High Level Design(HLD)

Title:Campus Placement Prediction

1 Introduction

1.1 Why this High-Level Design Document?

The purpose of this High-Level Design (HLD) Document is to add the necessary detail to the current project description to represent a suitable model for coding. This document is also intended to help detect contradictions prior to coding, and can be used as a reference manual for how the modules interact at a high level.

The HLD will:

- Present all of the design aspects and define them in detail

- Describe the user interface being implemented

- Describe the hardware and software interfaces

- Describe the performance requirements

- Include design features and the architecture of the project

- List and describe the non-functional attributes like:

1. Security

2. Reliability

3. Maintainability

4. Portability

5. Reusability

6. Application compatibility

7. Resource utilization

8. Serviceability

1.2 Scope

The HLD documentation presents the structure of the system, such as the database architecture, application architecture (layers), application flow (Navigation), and technology architecture. The HLD uses non-technical to mildly-technical terms which should be understandable to the administrators of the system.

1.3 Definitions

Term	Description
Database	Collection of all the information monitored by this system
IDE	Integrated Development Environment
AWS	Amazon Web Services

2 General Description

2.1 Product Perspective

The Campus Placement is a Machine Learning model which will help us to predict whether the student will be recruited in campus placements or not based on the available factors in the dataset.

2.2 Problem statement

The Placement of students is one of the most important objective of an educational

institution. Reputation and yearly admissions of an institution invariably depend on the

placements it provides it students with. That is why all the institutions, arduously, strive

to strengthen their placement department so as to improve their institution on a whole.

Any assistance in this particular area will have a positive impact on an institution's ability

to place its students. This will always be helpful to both the students, as well as the

institution.

2.3 Tools used

- **Visual Studio Code -** visual studio code is used as IDE

- **NumPy -** NumPy is a fundamental package for numerical computing in Python

- **Pandas-** Pandas is an essential tool for data analysis and manipulation in Python, providing high-level data structures and functions that simplify and streamline the data processing workflow

- For **visualization** of the plots, Matplotlib, Seaborn and Plotly are used.

- **Scikit-learn -** Scikit-learn is a popular open-source machine learning library for Python that provides a simple and efficient tool for data mining and data analysis.

- **GitHub-** GitHub is used as version control system.

- **AWS-** AWS is used for deployment of the model.

3 Design Details

3.1 Model Training and Evaluation
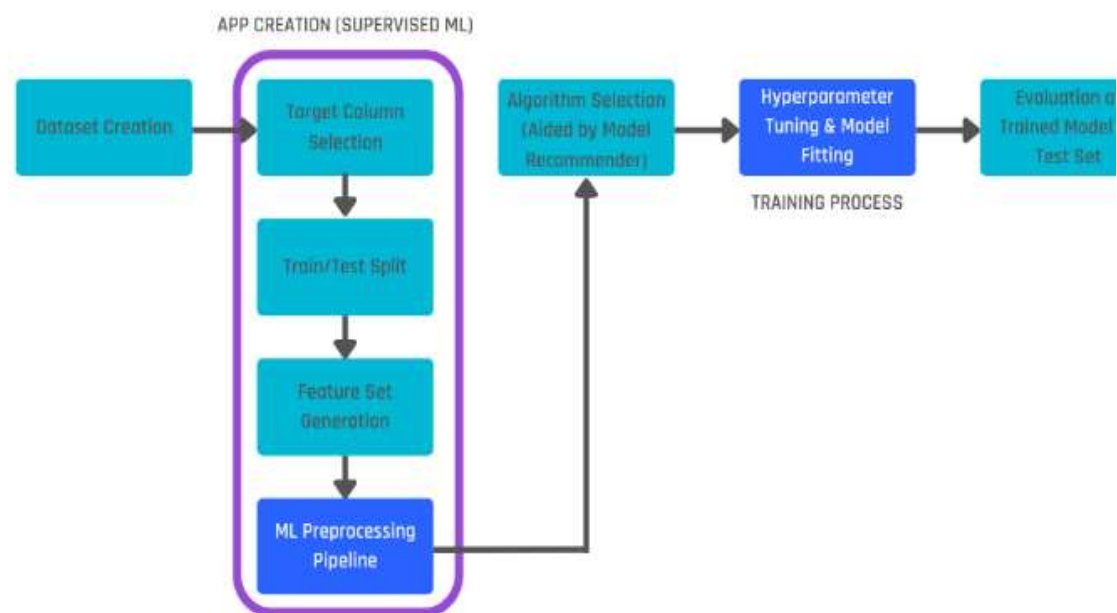
3.2 Event log

The system should log every event so that the user will know what process is running internally.

Initial Step-By-Step Description:

1. The System identifies at what step logging required

2. The System should be able to log each and every system flow.

3. Developer can choose logging method. You can choose database logging/ File

   logging as well.

4. System should not hang even after using so many loggings. Logging just because

   we can easily debug issues so logging is mandatory to do.

3.3 Error Handling

Should errors be encountered, an explanation will be displayed as to what went wrong? An error will be defined as anything that falls outside the normal and intended usage.

4 Performance

   Here we predict whether the student will be recruited in campus placements

   or not based on the available factors in the dataset.

4.1 Reusability

The code written and the components used should have the ability to be reused with no problems.

4.2 Application Compatibility

The different components for this project will be using Python as an interface between them. Each component will have its own task to perform, and it is the job of the Python to ensure proper transfer of information.

4.3 Deployment

5 Conclusion

In this project, we have designed and implemented a Campus Placement Prediction System using machine learning techniques. Leveraging a dataset containing various attributes such as gender, academic performance, work experience, and specialization, we trained a predictive model to determine whether a student is likely to be placed or not after graduation.

6 References

1. google.com for images

2. iNeuron.ai