Engineering Branch Analysis - Data Analytics Report

Introduction

This document presents an analytical study on engineering branches using data visualization techniques. The study is based on three key aspects: enrollment vs placement, technological advancement, and higher education trends. Python, along with libraries like Pandas, Matplotlib, and Seaborn, was used to process and visualize the data efficiently.

Problem 1: Enrollment vs Placement Analysis

Objective: Analyze the number of students enrolled in different engineering branches and their placement percentages.

Analysis:

- Extract relevant columns from the dataset.

- Use a bar chart for comparison.

- Different colors enhance readability.

- X-axis: branches, Y-axis: count/percentage.

Findings from Chart:

- Identifies branches with high enrollment but low placements.

- Helps students in career decisions.

Problem 2: Technological Advancements Potential

Objective: Evaluate technology adoption and industry collaboration.

Analysis:

- Extract and sort relevant data.

- Use a heatmap for visualization.

- Darker colors indicate higher values.

Findings from Chart:

- Identifies branches with better industry collaboration.

- Encourages tech adoption improvements.

Problem 3: Higher Education & Research Opportunities

Objective: Analyze trends in higher education, research, and students going abroad.

Analysis:

- Extract and sort data.

- Use a bubble chart where:

  - X-axis: Higher education rate.

  - Y-axis: Research opportunities.

  - Bubble size: Number of students abroad.

  - Color: Represents branches.

Findings from Chart:

- Shows correlation between higher studies and research.

- Helps universities allocate research funding.

Conclusion

This analysis provides insights into different engineering branches. The visualizations help compare enrollments, placements, industry collaborations, and higher education trends, assisting students, educators, and policymakers in making data-driven decisions.