INEURON

LOW-LEVEL DESIGN (LLD)

HR ANALYTICS - ABSENTEEISM

BY -

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1. Introduction

1.1 What is Low-Level Design Document?

The goal of the Low-level design document (LLDD) is to give the internal logic design of the actual program code for the Sales Analysis dashboard. LLDD describes the class diagrams with the methods and relations between classes and programs specs. It describes the modules so that the programmer can directly code the program from the document.

1.2 What is Scope?

Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

1.3 Project Introduction

- HR is not just about hiring people it is an ocean of its own. HR department goes through a constant journey of finding, selecting, onboarding and monitoring the right talent. You are required to use analytics concept to provide a smooth monitoring of workforce for the HR department.
- This data set is suitable for identifying pockets of absence in the organization. These pockets may require interventions. 'Absent Hour' will be used as a dependent variable. In addition, age and length of service may also be associated with absence The data set can also be used as an exercise set to predict absence using decision trees or linear models.
- This data set is quite straightforward. It is large but still manageable in software like SPSS or Excel. You may have to code a number of nominal variables into number values before you can do your analysis but on top of that, the data itself doesn't pose much of a challenge.
- This HR data set focuses on absence at work. The data set contains 740 rows and 21 columns of data.
  The data set contains a number of employee IDs. Each row represents a certain quantity of absence – meaning that one employee can have multiple rows.
- Information on employees include the number of children, work load, distance from work, transportation expense, education, height, weight, BMI, and absenteeism time in hours. Other information includes the season, month of absence, day of absence, and day of the week.
- This data set can help you find predictors of absence. Potential analyses could be to see if there is an association between BMI and absence, as well as season, work load, distance from work and the other factors in the data set.


Power BI


python


jupyter

2.Problem Statement

- The challenge of this data set is mostly in structuring the data. An individual employee has multiple records. These need to be combined prior to analysis.
- This data set also enables you to do longitudinal research.
- Datasets is available in the given link. This enormous HR data set focuses on employee absence. It contains a staggering 8335 rows and 13 columns of data.
- The data set contains employee numbers and names, gender, city, job title, department, store location, business unit, division, age, length of service, and the number of hour absent.

3. Dataset Information

- Employee number
- Surname
- Given Name
- Gender
- City
- Job Title
- Department Name
- Store Location
- Division
- Age
- Length Service
- Absent Hours
- Business Unit

4.Architecture description

1. Raw Data Collection

The Dataset was taken from iNeuron's Provided Project Description Document

https://drive.google.com/drive/folders/1HRRC23RoCI0MwhV3P_cUz47TNOg4R-_2?usp=sharing

2. Data Pre-Processing

Before building any model, it is crucial to perform data pre-processing to feed the correct data to the model to learn and predict. Model performance depends on the quality of data fed to the model to train. This Process includes a) Handling Null/Missing Values b) Handling Skewed Data c) Outliers Detection and Removal

3. Data Cleaning

Data cleaning is the process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset. a) Remove duplicate or irrelevant observations b) Filter unwanted outliers c) Renaming required attributes

4. Exploratory Data Analysis (EDA)

Exploratory Data Analysis refers to the critical process of performing initial investigations on data to discover patterns, spot anomalies, test hypothesized check assumptions with the help of summary statistics and graphical representations.

5. Reporting

Reporting is a most important and underrated skill of a data analytics field. Because being a Data Analyst you should be good in the easy and self-explanatory report because your model will be used by many stakeholders who are not from a technical background.

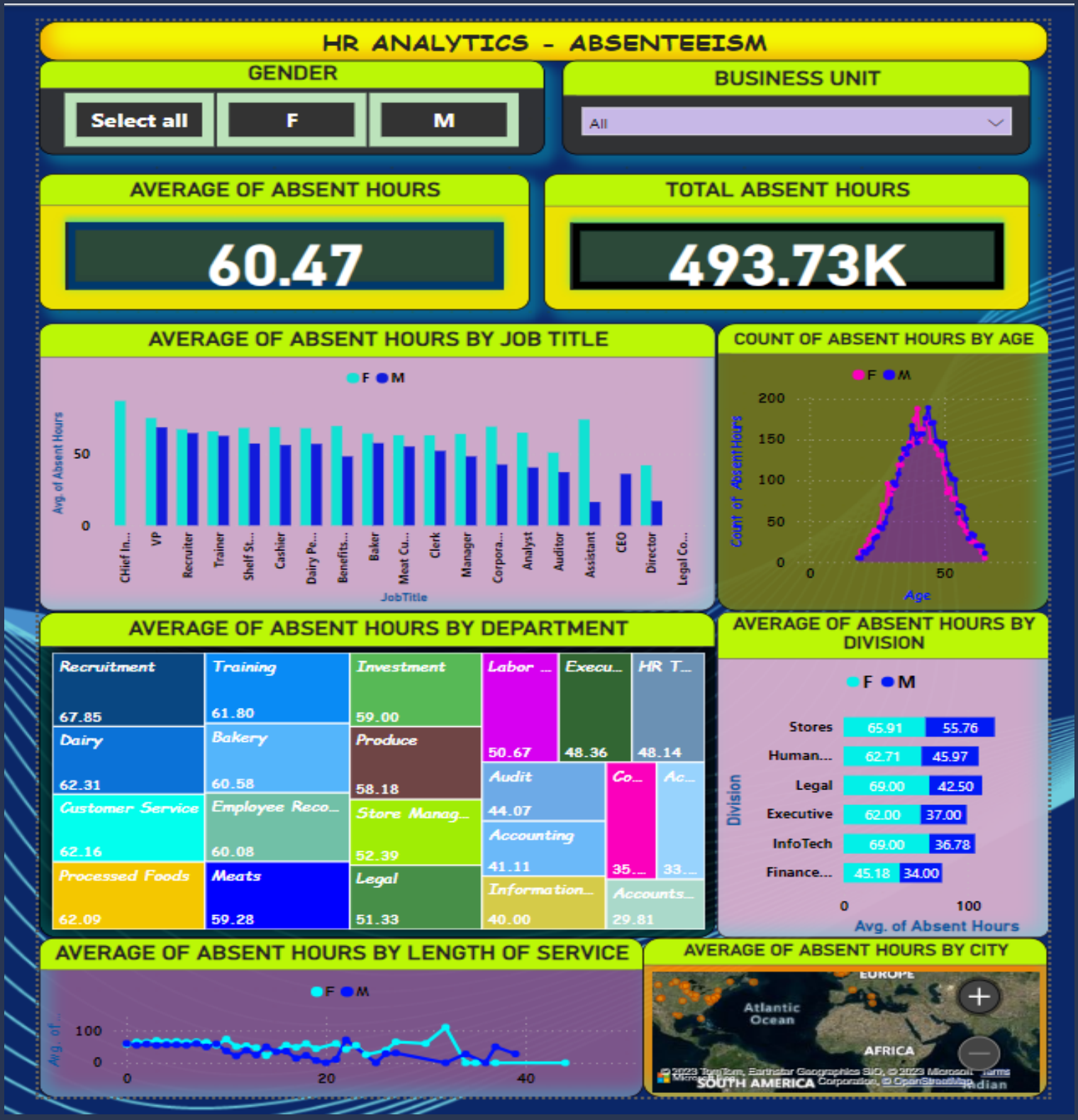
a) High-Level Design Document (HLD)
b) Low-Level Design Document (LLD)
c) Architecture
d) Wireframe
e) Detailed Project Report
f) PowerPoint Presentation
g) Dashboard
h) Demo video
i) Linked in post

5. Modelling

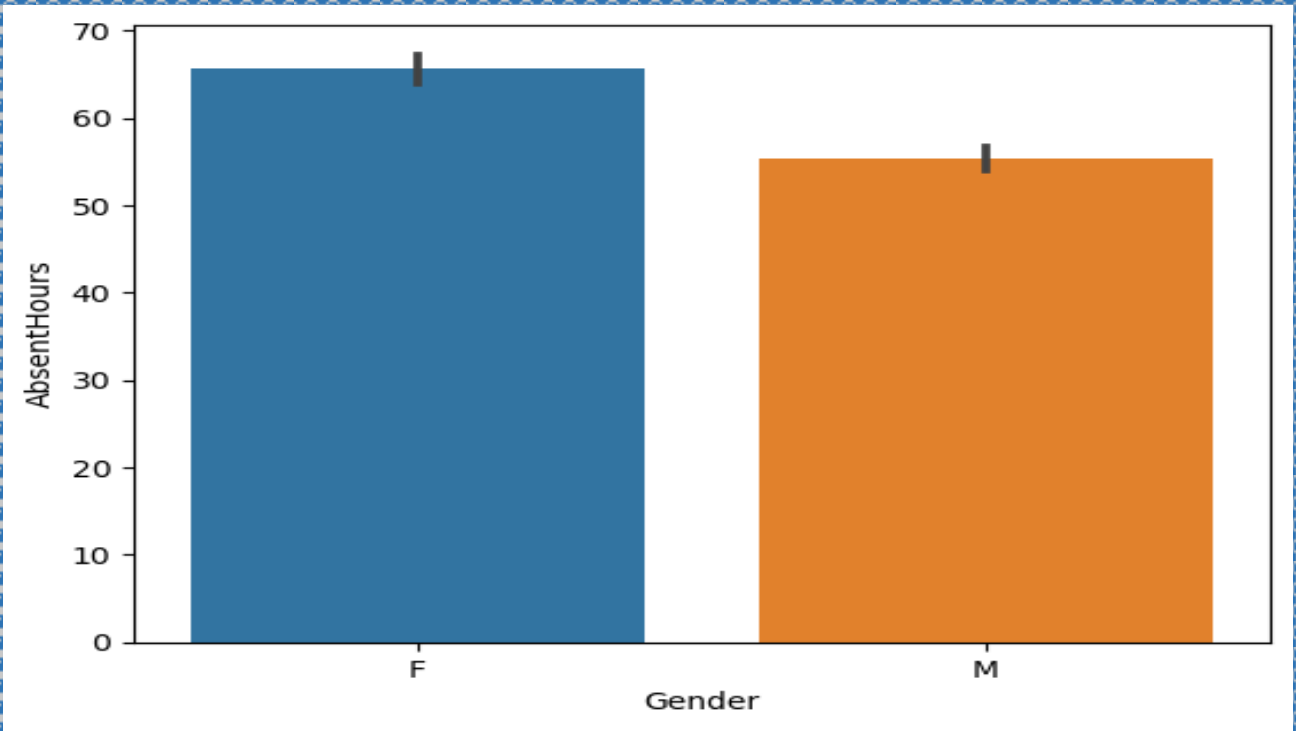
Data Modelling is the process of analyzing the data objects and their relationship to the other objects. It is used to analyze the data requirements that are required for the business processes. The data models are created to store the data in a database. The Data Model's main focus is on what data is needed and how we have to organize data rather than what operations we have to perform.

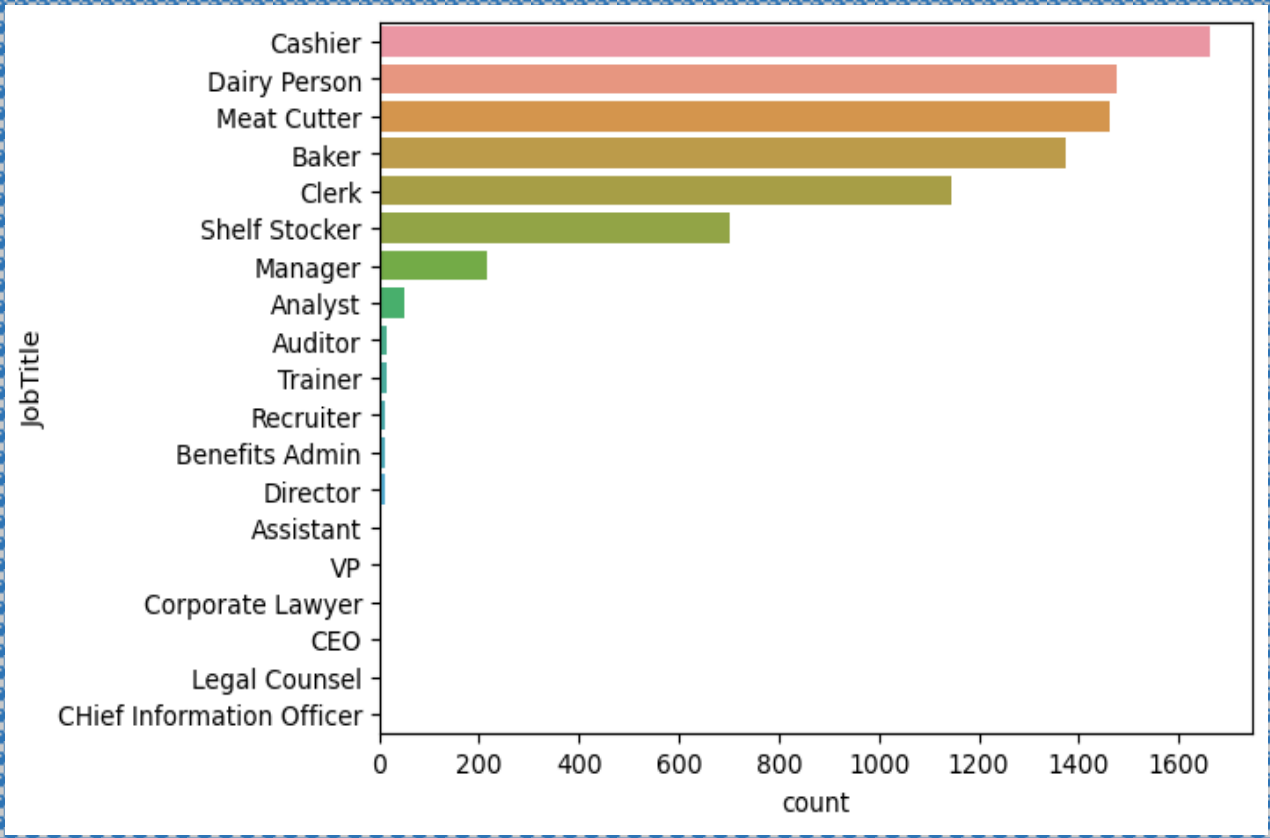
6. Deployment

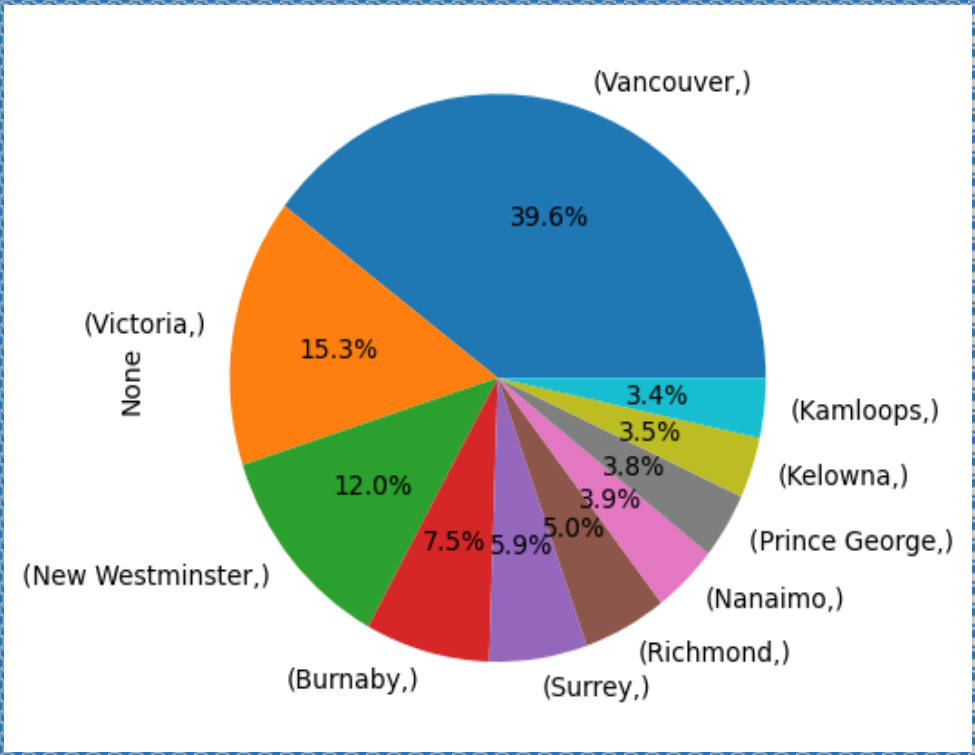
Dashboard created on Power Bi



EDA IN PYTHON-



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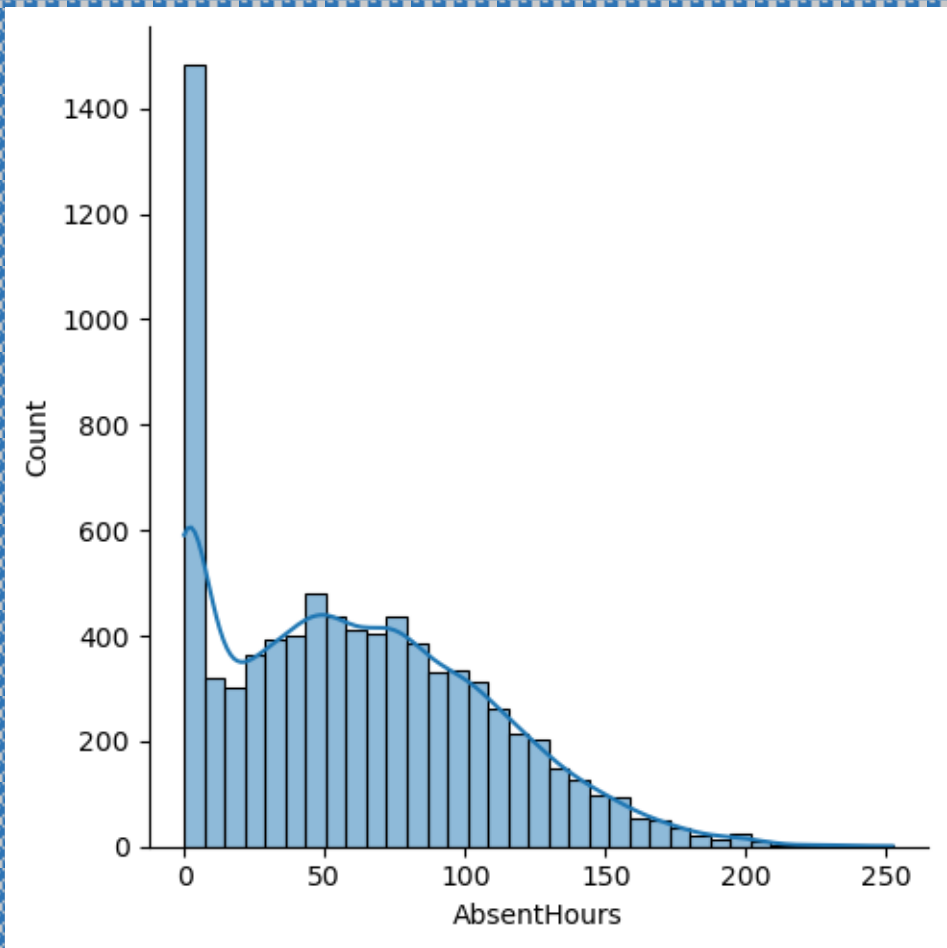
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1200
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800
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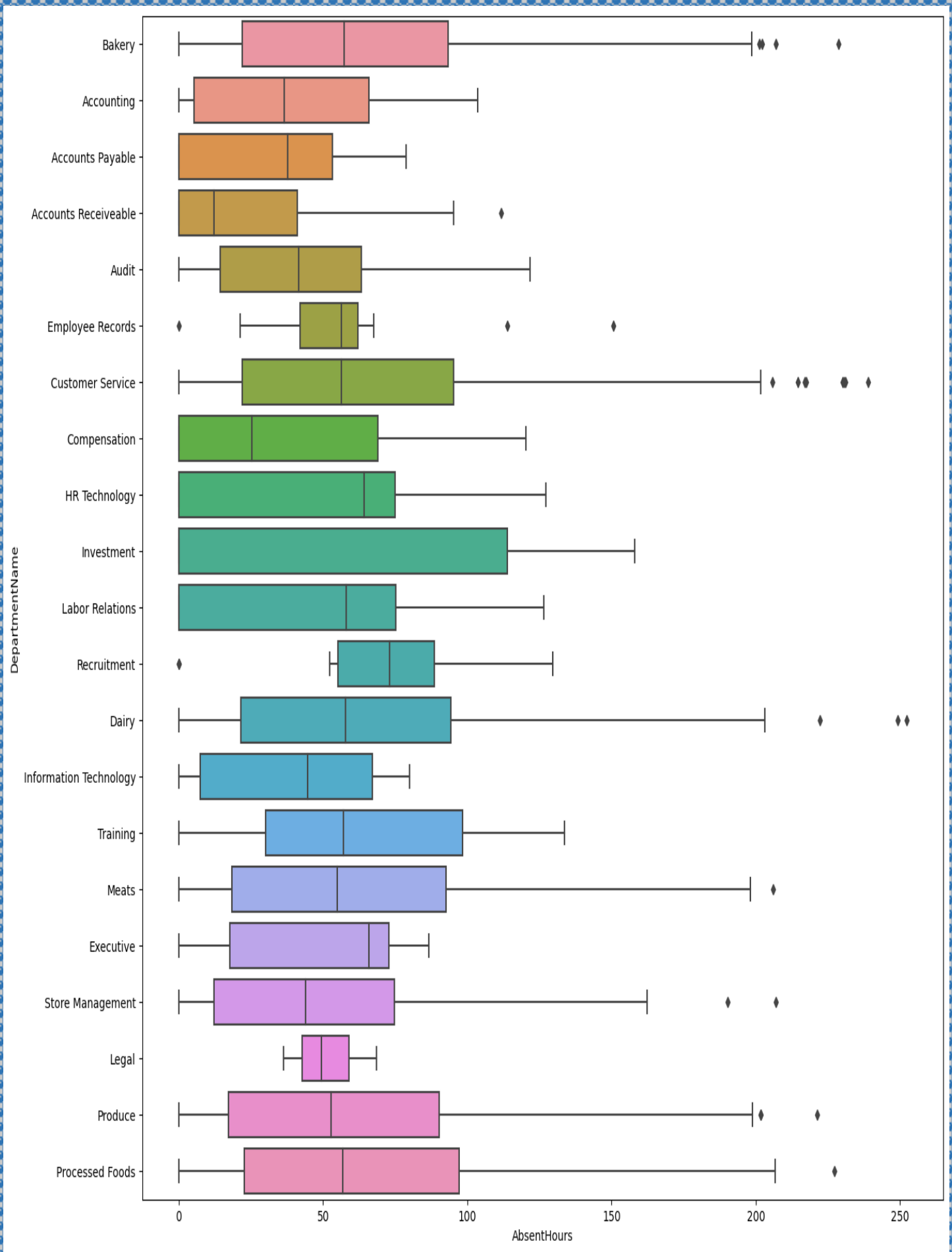
Count
0
50
100
150
200
250
AbsentHours


Bakery
Accounting
Accounts Payable
Accounts Receiveable
Audit
Employee Records
Customer Service
Compensation
HR Technology
Investment
Labor Relations
Recruitment
Dairy
Information Technology
Training
Meats
Executive
Store Management
Legal
Produce
Processed Foods
DepartmentName
0
50
100
150
200
250
AbsentHours

THANK YOU