



Low Level Document (LLD) Employee Attrition Prediction

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DECLARATION

We declare that this written submission represents us ideas is our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources.

We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission.

We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Revision History

Version	Date	Author	Reviewer	Approver	Comments
0.1	23-12-2022	Amit Kumar	Amit Kumar		Draft version
0.2	30-12-2022	Amit Kumar	Amit Kumar		Suggested some reconstruction of dataset
0.3	7-01-2023	Amit Kumar	Amit Kumar		Dealing with some mission value and fix them.
0.4	14-01-2023	Amit Kumar	Amit Kumar		Building the different model for high accuracy
1.0	20-01-2023	Amit Kumar	Amit Kumar		Taking decision about the final model.



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1. Introduction:

1.1 Scope of the Document

- This document is defining the low-level details about the project Employee Attrition Project.

1.2 Intended Audience

- A person with some basic knowledge of an organization can understand this document.

1.3 System Overview

- This section will capture overview of system application i.e for what system is being developed
- Who are the stake holders of system?
- What are other external Systems through which this will be interacting

2. Project Briefing:

In proposed system, I present a system which is capable of predicting the behaviour of employee about

This Employee Attrition project makes prediction about whether an employee is going to leave the company or not on the basis of previous data of employee on some criteria such as how much an employee gets paid, what is the daily rate, environment satisfaction, job involvement and some other parameters. So, this system requires some details about the employee and then it can predict if he/she is going to leave the company.

This Employee Attrition system uses previous employee data (in this project using some resource which is provided in portal / Kaggle data), and basis on those data it can take decision very well and the accuracy is higher of the prediction which leads an organization more confident and optimistic.

3. Problem Statement:

In present time some organization gets some trauma if their employee sudden leaves their job. Their decision is not quite understandable for a normal why and what things make him/her to took this decision.

4. Problem Solution:

In the proposed system, I present a system that can examine the details about an employee and predict if he/she is about to leave or not.

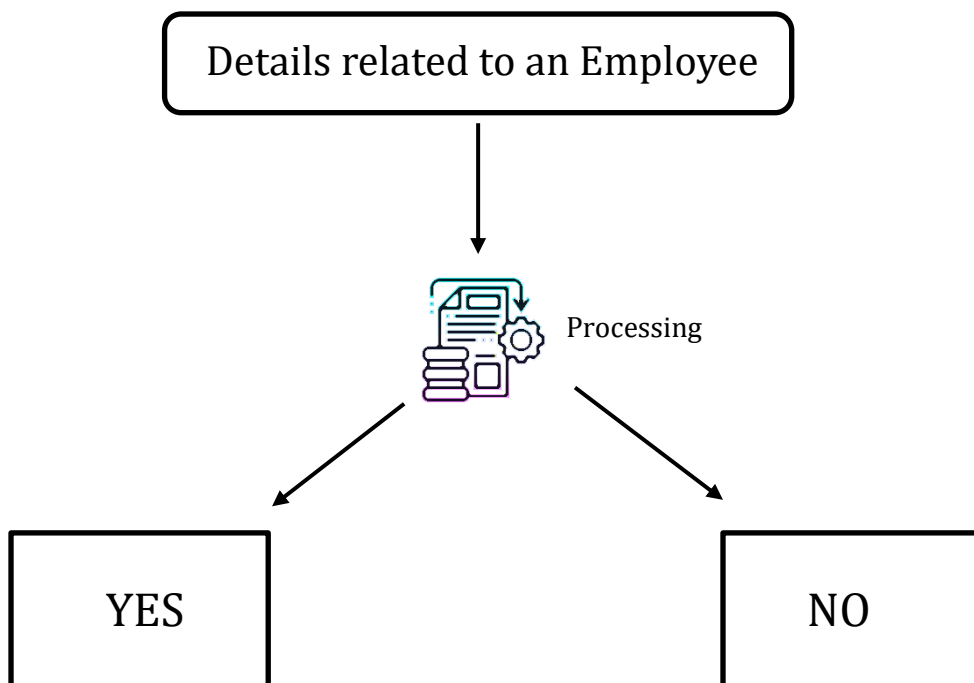
5. Objective of the Project:

Objective of this project is to predicting the decision of an employee about leaving or not

6. Scope of Project:

It is very useful to get information of an employee in advance if he is going to ditch his job. By getting this information organization can release some job filling opportunities for others.

7. Block Diagram:



8. Requirements Gathering:

- Window 10 Operating system
- Google Collab
- Project integration idea from the project resource
- Few Github Non copyrighted source codes
- Scikit-learn.org for some code snippets and understanding.

9. Analysis:

In this project I uses some ML model such as Logistic Regression, Random Forest, Support Vector machine. Logistic Regression works best and gives the higher accuracy. This project works in just 2 steps: 1. It needs some details about the employee details like daily rate, distance from home, department, education and its field, environment satisfaction, gender, job involvement, job level, job role etc. All the details need to be filled in the sequence. 2. System process on these data and using some training data it predicts the decision of employee if he/she is going to leave.

IN this system Employee details are examine with the help of previous employee who leave the company or not and on the basis of those information system take decision.

10. Final Screenshot of Project Output

The image displays two screenshots of a Jupyter Notebook titled "Employee Attrition Project VIEH group.ipynb".

Top Screenshot: Shows the initial data preprocessing steps. The code imports necessary libraries (numpy, warnings, pandas, matplotlib, seaborn) and reads the dataset from a CSV file. The output shows the first five rows of the dataset, which includes columns like Age, Attrition, BusinessTravel, DailyRate, Department, DistanceFromHome, Education, EducationField, EmployeeCount, EmployeeNumber, RelationshipSatisfaction, StandardHours, StockOptionLevel, TotalWorkingYears, and TrainingTimeInCurrentRole.

Bottom Screenshot: Shows the model evaluation steps. The code uses a classifier to predict attrition based on the test data. The output displays the accuracy score (0.8843537414965986) and the confusion matrix. The confusion matrix shows 238 true positives and 7 false positives. The code also predicts a single observation, resulting in an array [1], indicating that the employee is predicted to be leaving the company.