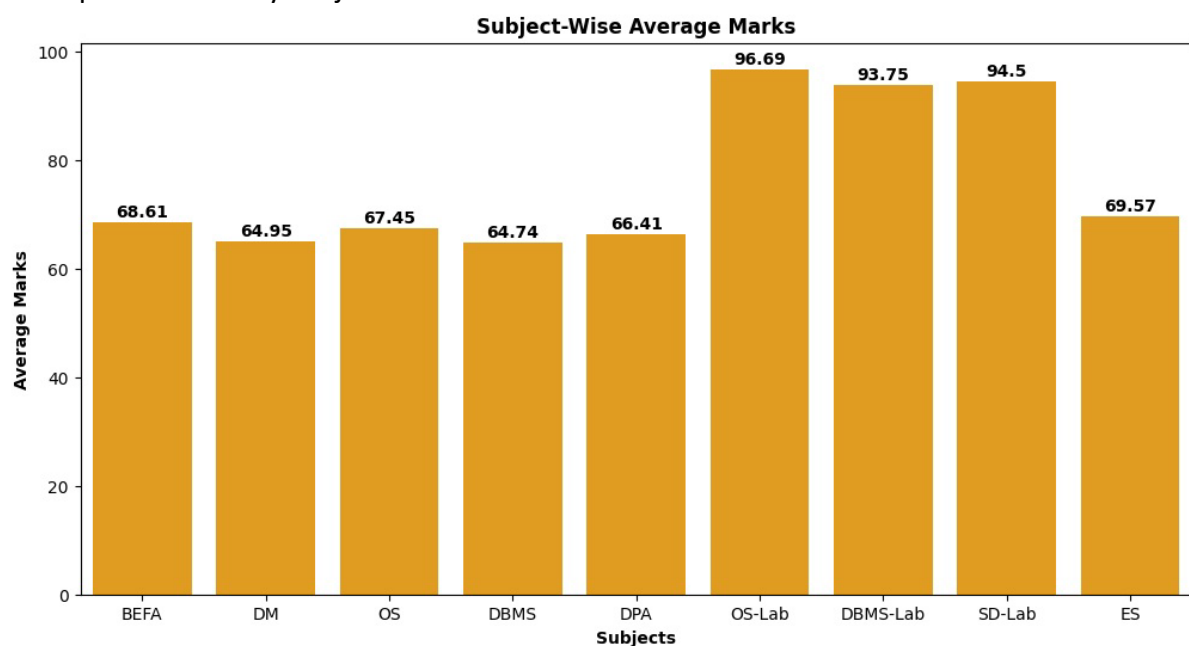
Project Structure

- **data.csv**: Contains the student performance data used in this analysis.
- **DataScience-Results-Analysis.ipynb**: Jupyter Notebook with data processing, analysis, and visualization code.
- **app.py**: Contains the Selenium code for Data Scraping

Insights and Findings

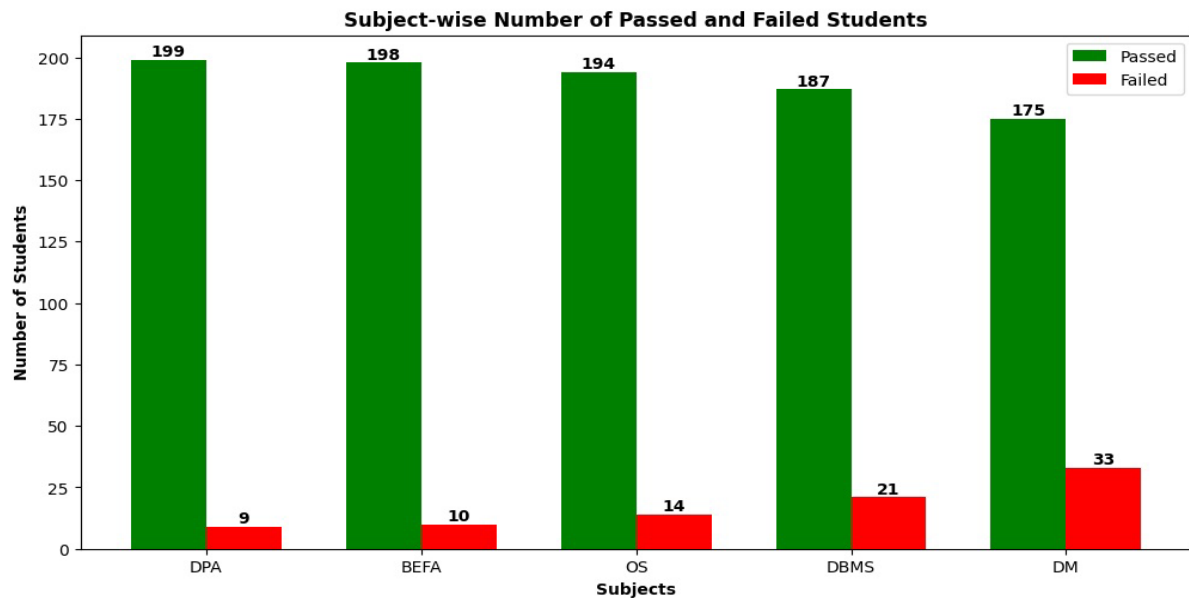
1. Subject-Wise Average Marks

Insight: Subjects such as `OS-Lab`, `DBMS-Lab`, and `SD-Lab` have higher average marks compared to theory subjects like `DM` and `DBMS`.



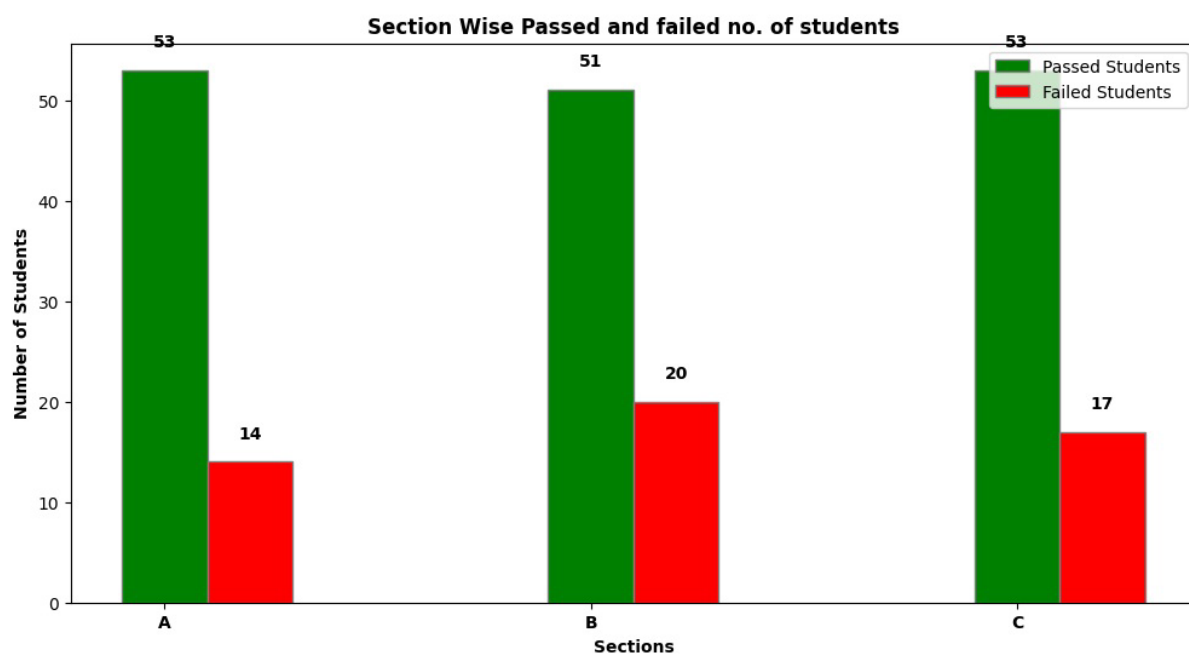
2. Subject-Wise Pass/Fail Counts

Insight: Higher pass percentages were observed in subjects like `DPA` and `BEFA`, while `DM` had a lower pass percentage.



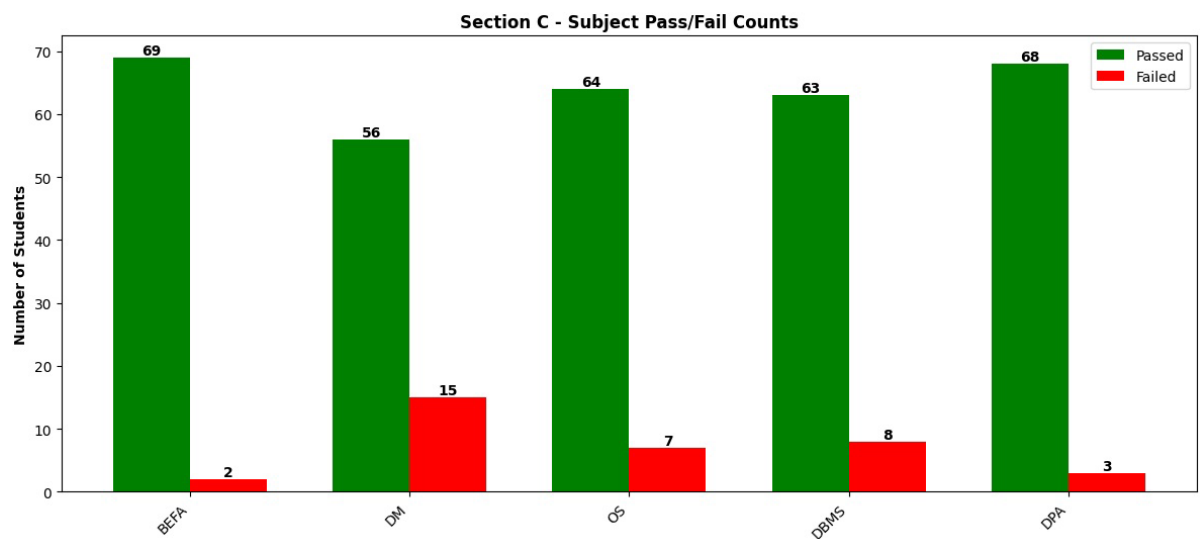
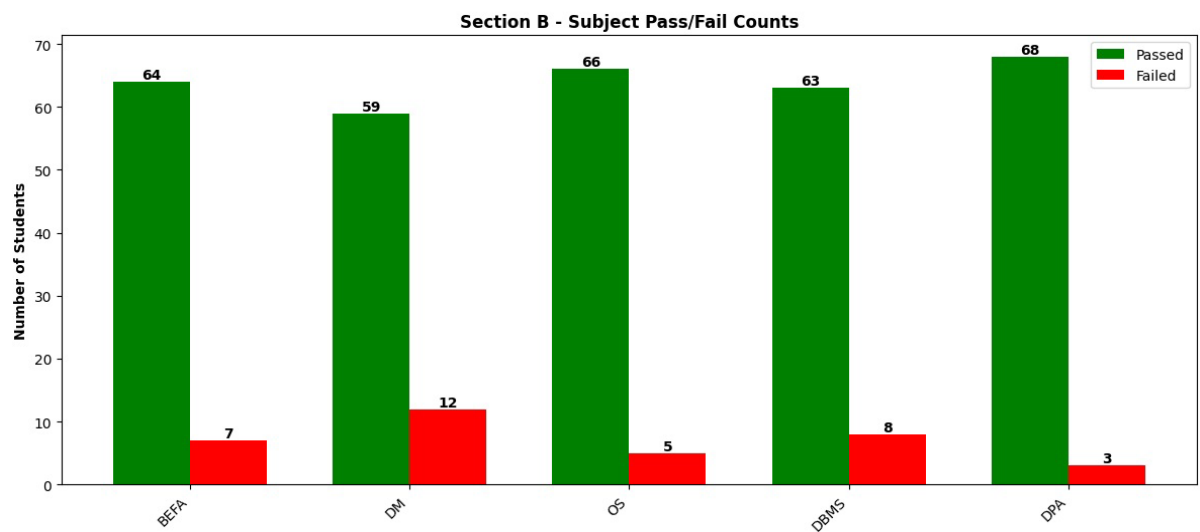
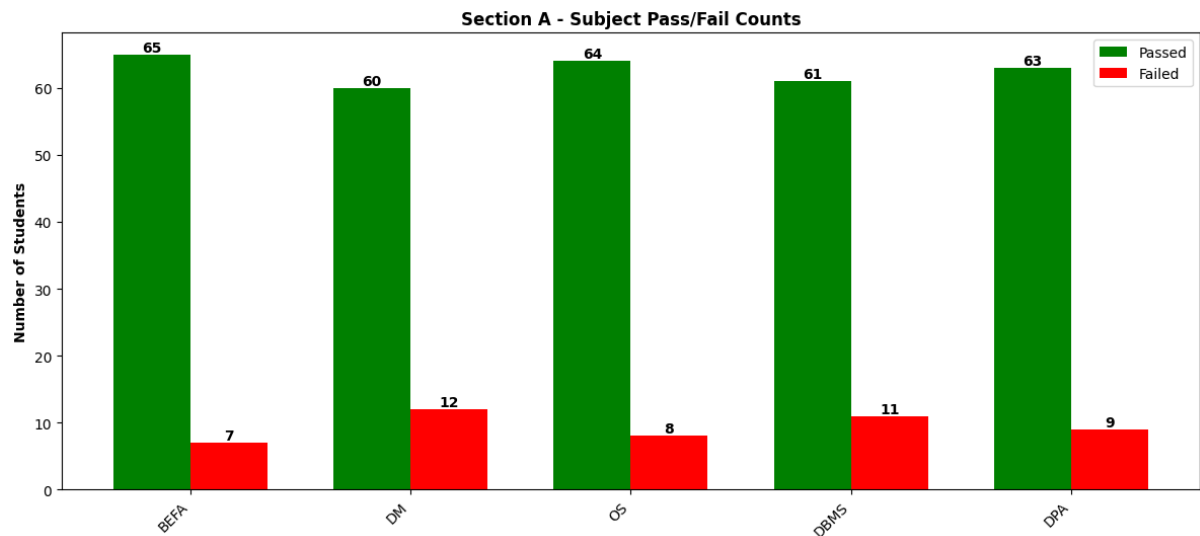
3. Section-Wise Pass/Fail Counts

Insight: Sections like 'A' and 'C' has high and equal no. of students passed and the 'B' section has the high inn no. of students failed



4. Subject-Wise Pass/Fail Counts - Section-Wise

Insight: Higher pass percentages were observed in subjects like `DPA` and `BEFA`, while `DM` had a lower pass percentage in each Section.



5. Top 10 Students by CGPA and SGPA

Insight: Students with high SGPA and CGPA tend to have consistently strong marks across multiple subjects.

- **Top 10 Students by SGPA**

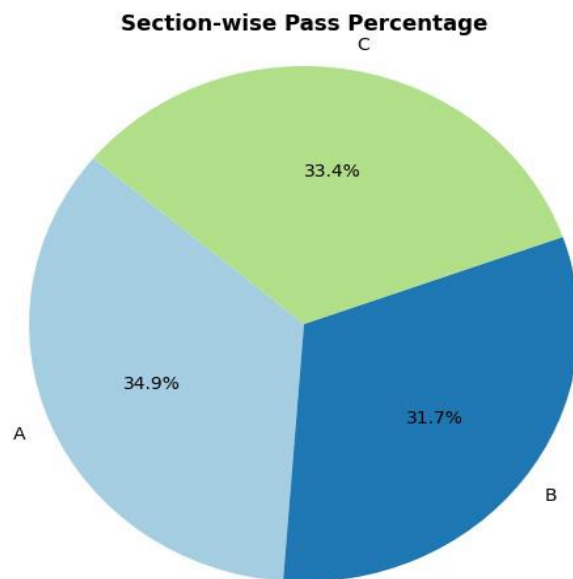
Roll Number	Name	Total_Marks	SGPA	CGPA	Section
22J41A6701	A Vinayaka Sai	854	9.35	9.31	A
22J41A6747	Prodduturi Nikitha	863	9.35	9.51	A
22J41A6708	Bogala Aravindar Reddy	858	9.35	9.44	A
22J41A6732	Mali Sreeja	870	9.35	9.39	A
22J41A6738	Mitta Varshini	838	9.2	9.18	A
22J41A6760	Thota Pranusha	854	9.2	9.14	A
22J41A6713	Dundangi Govind	848	9.2	9.28	A
22J41A67J1	Sadiya	842	9.2	9.07	C
22J41A6719	Gopal Likhitha	854	9.15	9.45	A
22J41A6767	Armoor Rishika Reddy	846	9.15	9.48	B

- **Top 10 Students by CGPA**

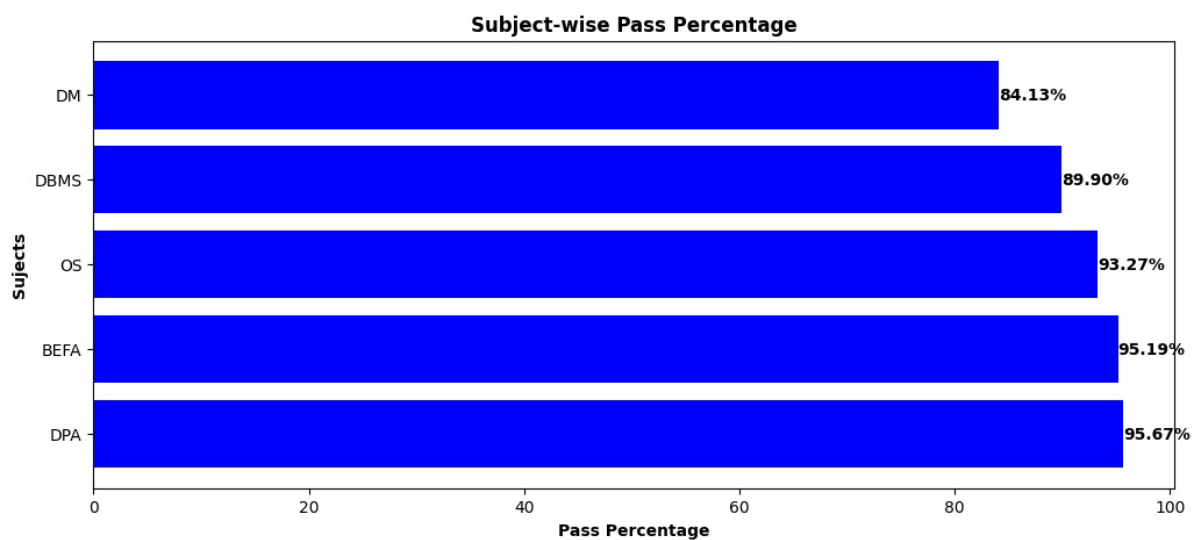
Roll Number	Name	Total_Marks	SGPA	CGPA	Section
22J41A6747	Prodduturi Nikitha	863	9.35	9.51	A
22J41A67K1	Vedam Venkata Sarma	832	8.85	9.5	C
22J41A67D7	Barki Pavani	853	9.15	9.49	C
22J41A6767	Armoor Rishika Reddy	846	9.15	9.48	B
22J41A6719	Gopal Likhitha	854	9.15	9.45	A
22J41A6708	Bogala Aravindar Reddy	858	9.35	9.44	A
22J41A67E6	Gnana Teja Kummara Giri	844	8.85	9.4	C
22J41A6732	Mali Sreeja	870	9.35	9.39	A
22J41A6701	A Vinayaka Sai	854	9.35	9.31	A
22J41A67F7	Kavali Sreenidhi	841	9.05	9.3	C

6. Section-Wise Pass Percentage

Insight: Section `A` had a slightly Higher pass rate while Section `B` had a slightly lower pass rate than Sections `A` and `C`, with room for improvement in theoretical subjects.



7. Subject wise pass percentage



8. Section-wise Analysis of Detained Students

Insight: Section A has higher detention rate

	Section	Detained Count
0	A	5
1	C	1