

Employee Attrition Analysis

Group No: 2

Members:

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Objective

Employee attrition is defined as departure of employees from their organization for unpredictable and uncontrollable reasons. This project aims to predict employee attrition for a company or an organization within a few months using machine learning algorithms, make analysis and give feedback to the human resources of that company or organization. The dataset contains several features such as employee's age, monthly income, work-life balance, business travel, years at company etc.

Importance Of The Project

This project is crucial for companies so that human resources can adjust hiring strategies and turnovers. Turnover might be costly due to recruitment, training and lost productivity. The risk of employees leaving can be identified with this project, allowing proactive measures to retain valuable talent and reduce the financial impact of turnovers. The project can help identify factors that lead to employee attrition. Understanding these factors can enable companies or organizations to implement targeted retention strategies such as improving work conditions, offering career development opportunities.

Timeline

30/10/2023-05/11/2023

A reliable dataset is found, visualized and organized.

06/11/2023-12/11/2023

The machine learning model is developed, optimized and tested.

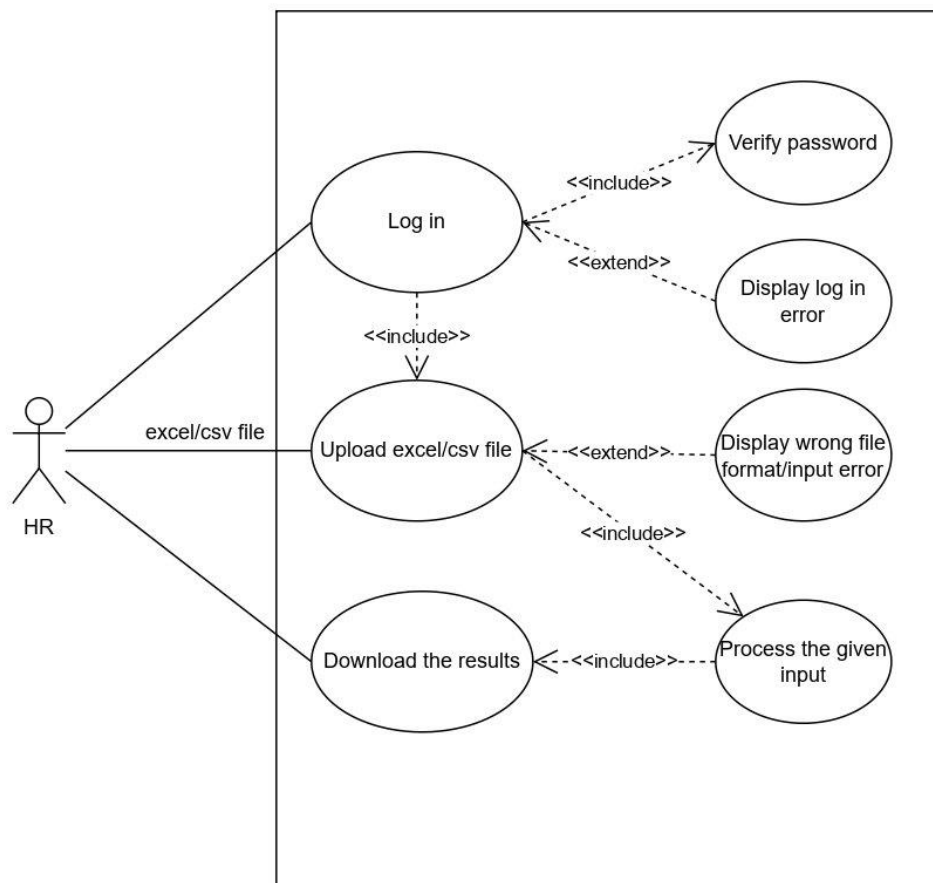
13/11/2023-13/12/2023

The web application is designed and the model is integrated with the API.

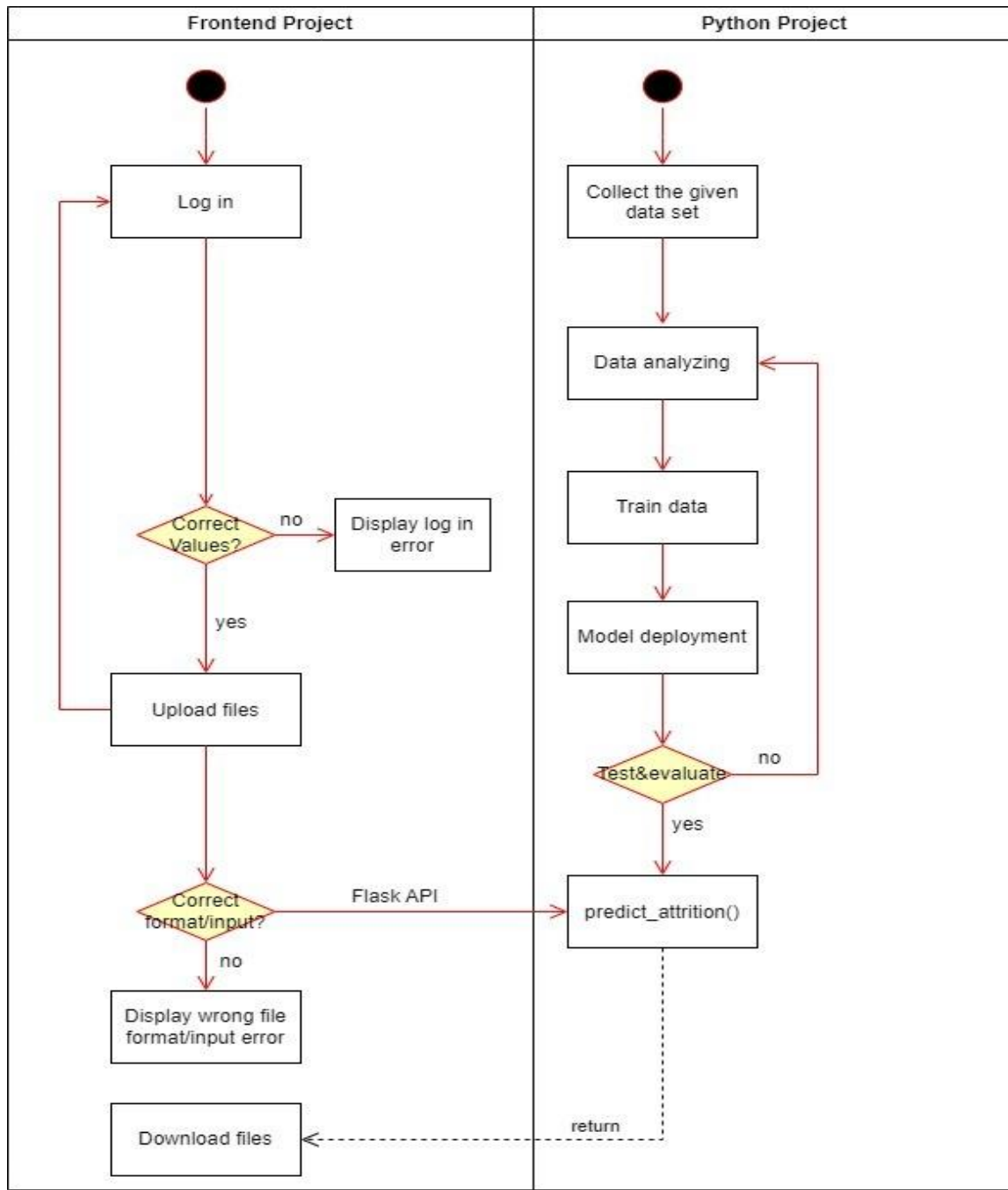
Requirements

- The system should allow uploading excel and csv files.
- The system should inform the user about the file format.
- The system should be able to write and return csv and excel files.
- The system should allow adding and removing users.
- The system should warn the user if a wrong formatted file is uploaded.

Use Case Diagram



Flow Chart Diagram



Test Cases

Test Cases	Examples
Accuracy	0.9047619047619048
Confussion Matrix	[[244 4] [24 22]]
F1 score	0.6111111111111112
Precision score	0.8461538461538461
Recall score	0.4782608695652174

Expected System Responses

Activites	System responses (Success/Fail)
Registering	Directing to uploading page / "Use a valid ..."
Logging in	Directing to uploading page / "Incorrect email/password"
Uploading files	Directing to downloading page / "Wrong formatted file, please use excel/csv file" ,"Wrong inputs given, please adjust the file as the example"

References

<https://www.linkedin.com/pulse/employee-attribution-prediction-project-analysis-research-noor-saeed/>

<https://www.analyticsvidhya.com/blog/2021/11/employee-attribution-prediction-a-comprehensive-guide/>

Dataset: <https://www.kaggle.com/datasets/pavansubhasht/ibm-hr-analytics-attribution-dataset>