HIGH LEVEL DESIGN(HLD)

CAMPUS PLACEMENT

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# 1 Document Version Control

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| --- | --- | --- | --- |
| Date Issued | Version | Description | Author |
| 15/09/2022 | 1.0 | Initial HLD | Akshat Pant |
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# 2 Abstract

The Placement of students is one of the most important objectives 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.

The main goal is to predict whether the student will be recruited in campus placements or not based on the available factors in the dataset.

# 3. Introduction

## 3.1 Why this High-Level Design?

The purpose of this High-Level Design (HLD) Document is to add the important details about this project. Through this HLD Document, I’m going to describe every small and big-things about this project.

# 4.General Description

## 4.1 Product Perspective

The Campus Placement predicts the chance of a student to get placed using Classification based Machine Learning algorithm.

## 4.2 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.

The main goal is to predict whether the student will be recruited in campus placements or not based on the available factors in the dataset.

## 4.3 Proposed Solution

The solution is to build a machine learning algorithm which will be able to predict whether the student will get placed or not. We have many Classification based algorithm like Logistic Regression, Decision Tree Classifier, Random forest Classifier ,XGBoost Classifier etc. We are going to pick up the one which gives us the best Performance metrics in our case it is Decision Tree . But before that we are going to pre-process the raw data provided by our client and then the model building process will come.

## 4.4 Technical Requirements

In this project we are having a set of requirements and they are given below

a) Model should be exposed through API or User Interface, so that anyone can test model.

b) Model should be deployed on cloud (Azure, AWS, GCP).

c) SQL database should be integrated in this project for any kind of user input.

## 4.5 Data Requirements

Data Requirement completely depend on our problem.

sl\_no : Serial Number

gender : Male or Female

ssc\_p : Secondary Education percentage

ssc\_b: Board of Education

hsc\_p: Higher Secondary Education Percentage

hsc\_b: Board of Education

hsc\_s: Specialization in Higher Education

degree\_p: Degree Percentage

degree\_t: Under Graduation Degree Field

workex: Work Experience

etest\_p: Employability Test Percentage

specialisation: Post Graduate Specialization

mba\_p: MBA percentage

status: Placed or not placed

salary: Current Salary if exists

## 4.6 Tools Used

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→ PyCharm is used as IDE.

→ For visualization of the plots, Matplotlib, Seaborn are used.

→ Heroku is used for deployment of the model.

→ SQL is used to retrieve, insert, delete, and update the database.

→ Front end development is done using HTML/CSS, Flask is used for backend development and for API development.

→ GitHub is used as version control system.

## 4.7 Constraints

The Campus Placement system must be user friendly, errors free and users should not be required to know any of the back-end working.

## 4.8 Assumptions

It is assumed that all the aspect of this project have the ability to work together in the way designer is expecting.

# 5. Design Details

## 5.1 For Training

DATA COLLECTION

DATA VALIDATION

HYPERAMETER TUNING

MODEL SELECTION

DATA PREPROCESSING

DB OPERATIONS

SAVING MODEL

## 5.2 Deployment process

DATA COLLECTION

DATA VALIDATION

MODE LOADING

DATA PREPROCESSING

SAVING OUTPUT FILE

PREDICTING RESULT

## 5.3 Event Log

In this Project we are logging every process so that the user will know what process is running internally. We have designed logging in such a way that debugging will be an easy task.

## 5.4 Error Handling

We have designed this project in such a way that, at any step if error occur then our application should not terminate rather it should catch that error and display that error with proper explanation as to what went wrong during process flow.

# 6. Performance

Solution of Campus Placement prediction is used to predict whether the candidate will be placed or not, so it should be as accurate as possible so that it should give as much as possible accurate prediction.

## 6.1 Reusability

We have done programming of this project in such a way that it should be reusable. So that anyone can add and contribute without facing any problems.

## 6.2 Application Compatibility

The different module of this project is using Python as an interface between them.  Each modules have it’s own job to perform and it is the job of the Python to ensure the proper transfer of information.

## 6.3 Resource Utilization

In this project, when any task is performed, it will likely that the task will use all the processing power available in that particular system until it’s job finished.

## 6.4 Deployment

I am deploying my model into Azure6

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## 6.5 User Interface

We have created an UI for user by using HTML and CSS.

# 7. Conclusion

The Campus Placement model will predict whether the candidate will be placed or not in prior so that placement coordinator will get an idea in advance and can work more on those candidates those are likely to not get placed.