Campus Placement Predictor WebApp Using Machine Learning

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Topics

- Introduction
- Problem State
- Motivation and Objective
- Frontend Approach
- Backend Approach
- Literature Survey
- Methodology
- System architecture and design
- Strategic Plan
- UML Diagrams
- Technology and Platforms
- Dataset
- Classifiers
- Performance
- Libraries
- References

Introduction

BACK TO AGENDA PAGE

Do you ever wonder what your chances are of landing your dream job straight out of college?

Problem Statement

BACK TO AGENDA PAGE

- Securing campus placements is a top priority in today's competitive job market.
- Machine learning algorithms are powerful tools for predicting campus placements.
- These algorithms analyze factors like academic performance, skillset, and personal attributes.
- The project "Campus Placement Prediction Using Machine Learning" explores this application.
- The technology can enhance career guidance for students.
- Educational institutions can leverage this technology to improve placement success rates.

Motivation and Objective

- Leverage Python and its machine learning libraries (NumPy, Pandas, Matplotlib, Sklearn).
- Focus on exploratory data analysis and classification using various ML models.
- Identify the best model by measuring performance and training on the full dataset.
- Use Flask to connect and deploy models to the front end.
- Explore benefits and impacts of ML in on-campus placements, providing insights to students and institutions.

BACK TO AGENDA PAGE

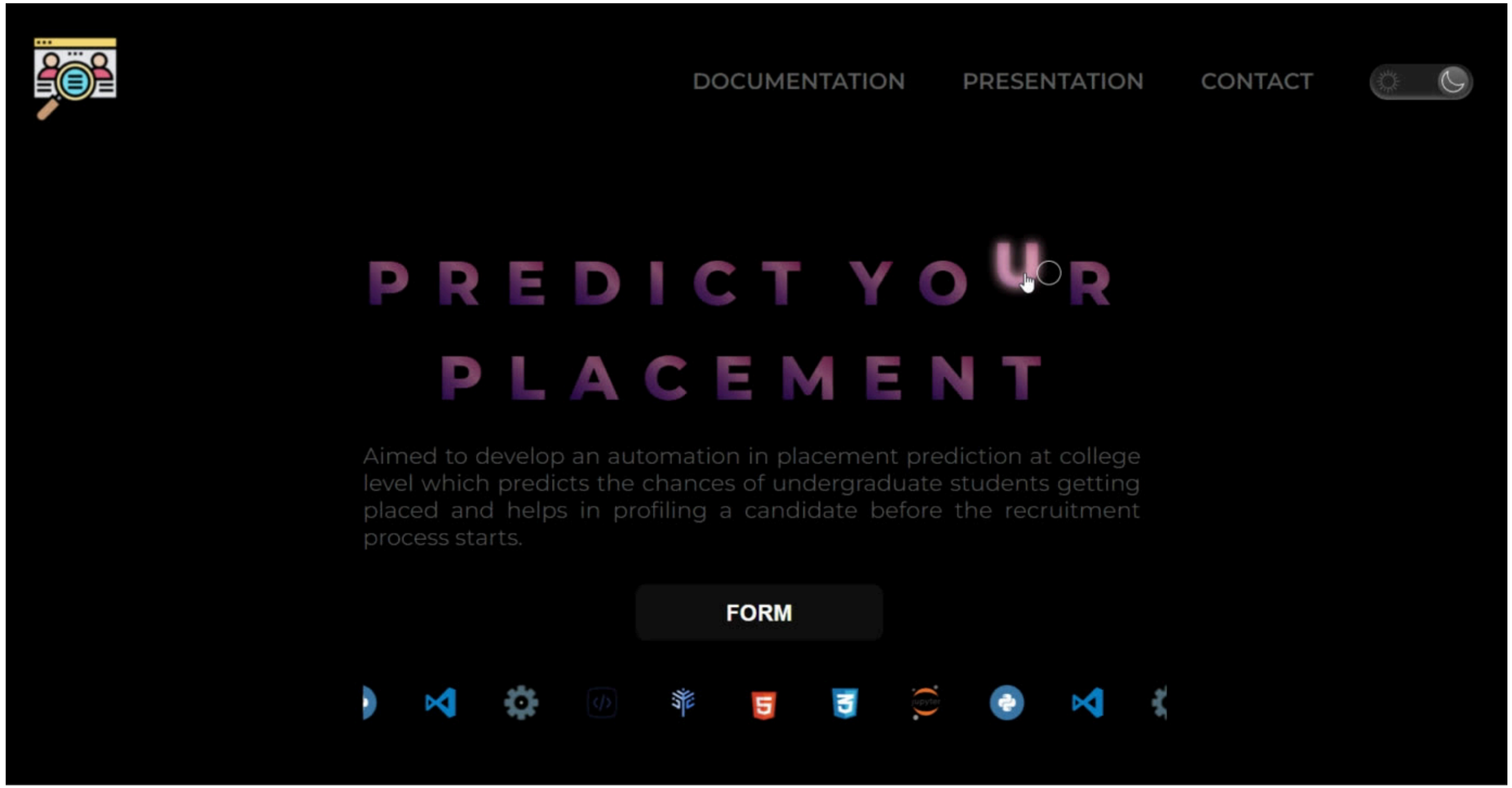
Frontend Approach

Developed using HTML, CSS and JS.

BACK TO AGENDA PAGE

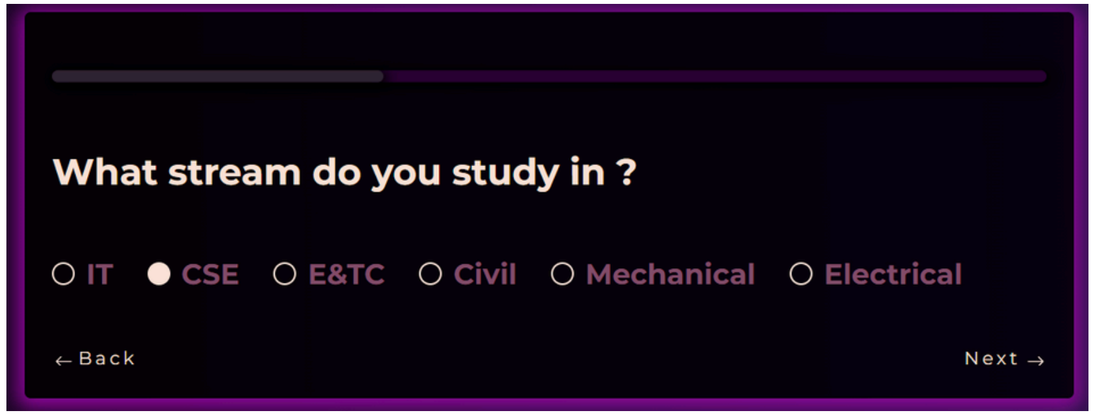
BACK TO AGENDA PAGE

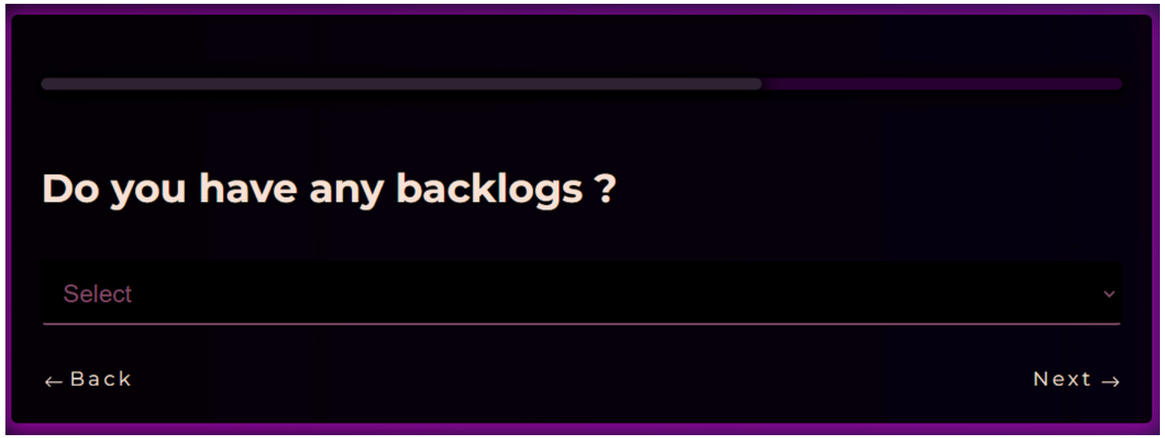
Landing Page



BACK TO AGENDA PAGE

Form Page





Form has several questions whose answers affect your predicitions !!

Output

Output page gives you the overall answer in simple words .

BACK TO AGENDA PAGE

Backend Approach

Developed using Python and Flask .

BACK TO AGENDA PAGE

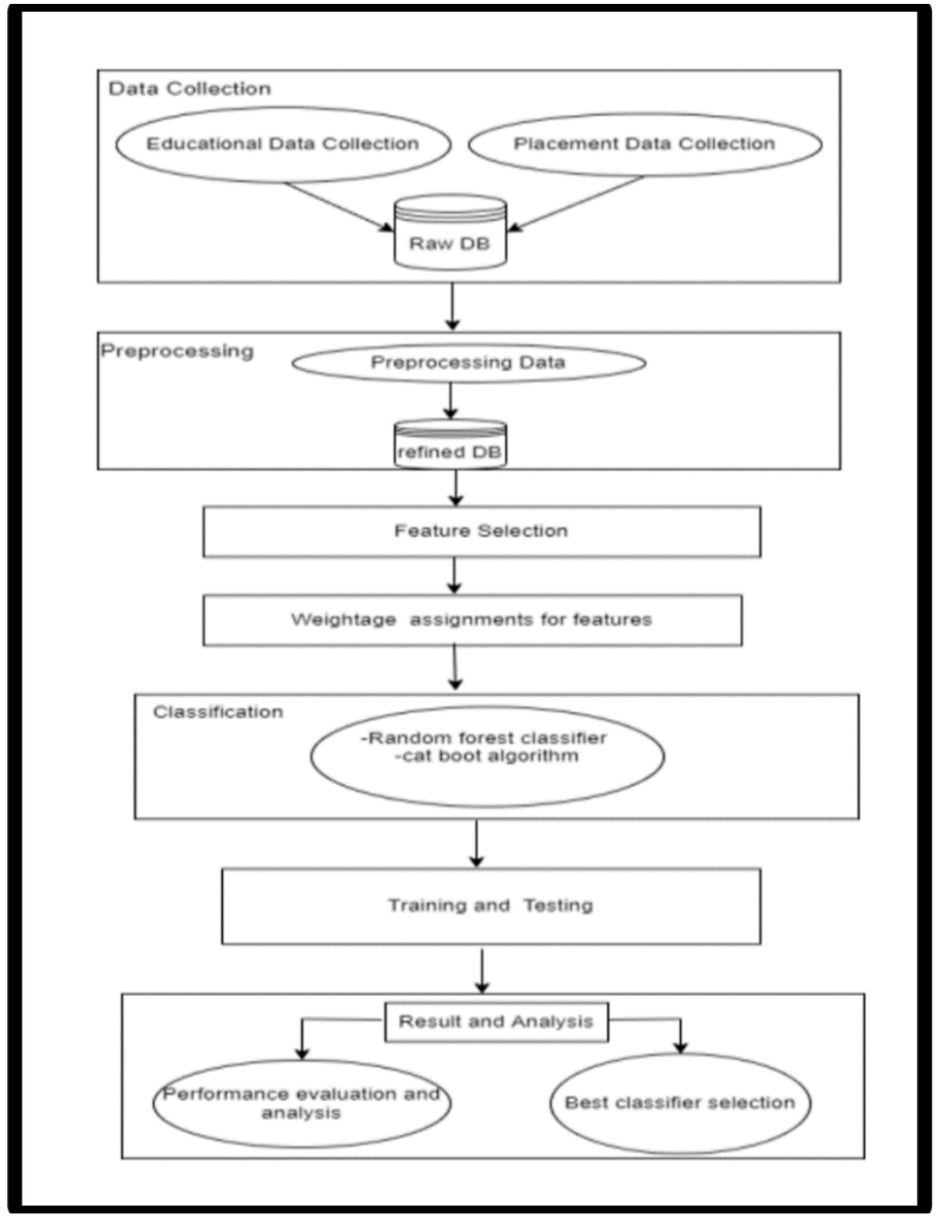
Literature Survey

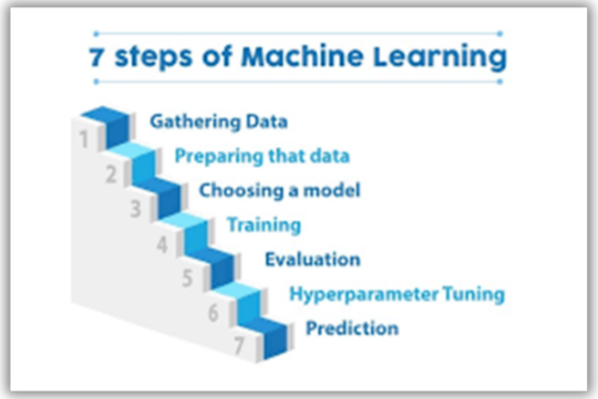
Sr. No.	Publish Month - Year	Paper	Publisher
1.	Special Issue - 2022	Placement Prediction and Analysis using Machine Learning	International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181
2.	November - 2022	Students Placement Prediction System	International Journal for Research in Applied Science & Engineering Technology (IJRASET) ISSN: 2321-9653
3.	20 May - 2020	Placement Prediction using Various Machine Learning Models and their Efficiency Comparison	International Journal of Innovative Science and Research Technology(IJISRT) ISSN: 2456-2165
4.	5 May - 2020	PREDICTION OF STUDENT PLACEMENT USING MACHINE LEARNING ALGORITHM	International Journal Of Creative Research Thoughts(IJCRT) ISSN: 2320-2882

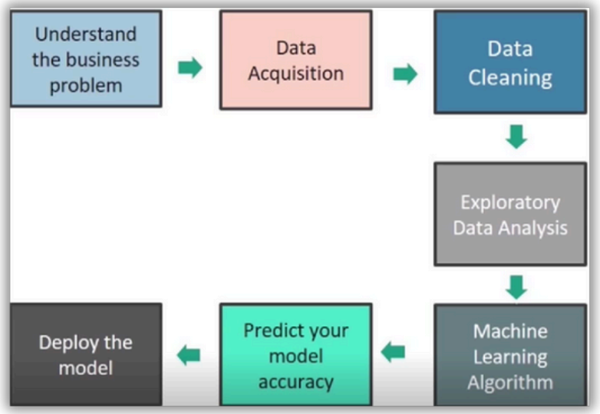
BACK TO AGENDA PAGE

BACK TO AGENDA PAGE

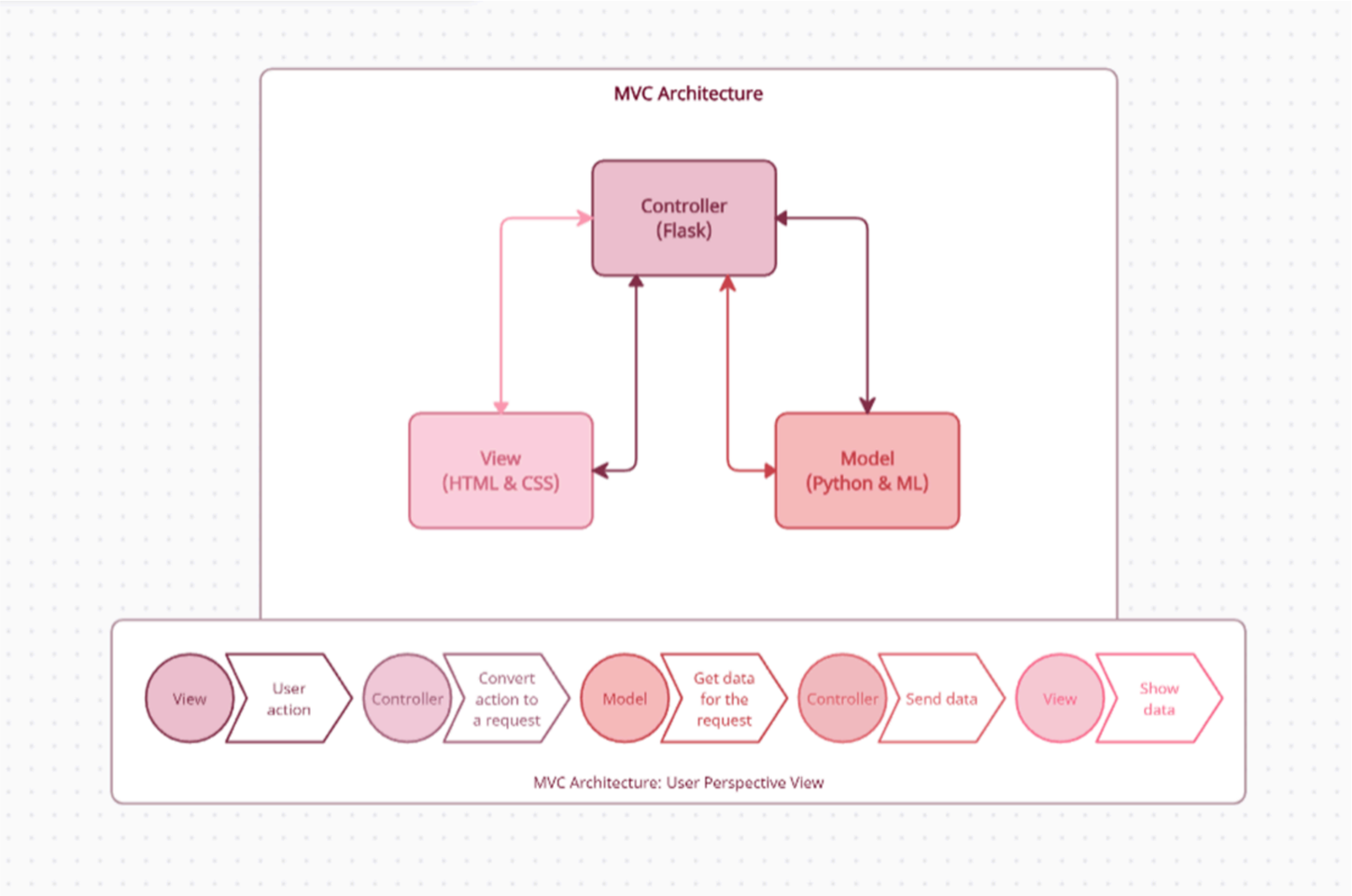
Methodology





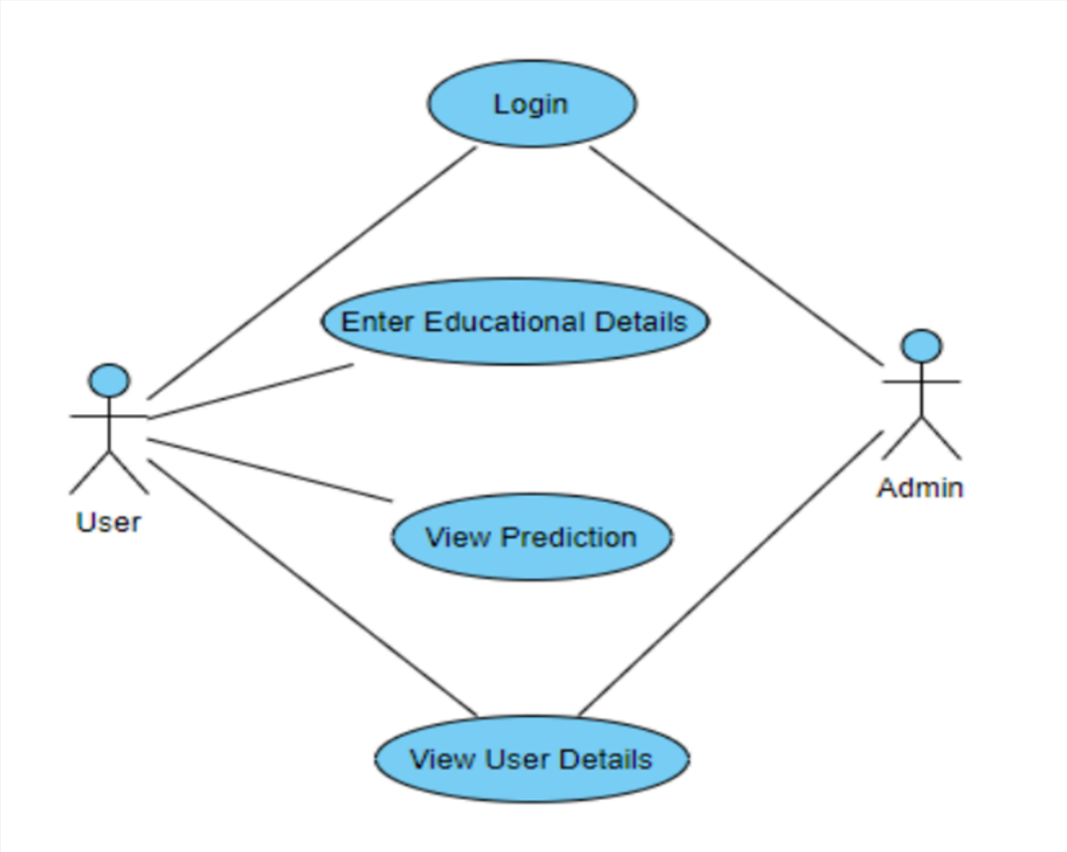


System Architecture and Design

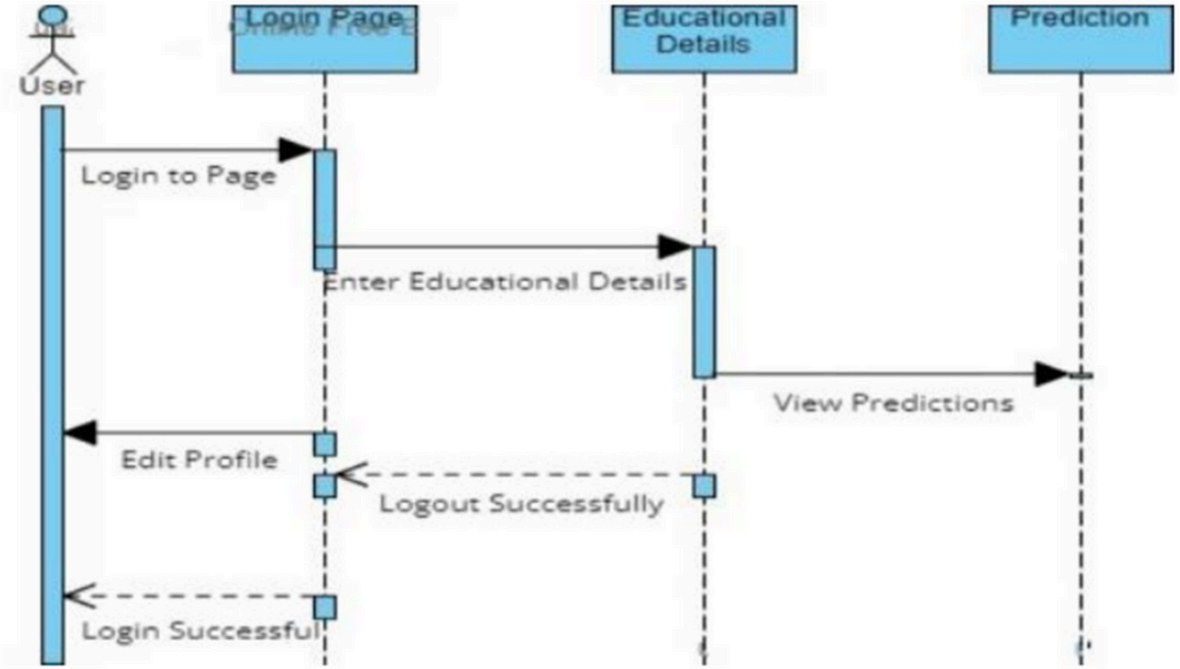


BACK TO AGENDA PAGE

Use-Case Diagram



Sequence Diagram



BACK TO AGENDA PAGE

Technology and Platform

python™

scikit learn

NumPy

Flask

matplotlib

pandas

seaborn

jupyter

HTML CSS JS

Visual Studio Code

BACK TO AGENDA PAGE

Dataset

	Age	Gender	Stream	Internships	CGPA	Hostel	HistoryOfBacklogs	PlacedOrNot
0	22	Male	Electronics And Communication	1	8	1	1	1
1	21	Female	Computer Science	0	7	1	1	1
2	22	Female	Information Technology	1	6	0	0	1
3	21	Male	Information Technology	0	8	0	1	1
4	22	Male	Mechanical	0	8	1	0	1
...	...	...	...	...	...	...	...	...
2961	23	Male	Information Technology	0	7	0	0	0
2962	23	Male	Mechanical	1	7	1	0	0
2963	22	Male	Information Technology	1	7	0	0	0
2964	22	Male	Computer Science	1	7	0	0	0
2965	23	Male	Civil	0	8	0	0	1

2966 rows × 8 columns

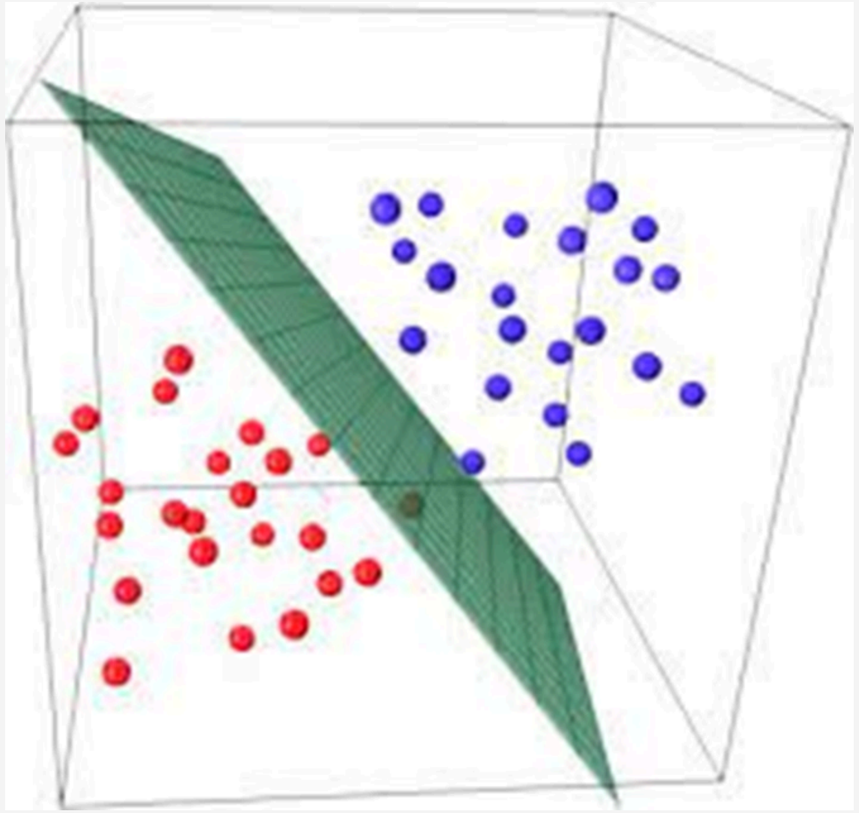
BACK TO AGENDA PAGE

BACK TO AGENDA PAGE

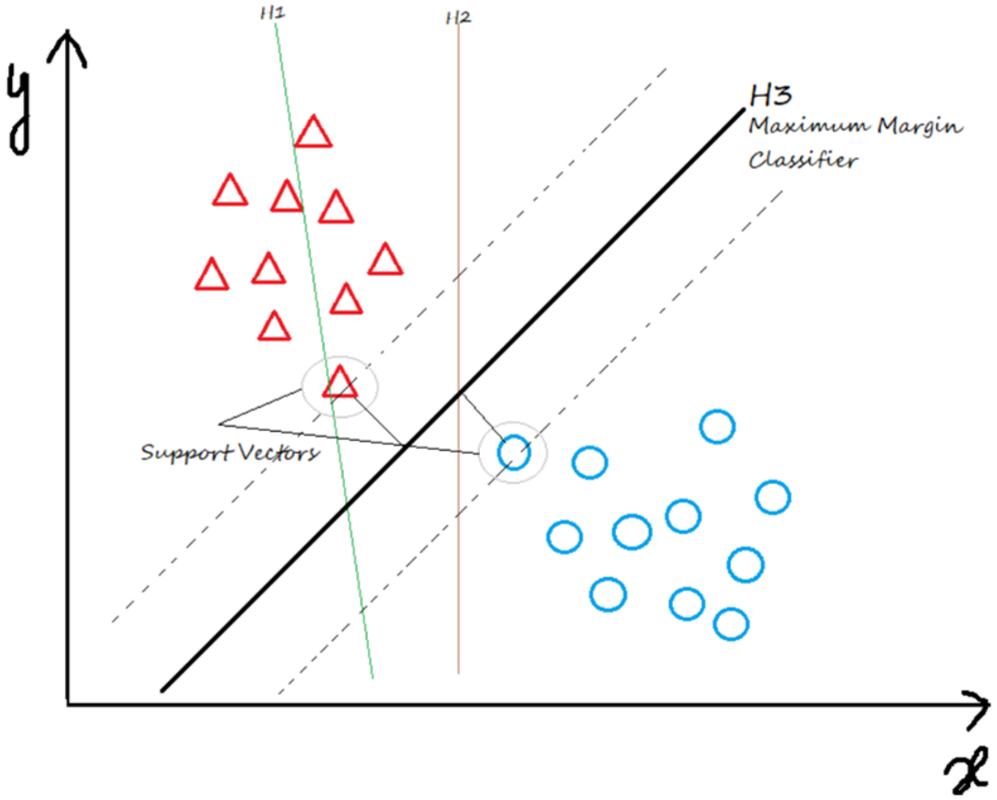
Dataset Description

Sr.no	Column Name	Description
1	Age	Age of The Student
2	Gender	Gender of the student
3	Stream	Respective stream of the student
4	Internships	No. of internships the student has done
5	CGPA	Result of the student
6	Hostel	Whether the student stays in hostel or not
7	History of Backlogs	Whether the student have backlogs before ?
8	Placed or not	Whether the student gets placed or not

Logistic Regression Classifier

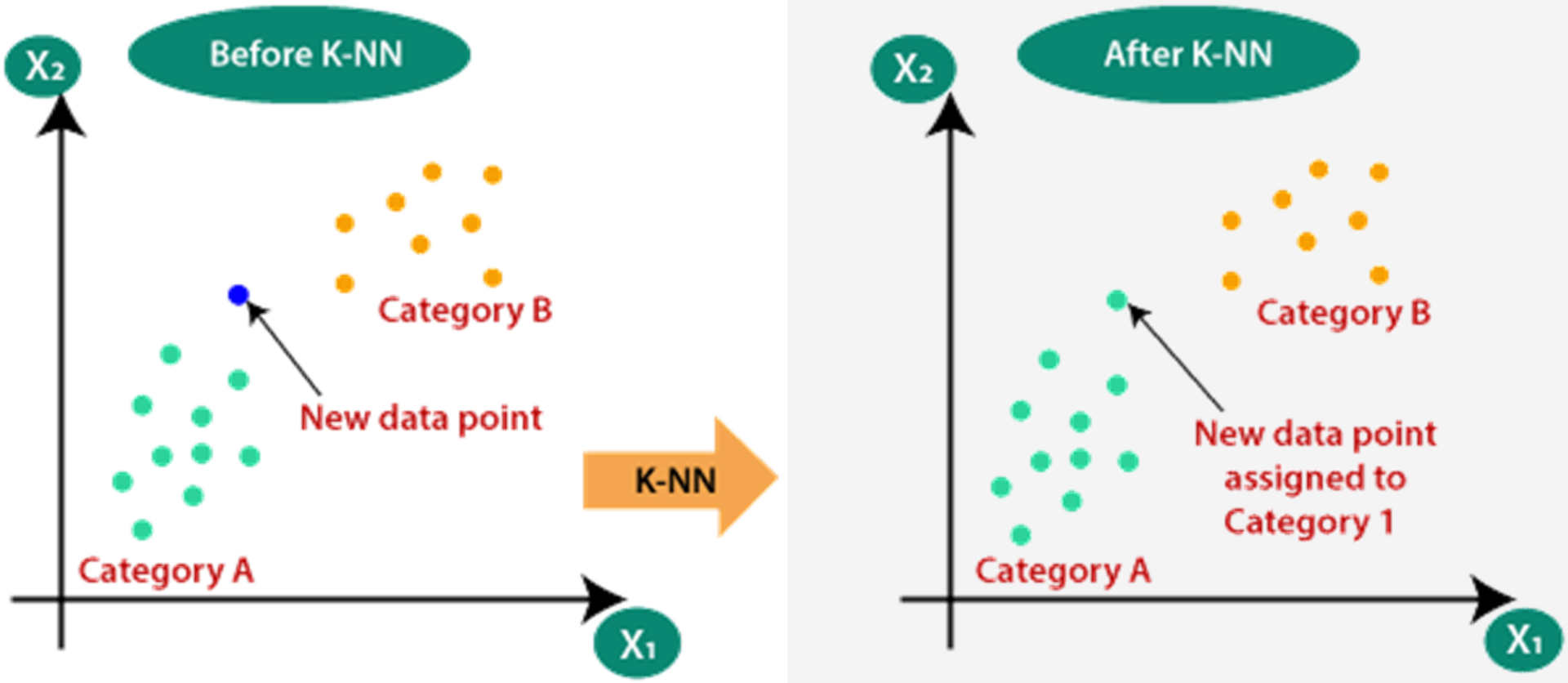


Support Vector Classifier



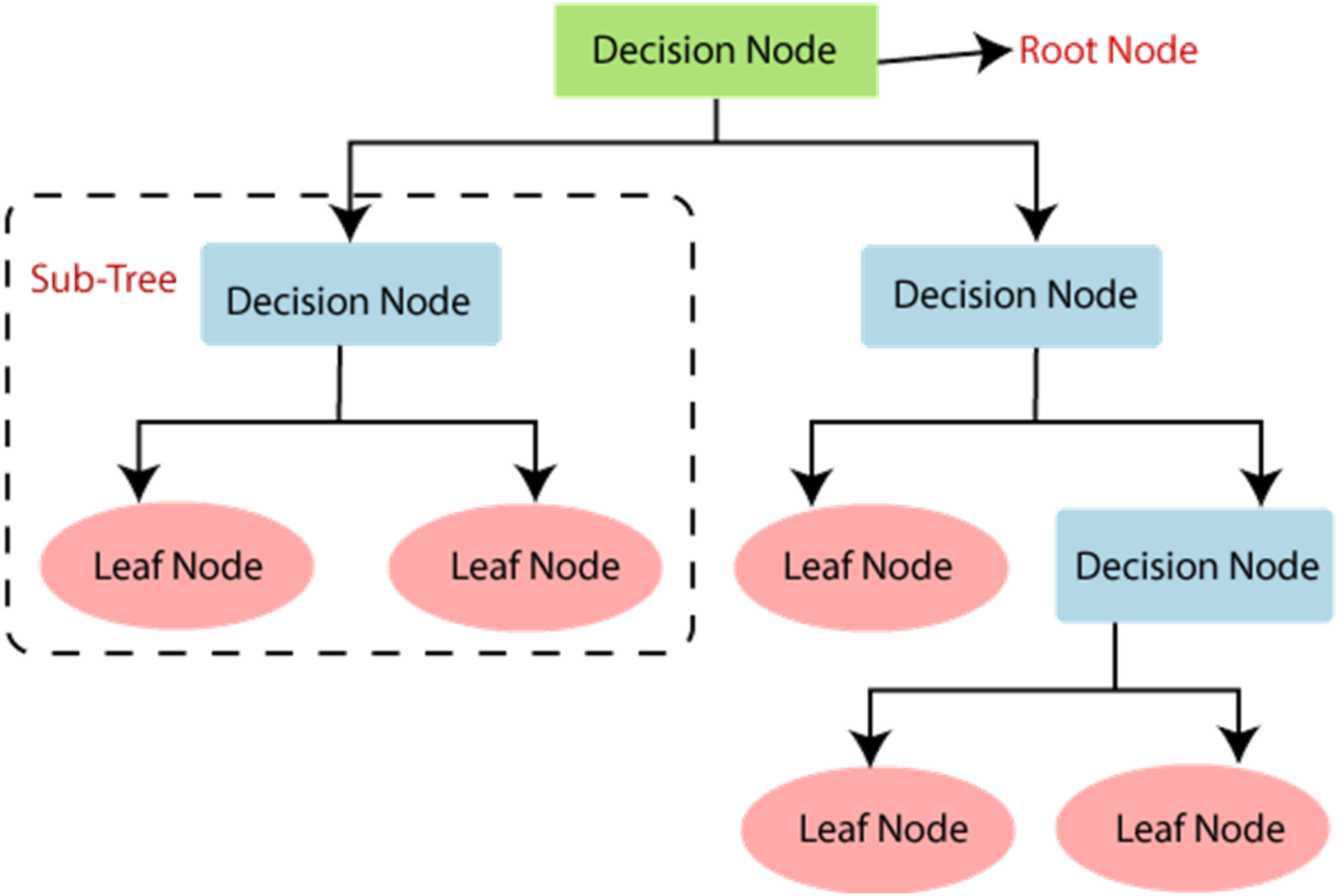
BACK TO AGENDA PAGE

K Neighbours Classifier:



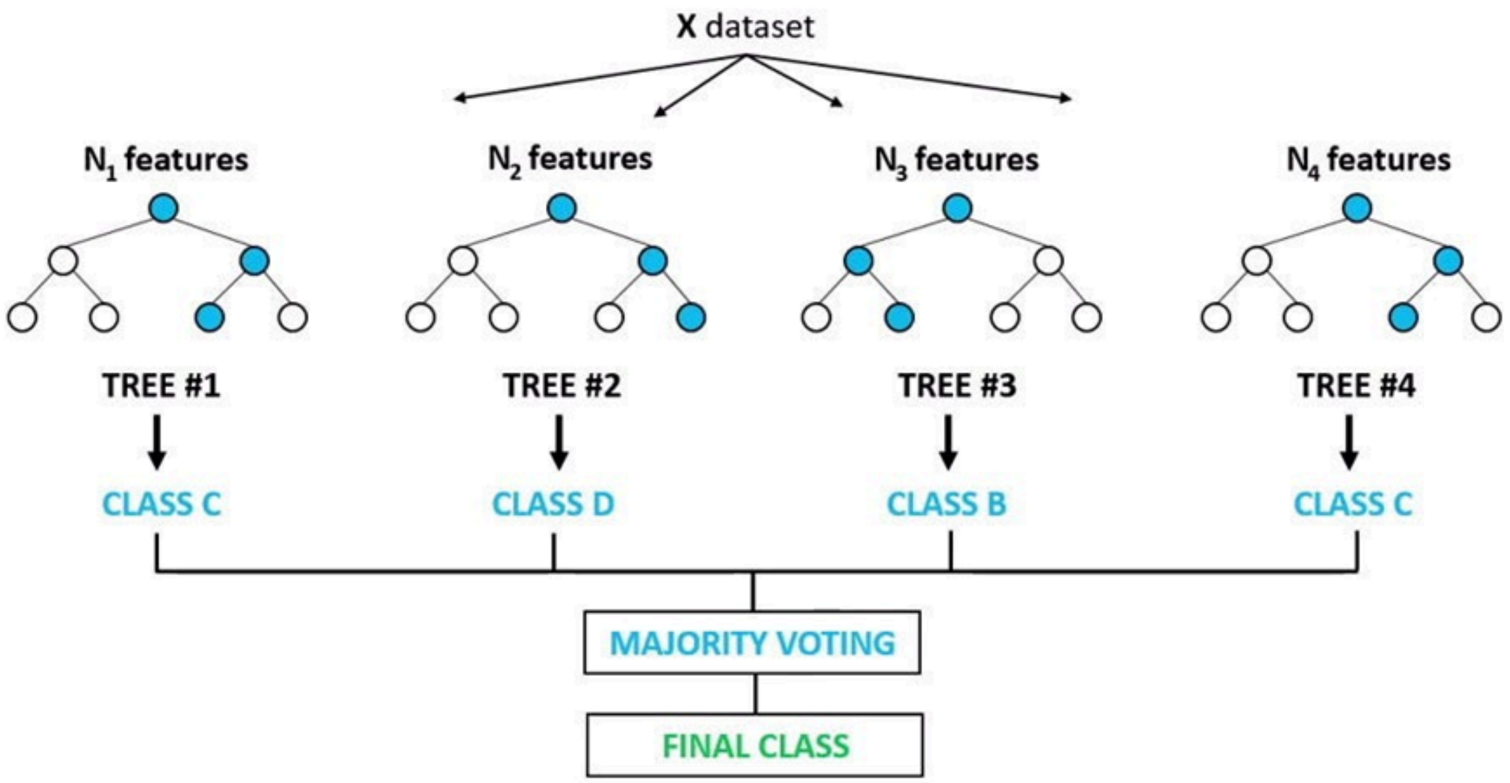
BACK TO AGENDA PAGE

Decision Tree Classifier

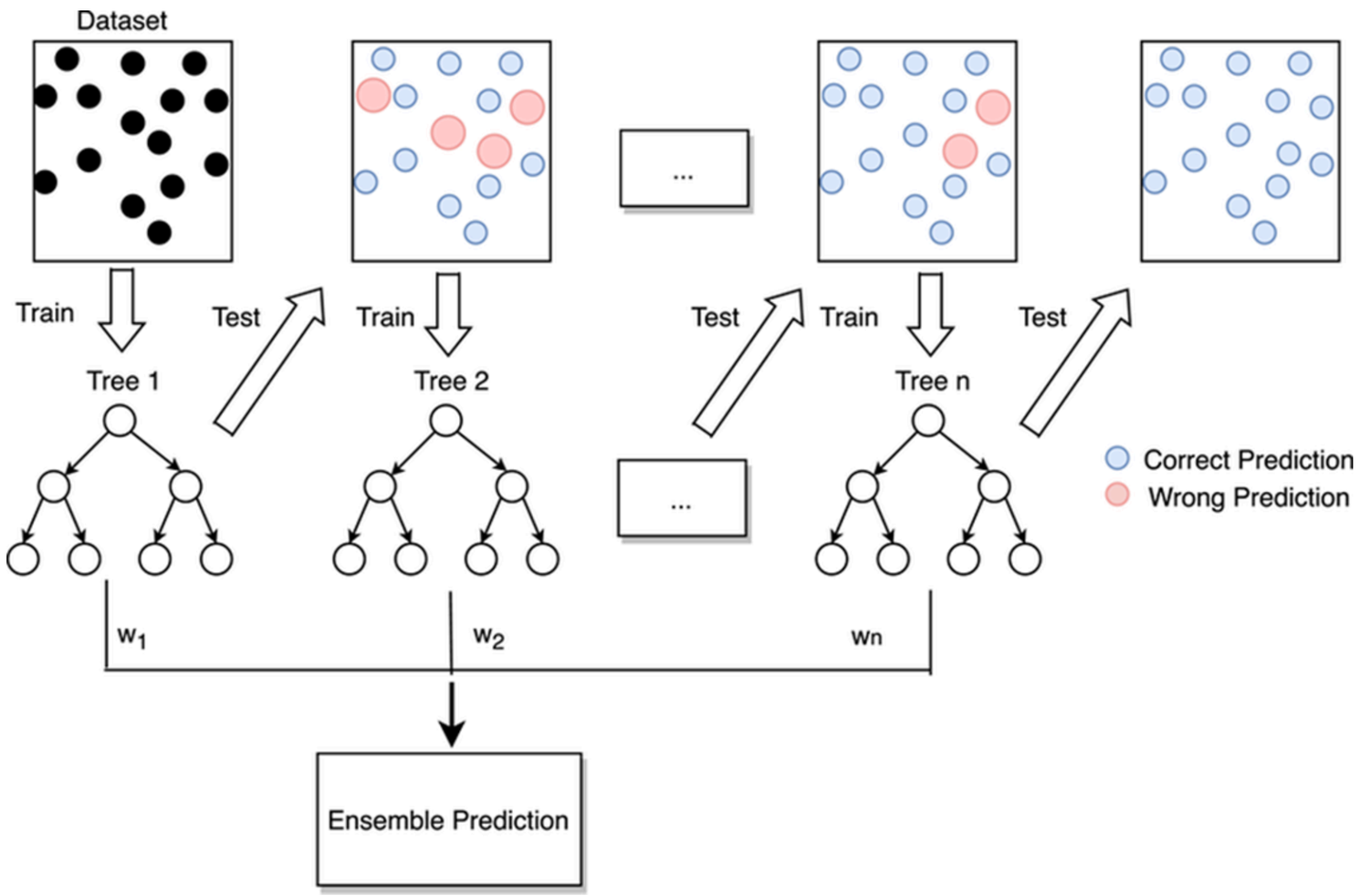


BACK TO AGENDA PAGE

Random Forest Classifier

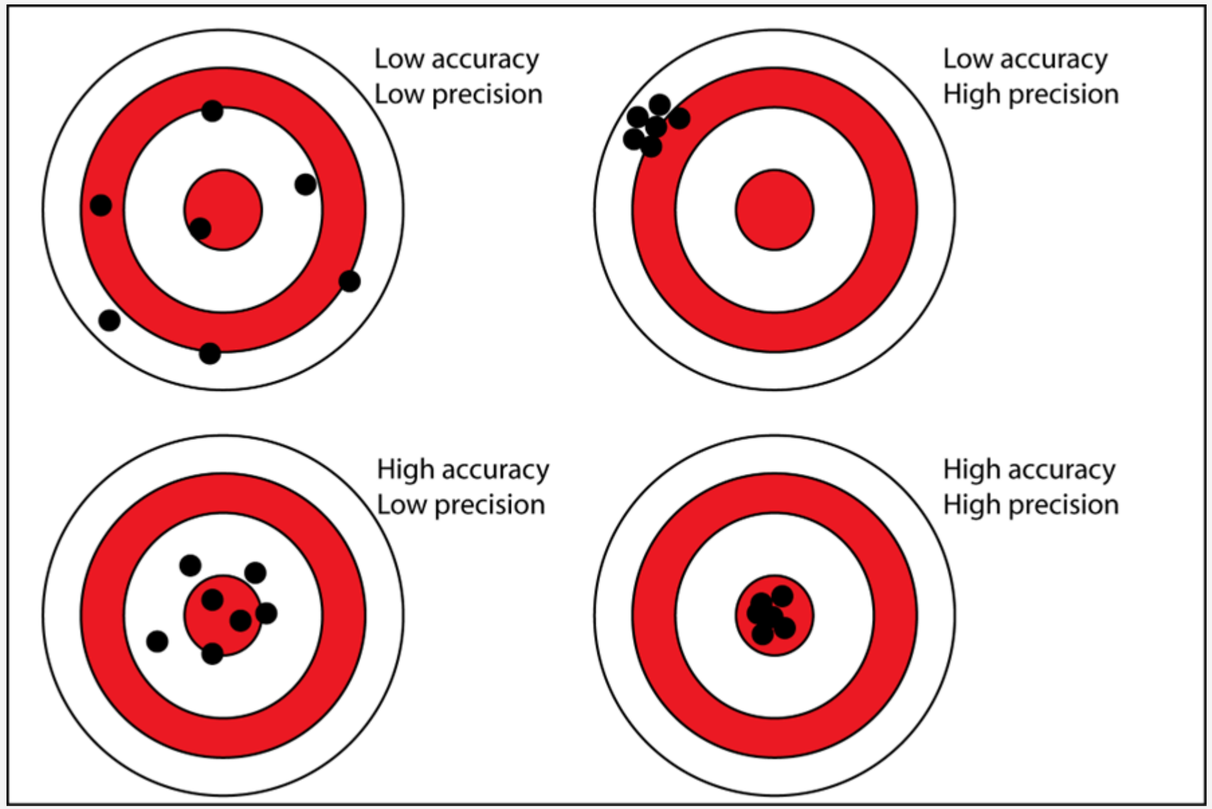


Gradient Boosting Classifier



BACK TO AGENDA PAGE

Performance Measurement and Model Selection



ACTUAL VALUES	POSITIVE	NEGATIVE
POSITIVE	TP	FN
NEGATIVE	FP	TN

$$Precision = \frac{TP}{TP + FP} \qquad Recall = \frac{TP}{TP + FN}$$

$$Accuracy = \frac{TP + TN}{TP + FP + FN + TN}$$

$$F1\ Score = 2 \times \frac{Precision \times Recall}{Precision + Recall}$$

BACK TO AGENDA PAGE

Libraries Required

Import Required Libraries

In [1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

from sklearn.model_selection import train_test_split

from sklearn.linear_model import LogisticRegression
from sklearn.svm import SVC
from sklearn.neighbors import KNeighborsClassifier
from sklearn.tree import DecisionTreeClassifier
from sklearn.ensemble import RandomForestClassifier
from sklearn.ensemble import GradientBoostingClassifier

from sklearn.metrics import accuracy_score
from sklearn.metrics import precision_score
from sklearn.metrics import recall_score
from sklearn.metrics import f1_score

import pickle
```

In [2]:
```
import warnings

warnings.filterwarnings('ignore')
```

BACK TO AGENDA PAGE

REFERENCES:

[1] PLACEMENT PREDICTION AND ANALYSIS USING MACHINE LEARNING INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH & TECHNOLOGY (IJERT) ISSN: 2278-0181 . SPECIAL ISSUE - 2022

[2] STUDENTS PLACEMENT PREDICTION SYSTEM INTERNATIONAL JOURNAL FOR RESEARCH IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY (IJRASET) ISSN: 2321-9653 , NOVEMBER - 2022

[3] PLACEMENT PREDICTION USING VARIOUS MACHINE LEARNING MODELS AND THEIR EFFICIENCY COMPARISON INTERNATIONAL JOURNAL OF INNOVATIVE SCIENCE AND RESEARCH TECHNOLOGY(IJISRT) ISSN: 2456-2165 , 20 MAY - 2020

[4] PREDICTION OF STUDENT PLACEMENT USING MACHINE LEARNING ALGORITHM INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS(IJCRT) ISSN: 2320-2882 , 5 MAY - 2020

Thank You...