EMPLOYEE ATTRITION

Unveiling insights that combat attrition

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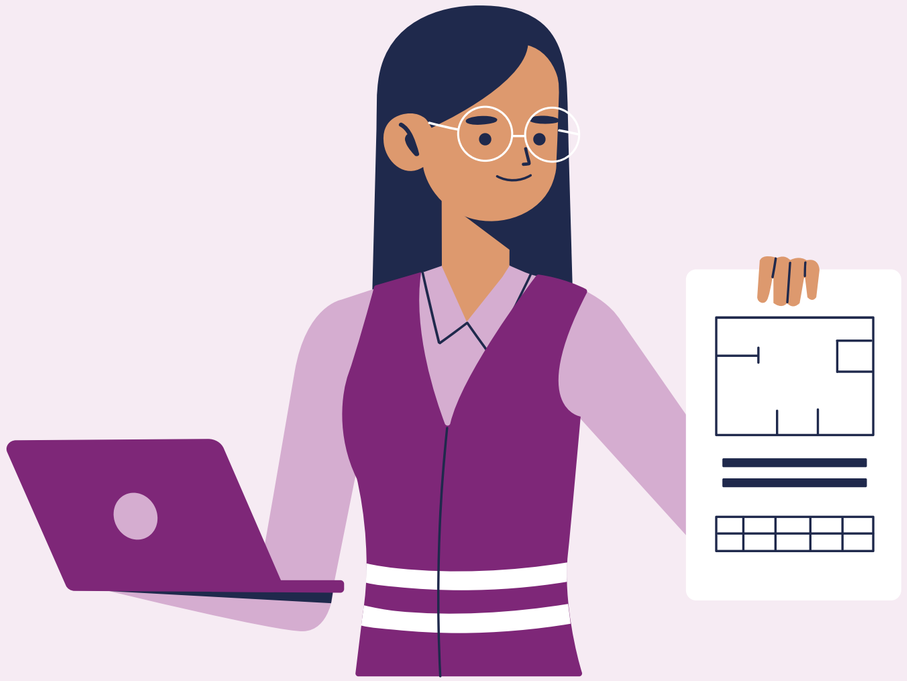
INTRODUCTION

- Employee attrition is defined as employees leaving their organizations for unpredictable or uncontrollable reasons.
- Various factors are directly or indirectly responsible for attrition.
- They include lack of professional growth, hostile work environment, or declining confidence in the company’s market value.
- Weak leadership is another factor that often drives attrition among employees.

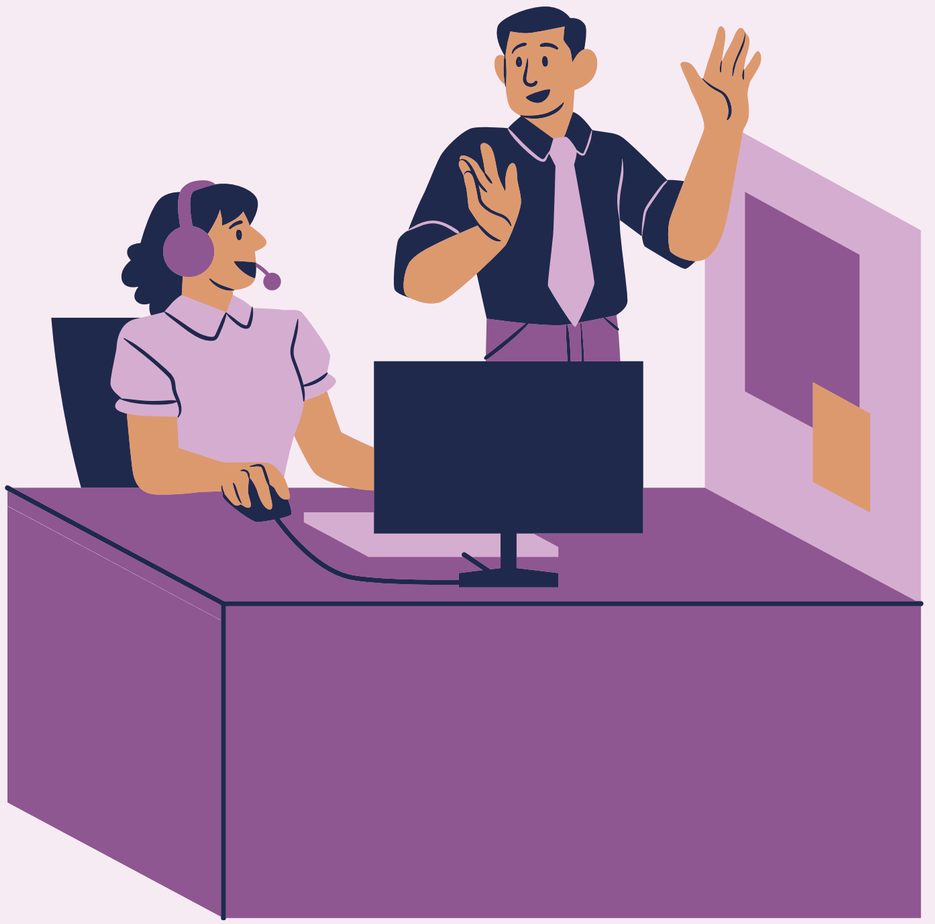


OBJECTIVE

- The aim of this data science project is to figure out the possible reasons with high probability that leads to increasing attrition in a company.
- By analysis the provided data, the project is able deliver a predictive model to determine attrition of an employee.

MAIN KPI’S

- KPI stands for key performance indicator, a quantifiable measure of performance over time for a specific objective.
- The KPI’s obtained through the given dataset that helped in determining the attrition rate are:
  - number of companies worked
  - total working years
  - department
  - marital status and
  - total years at the company.



ANALYSIS PROCESS

DATA ACQUISITION

DATA INSPECTION

DATA CLEANING

EXPLORATORY DATA ANALYSIS

LABEL ENCODING

TRAINING THE MODEL

FITTING THE MODEL

FEATURE SCALING

HYPER-PARAMETER TUNING

TOOLS USED

The analysis was done using various tools.

PREDICTIVE MODEL

Language : Python
IDE : Jupyter Notebook
Libraries :

- numpy
- pandas
- scikitlearn
- matplotlib
- seaborn

ANALYSIS

Tableau

MODEL CHOOSEN

- By fitting the trained data into various predictive models, on the basis of the accuracy score, the
- **XGB Classifier** from the **XGBoost** library showed efficient results.
- XGBoost is an optimized distributed gradient boosting library designed for efficient and scalable training of machine learning models.
- It is an ensemble learning method that combines the predictions of multiple weak models to produce a stronger prediction.

LINKS:

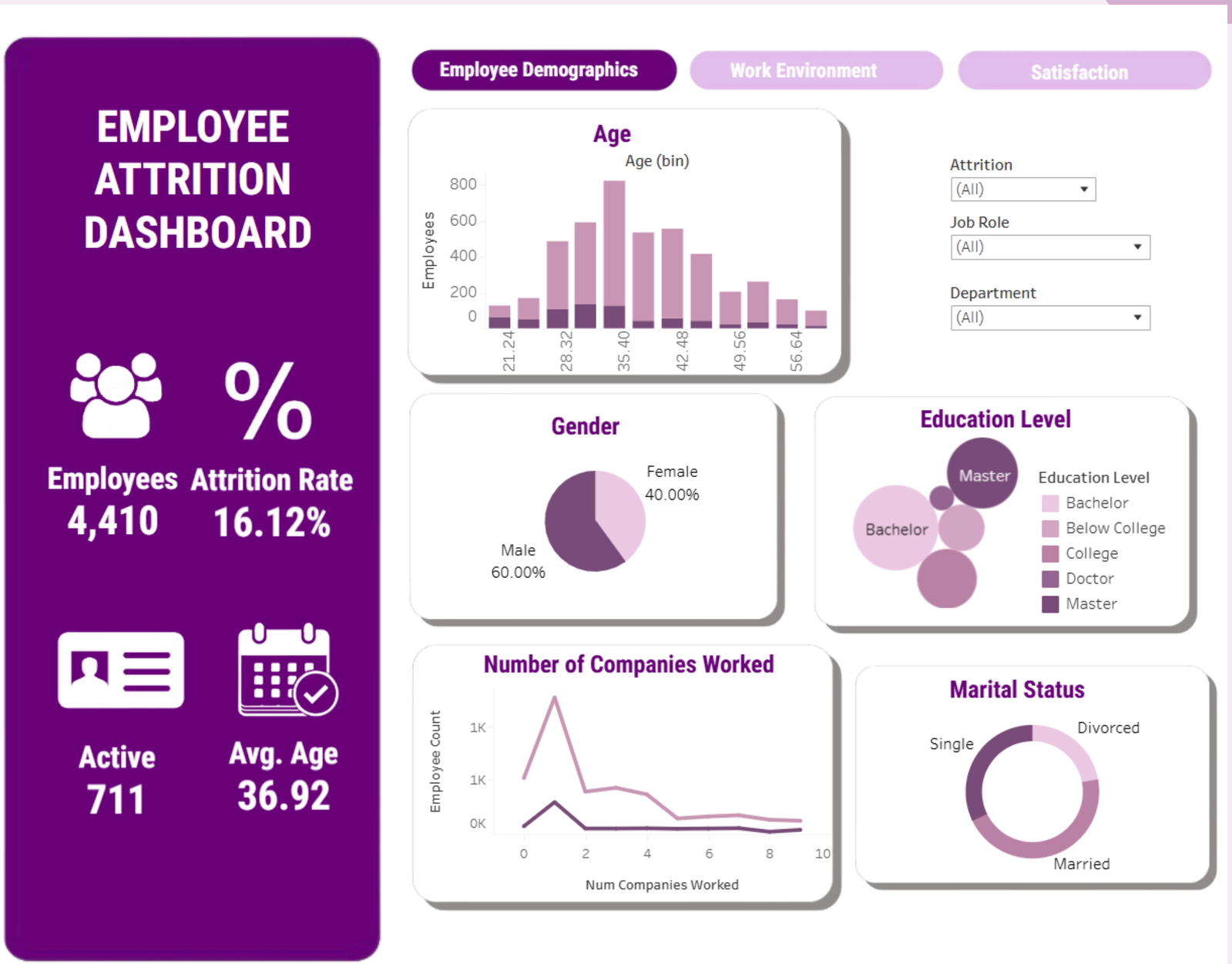
Click on these following links that will direct you to the projects:

Tableau Dashboard

Github Link

MOCK DASHBOARD

MOCK DASHBOARD



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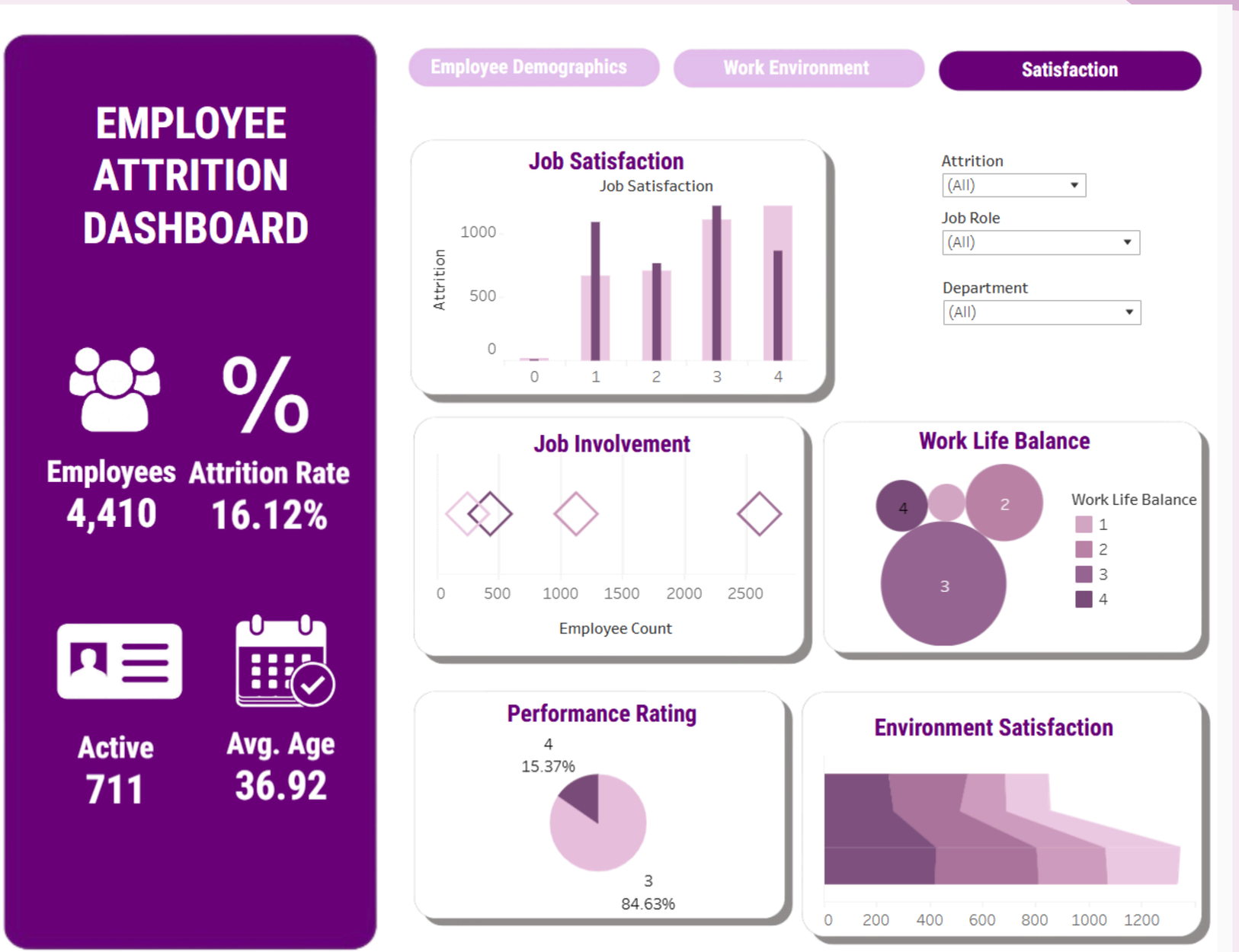

MOCK DASHBOARD

CONCLUSION

1. The most influential factors that can lead to attrition are the number of companies worked, total working years, the department they are working under, marital status and total years at the company.
2. The XGBoost gradient boosting classifier had provided the highest accuracy score and hence chosen for the predictive model.
3. This predictive model is efficient and reliable.