**GOVERNMENT COLLEGE OF ENGINEERING ERODE**

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B.E Electronics and Communication Engineering

Public Transport Efficiency Analysis

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**Data:**

In computing, data is information that has been translated into a form that is efficient for movement or processing. Relative to today's computers and transmission media, data is information converted into binary digital form. It is acceptable for data to be used as a singular subject or a plural subject.

**Data Collection:**

The following raw data is obtained from Southern Australian Government.It includes public transport boarding summary by Route, Trip, Stop and Week of Year. The data which is obtained is in the form of excel sheet

**Data cleaning:**

Data cleaning is a crucial step in the data analysis process, as it involves identifying and rectifying errors, inconsistencies, and inaccuracies in your dataset. Clean data is essential for accurate and reliable analysis. Here are some common data cleaning methods and techniques:

-Handling missing data

-Handling Duplicates etc.

Several automated data cleaning tools and libraries, such as OpenRefine, Trifacta, and Python libraries like pandas, offer functions and methods for data cleaning.

In this project Python library named Pandas is used to clean data.The Python Pandas library is a powerful data manipulation and analysis library that is widely used for data cleaning and preparation. It offers functions and methods for tasks like handling missing values, data transformation, and filtering

**Data Manipulation:**

Data manipulation is a fundamental step in data analytics that involves the transformation and restructuring of data to make it suitable for analysis. Effective data manipulation ensures that the data is organized, clean, and in the right format for deriving insights and making informed decisions.It involves tasks like filtering data,sorting data etc.Data Manipulation is done by python pandas library.Pandas is widely used in the data science and analytics community because of its ease of use and efficiency.

**Data Analysis:**

Analyze the collected data to identify trends, patterns, and issues in the transportation system. This analysis may involve the use of various statistical and geographical information system (GIS) tools.Here jupyter notebook is used to analyse data.Jupyter Notebook is an open-source web application that allows you to create and share documents containing live code, equations, visualizations, and narrative text. It's commonly used for data analysis and data science projects

**Data Visualization and Dashboards:**

Data visualization is the graphical representation of data to help people understand the information contained in the data more easily. Visualizations make patterns, trends, and insights in the data more apparent. Here the analysed data can be visualised by using cognos ibm and matplot python library.The data can be visualised in the form of graphs,tables,charts etc.