Architecture

Campus Placement Prediction

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Contents

Abstract

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.

1 Introduction

1.1 Why this Architecture Document?

The purpose of this document is to present a detailed description of the Campus Placement Prediction. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system and will be proposed to the higher management for its approval.

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

To create an AI solution for predicting insurance premium and to implement the following use cases.

- To predict placement based on gender,ssc_p,hsc_p,degree_p,workex,etest
- To predict premium based on specialization,mba_p
- To predict premium based on streams like Arts,Commerce,Science,Comm&Mgmt,Sci-Tech and others.

1.2 Scope

Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. This process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work

1.3 Constraints

We will only be selecting a few of the features.

1.4 Risks

Document specific risks that have been identified or that should be considered.

1.5 Out of Scope

Delineate specific activities, capabilities, and items that are out of scope for the project.

2 Technical specifications

2.1 Dataset

Features	Finalized	Source
Gender, ssc_p,hsc_p,degree_p,workex,etest	yes	https://www.kaggle.com/c/ml-with-python-course-project/data
specialization	Yes	
mba_p	Yes	
Streams	Yes	

2.1.1 Placement dataset overview

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.

There are a total of 215 observations in the training set.

- Feature table

```
In [3]: train
```

Out[3]:

	sl_no	gender	ssc_p	ssc_b	hsc_p	hsc_b	hsc_s	degree_p	degree_t	workex	etest_p	specialisation	mba_p	status	salary
0	1	0	67.00	Others	91.00	Others	Commerce	58.00	Sci&Tech	No	55.0	Mkt&HR	58.80	Placed	270000.0
1	2	0	79.33	Central	78.33	Others	Science	77.48	Sci&Tech	Yes	86.5	Mkt&Fin	66.28	Placed	200000.0
2	3	0	65.00	Central	68.00	Central	Arts	64.00	Comm&Mgmt	No	75.0	Mkt&Fin	57.80	Placed	250000.0
3	4	0	56.00	Central	52.00	Central	Science	52.00	Sci&Tech	No	66.0	Mkt&HR	59.43	Not Placed	NaN
4	5	0	85.80	Central	73.60	Central	Commerce	73.30	Comm&Mgmt	No	96.8	Mkt&Fin	55.50	Placed	425000.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
210	211	0	80.60	Others	82.00	Others	Commerce	77.60	Comm&Mgmt	No	91.0	Mkt&Fin	74.49	Placed	400000.0
211	212	0	58.00	Others	60.00	Others	Science	72.00	Sci&Tech	No	74.0	Mkt&Fin	53.62	Placed	275000.0
212	213	0	67.00	Others	67.00	Others	Commerce	73.00	Comm&Mgmt	Yes	59.0	Mkt&Fin	69.72	Placed	295000.0
213	214	1	74.00	Others	66.00	Others	Commerce	58.00	Comm&Mgmt	No	70.0	Mkt&HR	60.23	Placed	204000.0
214	215	0	62.00	Central	58.00	Others	Science	53.00	Comm&Mgmt	No	89.0	Mkt&HR	60.22	Not Placed	NaN

2.2 Predicting Placement

- The system displays the choices of the factors.
- The User puts values in the respected places.
- The system presents the set of inputs required from the user.
- The user gives required information.
- The system should be able to predict the placement based on the user information.

2.3 Logging

We should be able to log every activity done by the user.

- The System identifies at what step logging required
- The System should be able to log each and every system flow.
- Developers can choose logging methods. You can choose database logging/ File logging as well.
- System should not be hung even after using so many loggings. Logging just because we can easily debug issues so logging is mandatory to do.

2.4 Database

System needs to store every request into the database and we need to store it in such a way that it is easy to retrain the model as well.

1. The User gives required information.

2. The system stores each and every data given by the user or received on request to the database. Database you can choose your own choice whether MongoDB/ MySQL.
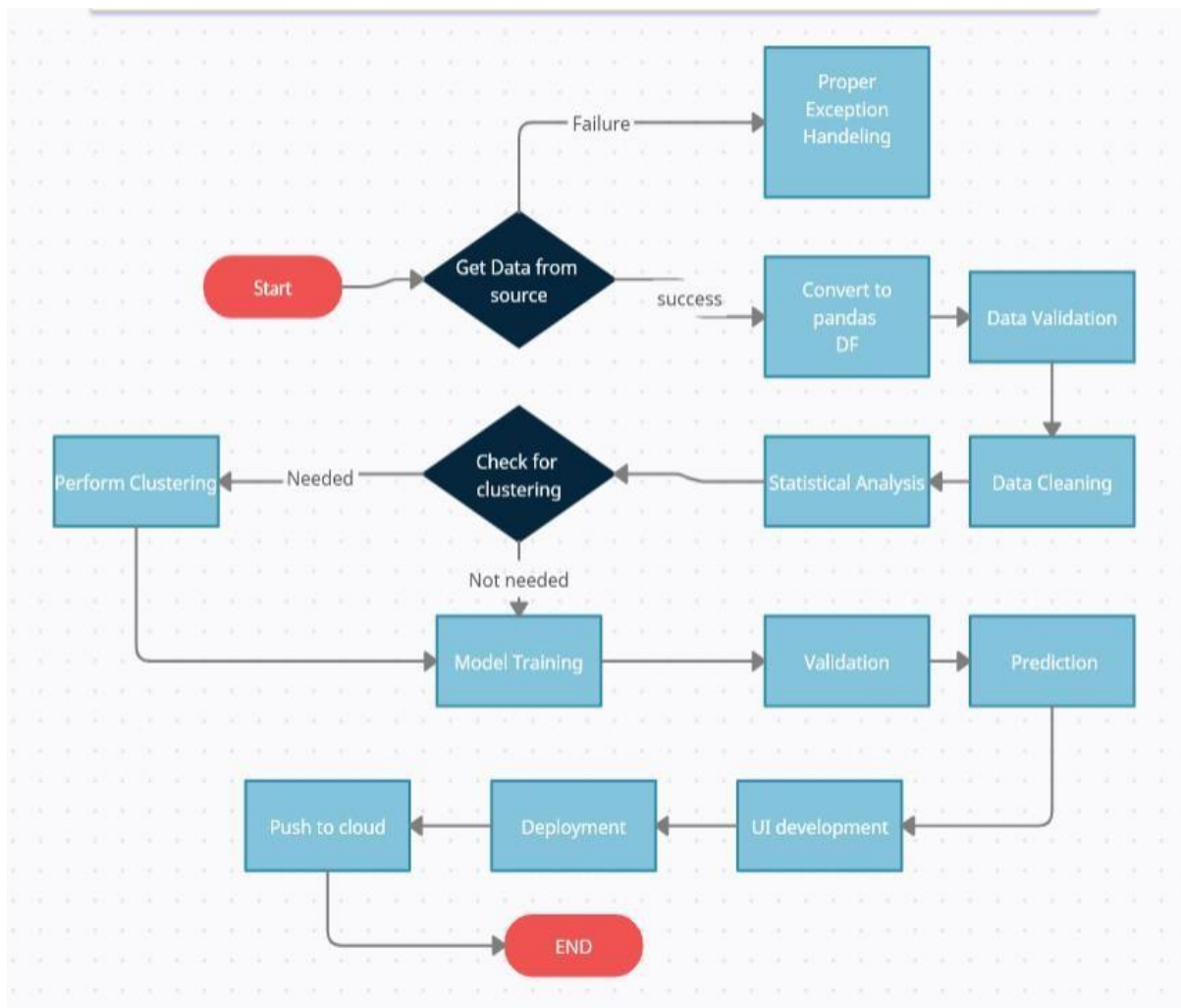
2.5 Deployment

1. Amazon Web Services

3   Technology stack

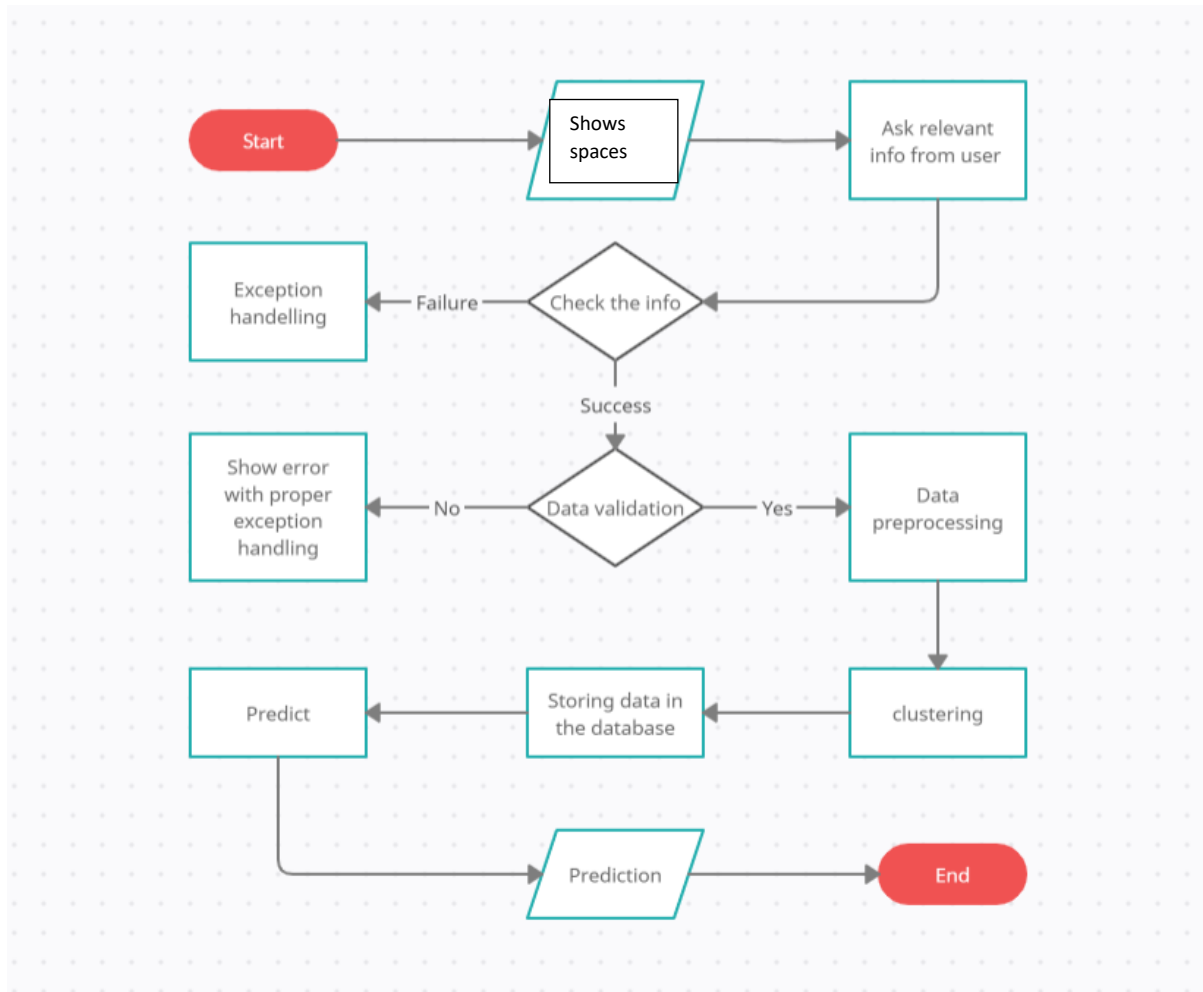| Front End	HTML
Backend	Python Flask
Database	Cassandra
Deployment	AWS

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4 Proposed Solution

The solution proposed here is based on student's performances. If the student is bright then his placement will be guaranteed compared to a student who doesnot study.

5 Model training/validation workflow

6 User I/O workflow

7 Test cases

Test case	Steps to perform test case	Module	Pass/Fail