CHIKKANNA GOVERNMENT ARTS COLLEGE

DEPARTMENT OF BACHELOR OF COMPUTER APPLICATION

TIRUPUR-641602

(AFFILIATED TO BHARATHIAR UNIVERSITY)

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IDENTIFYING PATTERNS AND TRENDS IN CAMPUS PLACEMENT DATA

1.INTRODUCTION

1.1 OVERVIEW :

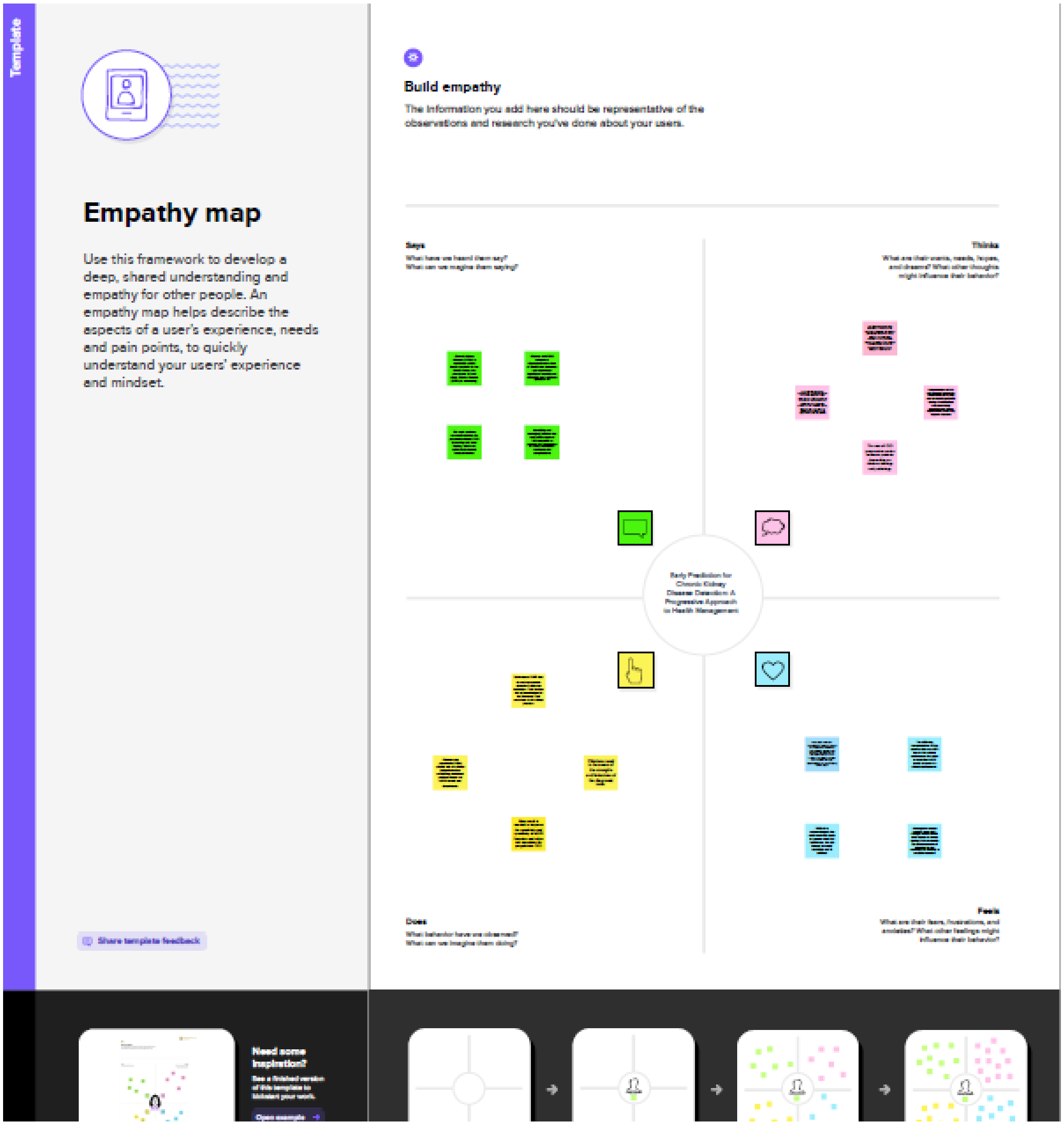
Analyzing campus placement data can help provide an overview of the job market for students in a college or university. To identify patterns and trends in this data, it's important to gather and clean the data first. This can be done using tools like Excel or Python. Once the data is cleaned, it can be analyzed using various tools, such as Excel, Python, or Tableau. The next step is to identify patterns in the data, such as which companies are hiring the most, which sectors are hiring the most, which roles are in demand, and which students are getting placed. Additionally, trends in the data should be identified, such as whether the number of placements is increasing or decreasing, whether certain sectors or roles are becoming more or less popular, and whether the average salary package is increasing or decreasing. Visualizing the data with charts and graphs can help to communicate the findings more effectively. Based on the patterns and trends identified, conclusions can be drawn about the job market and the prospects for students in the college or university. you can identify patterns and trends in campus placement data, which can help you to provide an overview of the job market for students in your college or university.

1.2. PURPOSE :

I propose that we conduct an analysis of campus placement data to identify patterns and trends in the job market for students in our college or university. By collecting and cleaning data on campus placements from the past few years, we can gain insights into which companies are hiring the most, which sectors are hiring the most, which roles are in demand, and which students are getting placed. Analyzing this data using tools like Excel, Python, or Tableau can help us to identify trends in the job market, such as whether the number of placements is increasing or decreasing, whether certain sectors or roles are becoming more or less popular, and whether the average salary package is increasing or decreasing. Visualizing the data with charts and graphs can help us to communicate the findings more effectively. Based on the patterns and trends identified, we can draw conclusions about the job market and the prospects for students in our college or university. This analysis can help us to better prepare students for the job market and ensure that they are equipped with the skills and knowledge that employers are looking for.

2. PROBLEM DEFINITION & DESIGN THINKING

2.1. EMPATHY MAP



Empathy map

Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, needs and pain points, to quickly understand your users' experience and mindset.

Build empathy

The information you add here should be representative of the observations and research you've done about your users.

Says

What have we heard them say?
What can we imagine them saying?

Thinks

What are their wants, needs, hopes, and dreams? What other thoughts might influence their behavior?

Early Prediction for Chronic Kidney Disease Detection: A Progressive Approach to Health Management

Does

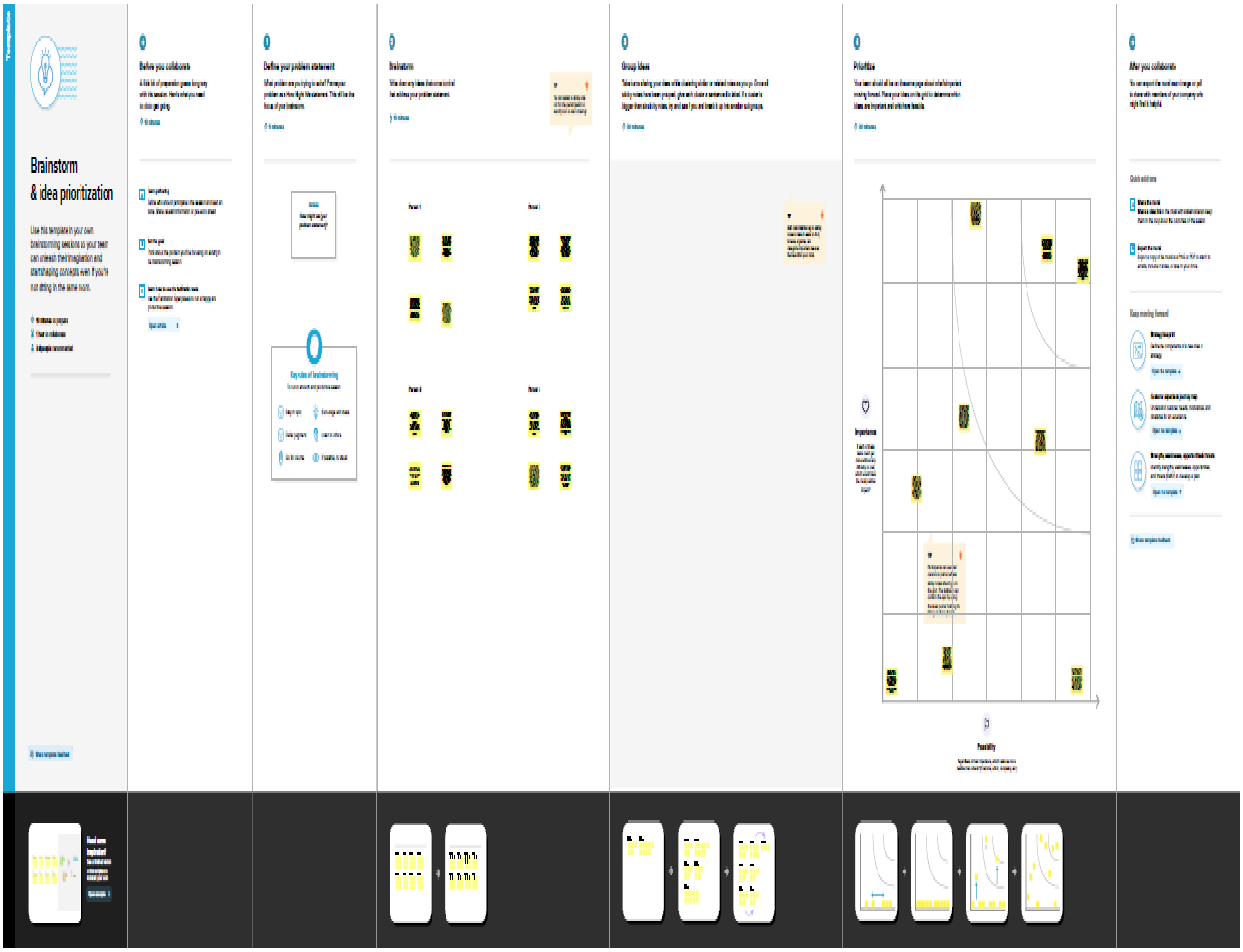
What behavior have we observed?
What can we imagine them doing?

Feels

What are their fears, frustrations, and anxieties? What other feelings might influence their behavior?

Need some inspiration?
See a finished version of this template to kickstart your work.
Open example

2.2 IDEATION & BRAINSTORMINGS MAP



Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

Key rules of brainstorming

Brainstorm

Write down any ideas that come to mind that address your problem statement.

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

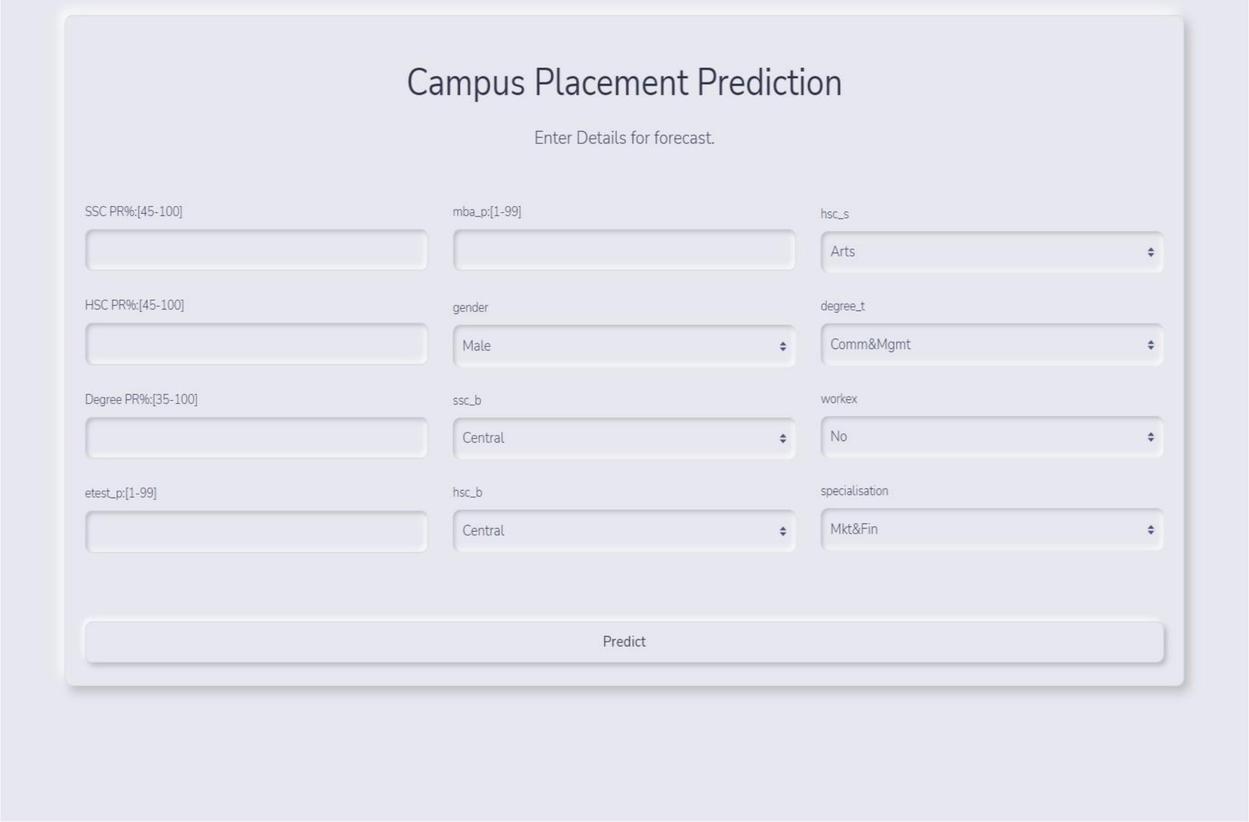
Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

After you collaborate

You can export the mural as an image or pdf to share with members of your company who might find it helpful.

3. RESULT



Campus Placement Prediction

Enter Details for forecast.

SSC PR%:[45-100]

mba_p:[1-99]

hsc_s: Arts

HSC PR%:[45-100]

gender: Male

degree_t: Comm&Mgmt

Degree PR%:[35-100]

ssc_b: Central

workex: No

etest_p:[1-99]

hsc_b: Central

specialisation: Mkt&Fin

4.ADVANTAGES & DISADVANTAGES

ADVANTAGES :

- Provides insights into the job market.
- Better career guidance for students.
- Improved placement rates for colleges and universities.
- Competitive advantage for colleges and universities.
- Better resource allocation for colleges and universities.

DISADVANTAGES :

- Gather campus placement data from the past few years.
- Clean and organize the data to remove any errors or inconsistencies.
- Analyze the data using tools such as Excel, Python, or Tableau to identify patterns and trends.

- Identify which companies are hiring the most, which sectors are growing, and which roles are in demand.
- Visualize the data with charts and graphs to communicate the findings more effectively.
- Draw conclusions about the job market and the prospects for students based on the patterns and trends identified.
- Use the insights gained from the analysis to improve career guidance and tailor curriculum to meet the needs of the job market.

5. APPLICATION

The application of analyzing campus placement data is to provide valuable insights into the job market for students and colleges/universities. By analyzing placement data, colleges and universities can:

1. Tailor their programs and curriculum to meet the needs of the job market.

2. Improve their placement rates by focusing on the sectors and roles that are in demand.
3. Provide better career guidance to their students by advising them on which sectors and roles are growing.
4. Gain a competitive advantage by staying up-to-date with the latest trends in the job market.
5. Allocate their resources more effectively by focusing on the sectors and roles that are in demand.
6. Ensure that their students are well-prepared for the workforce by providing them with the skills and knowledge that employers are looking for.

Overall, analyzing campus placement data can help students make informed decisions about their career paths and help colleges and universities better prepare their students for the job market

6.CONCLUSION

Identifying patterns and trends in campus placement data is an important process that involves gathering, organizing, cleaning, and analyzing data to draw conclusions about the job market and recruitment trends. The first step is to collect the data from the relevant sources and arrange it in a structured format, such as a spreadsheet. Next, the data must be cleaned to remove any incomplete or inconsistent information and ensure that it is accurate and reliable. Once the data is organized and cleaned, it is important to identify the variables that will be used to analyze the data, such as the number of students placed or the average salary offered. Statistical methods such as regression analysis or correlation analysis can then be used to identify patterns and trends in the data. Based on the analysis, conclusions can be drawn about the placement trends and patterns, including which companies are hiring the most students or which sectors are offering the highest salaries. The results should be presented in a clear and concise manner using visual aids such as charts and graphs to help illustrate the trends and patterns identified, enabling stakeholders to make informed decisions and take appropriate action based on the conclusions.

7.FUTURE SCOPE

The future scope of identifying patterns and trends in campus placement data is significant, given the increasing demand for data-driven decision-making in the recruitment industry. With the advent of big data and machine learning, it is becoming easier to collect, process, and analyze large volumes of data, enabling recruiters to identify and predict job market trends with greater accuracy. As such, there is a growing need for professionals skilled in data analysis and visualization to help recruiters and placement cells make informed decisions based on the data.

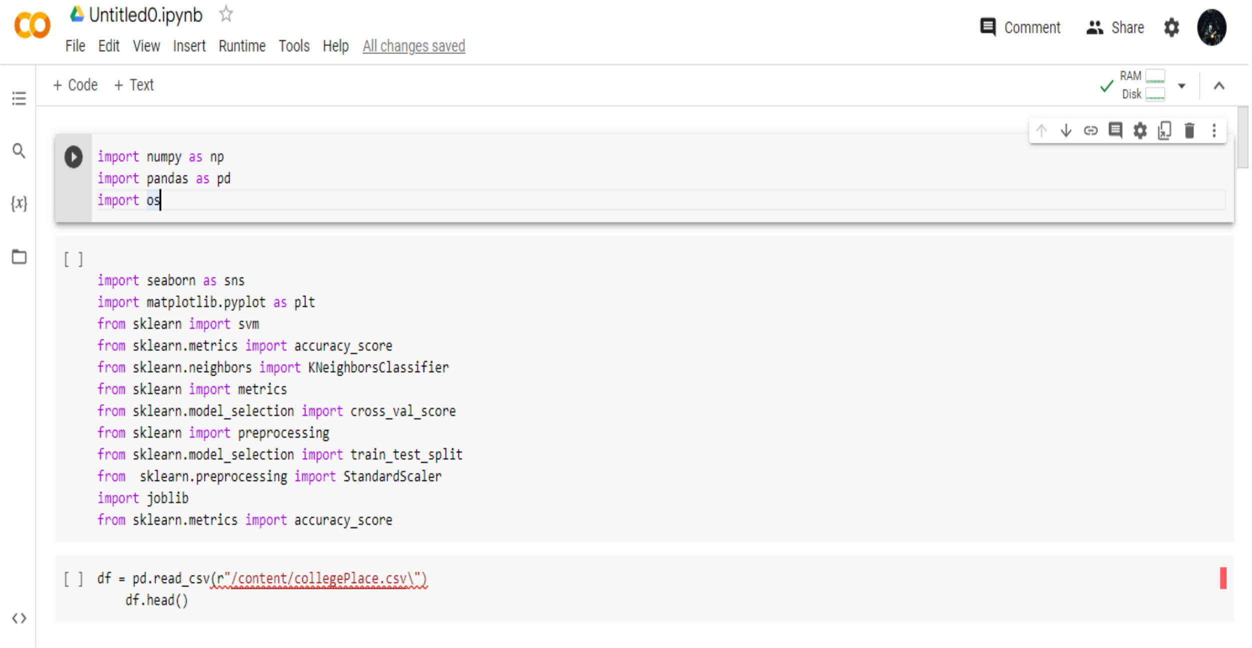
Furthermore, as the job market becomes increasingly competitive, identifying patterns and trends in campus placement data can help colleges and universities tailor their courses and curricula to the demands of the job market. This, in turn, can help students develop the skills and knowledge needed to succeed in their careers, improving their employability and making them more attractive to recruiters.

The future scope of identifying patterns and trends in campus placement data also includes the potential to develop predictive models that can forecast recruitment trends based on historical data. These models can be used to help placement cells and recruiters make informed decisions about the recruitment process, including which companies to target and which courses to promote. In addition, the use of artificial intelligence and natural language processing can help automate the process of analyzing and interpreting data, enabling recruiters to focus on more strategic tasks.

Overall, the future scope of identifying patterns and trends in campus placement data is vast, and it is likely that we will see continued growth in this field as recruiters and placement cells seek to leverage the power of data to improve the recruitment process and help students succeed in their careers.

8. APPENDIX

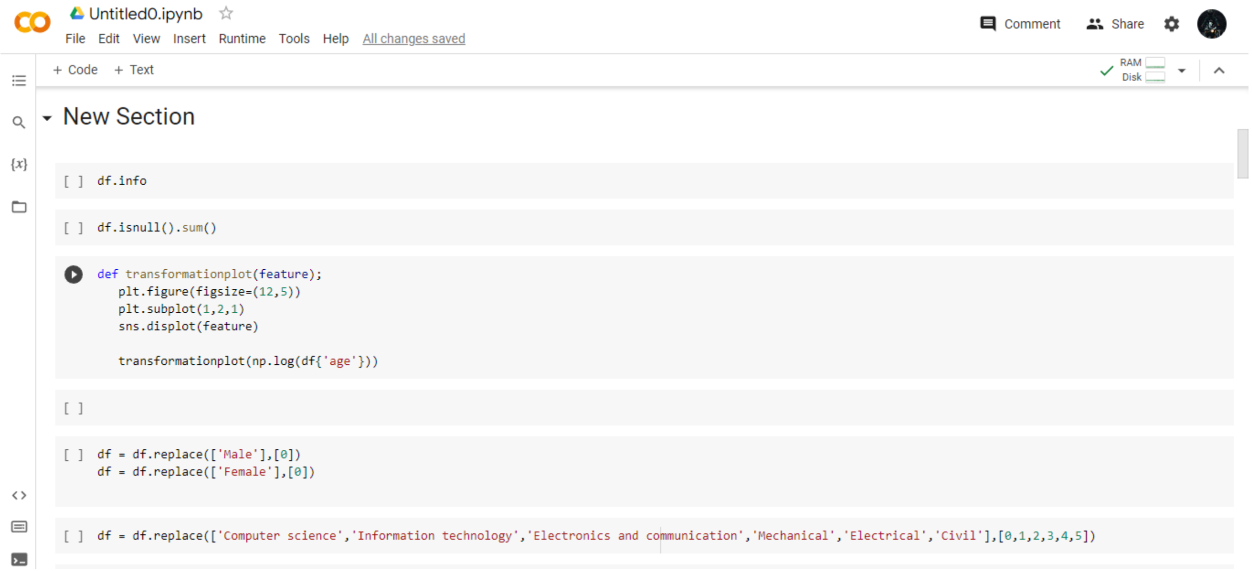
A.SOURCE CODE :



```
import numpy as np
import pandas as pd
import os
```

```
[ ]
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn import svm
from sklearn.metrics import accuracy_score
from sklearn.neighbors import KNeighborsClassifier
from sklearn import metrics
from sklearn.model_selection import cross_val_score
from sklearn import preprocessing
from sklearn.model_selection import train_test_split
from  sklearn.preprocessing import StandardScaler
import joblib
from sklearn.metrics import accuracy_score
```

```
[ ] df = pd.read_csv(r"/content/collegePlace.csv\")
        df.head()
```



New Section

```
[ ] df.info
```

```
[ ] df.isnull().sum()
```

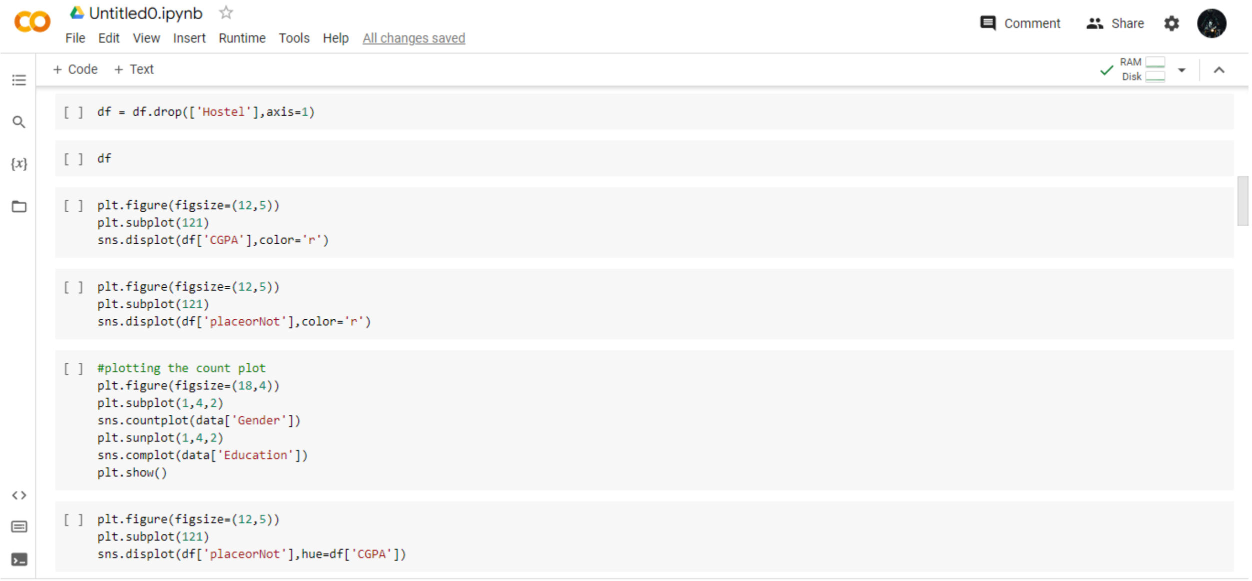
```
def transformationplot(feature);
   plt.figure(figsize=(12,5))
   plt.subplot(1,2,1)
   sns.displot(feature)

   transformationplot(np.log(df{'age'}))
```

```
[ ]
```

```
[ ] df = df.replace(['Male'],[0])
    df = df.replace(['Female'],[0])
```

```
[ ] df = df.replace(['Computer science','Information technology','Electronics and communication','Mechanical','Electrical','Civil'],[0,1,2,3,4,5])
```



```
[ ] df = df.drop(['Hostel'],axis=1)
```

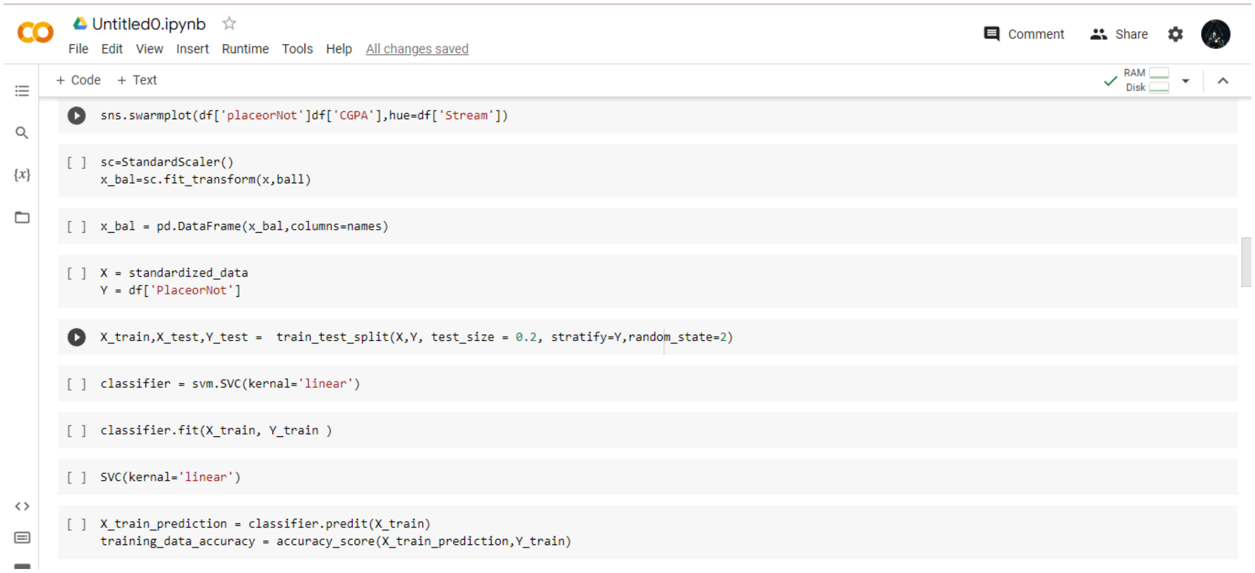
```
[ ] df
```

```
[ ] plt.figure(figsize=(12,5))
    plt.subplot(121)
    sns.displot(df['CGPA'],color='r')
```

```
[ ] plt.figure(figsize=(12,5))
    plt.subplot(121)
    sns.displot(df['placeorNot'],color='r')
```

```
[ ] #plotting the count plot
    plt.figure(figsize=(18,4))
    plt.subplot(1,4,2)
    sns.countplot(data['Gender'])
    plt.sunplot(1,4,2)
    sns.complot(data['Education'])
    plt.show()
```

```
[ ] plt.figure(figsize=(12,5))
    plt.subplot(121)
    sns.displot(df['placeorNot'],hue=df['CGPA'])
```



```
sns.swarmplot(df['placeorNot']df['CGPA'],hue=df['Stream'])
```

```
sc=StandardScaler()
x_bal=sc.fit_transform(x,ball)
```

```
x_bal = pd.DataFrame(x_bal,columns=names)
```

```
X = standardized_data
Y = df['PlaceorNot']
```

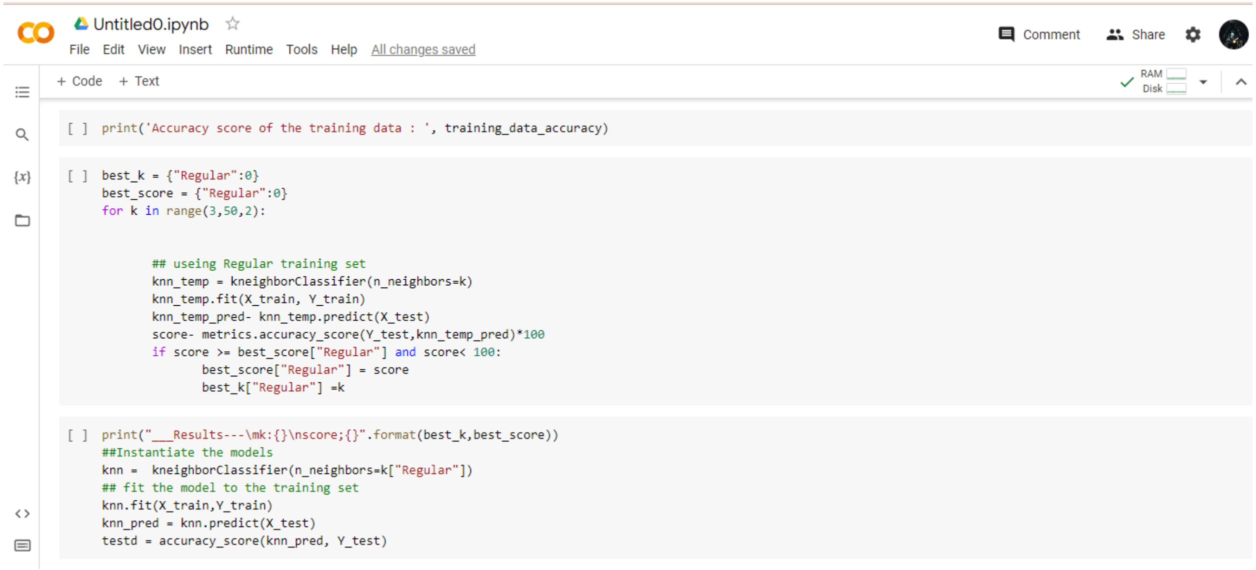
```
X_train,X_test,Y_test =  train_test_split(X,Y, test_size = 0.2, stratify=Y,random_state=2)
```

```
classifier = svm.SVC(kernal='linear')
```

```
classifier.fit(X_train, Y_train )
```

```
SVC(kernal='linear')
```

```
X_train_prediction = classifier.predit(X_train)
training_data_accuracy = accuracy_score(X_train_prediction,Y_train)
```

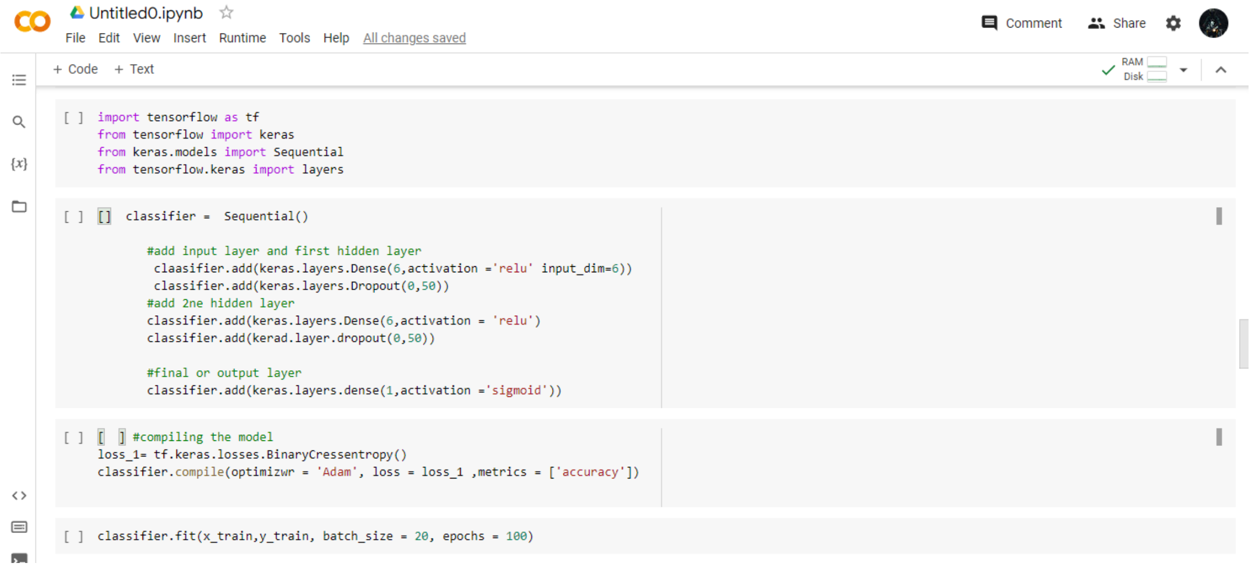


```
[ ] print('Accuracy score of the training data : ', training_data_accuracy)
```

```
[ ] best_k = {"Regular":0}
    best_score = {"Regular":0}
    for k in range(3,50,2):


            ## useing Regular training set
            knn_temp = kneighborClassifier(n_neighbors=k)
            knn_temp.fit(X_train, Y_train)
            knn_temp_pred- knn_temp.predict(X_test)
            score- metrics.accuracy_score(Y_test,knn_temp_pred)*100
            if score >= best_score["Regular"] and score< 100:
                    best_score["Regular"] = score
                    best_k["Regular"] =k
```

```
[ ] print("___Results---\mk:{}\nscore;{}".format(best_k,best_score))
    ##Instantiate the models
    knn =  kneighborClassifier(n_neighbors=k["Regular"])
    ## fit the model to the training set
    knn.fit(X_train,Y_train)
    knn_pred = knn.predict(X_test)
    testd = accuracy_score(knn_pred, Y_test)
```



```
[ ] import tensorflow as tf
    from tensorflow import keras
    from keras.models import Sequential
    from tensorflow.keras import layers
```

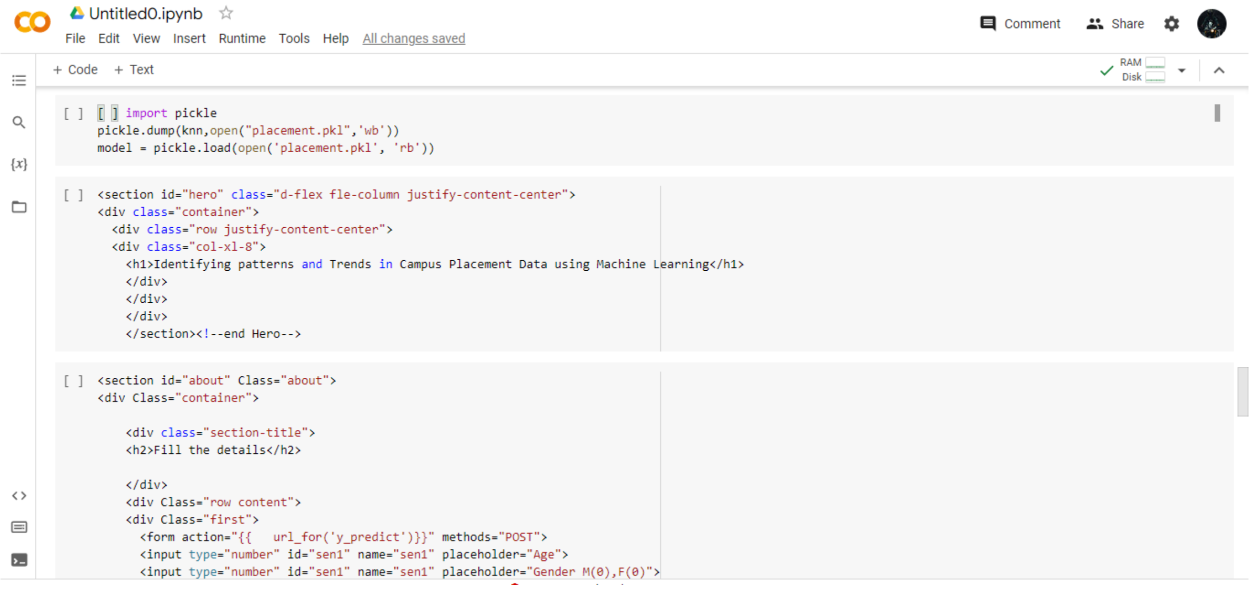
```
[ ] [] classifier =  Sequential()

          #add input layer and first hidden layer
           claasifier.add(keras.layers.Dense(6,activation ='relu' input_dim=6))
           classifier.add(keras.layers.Dropout(0,50))
          #add 2ne hidden layer
          classifier.add(keras.layers.Dense(6,activation = 'relu')
          classifier.add(kerad.layer.dropout(0,50))

          #final or output layer
          classifier.add(keras.layers.dense(1,activation ='sigmoid'))
```

```
[ ] [  ] #compiling the model
    loss_1= tf.keras.losses.BinaryCressentropy()
    classifier.compile(optimizwr = 'Adam', loss = loss_1 ,metrics = ['accuracy'])
```

```
[ ] classifier.fit(x_train,y_train, batch_size = 20, epochs = 100)
```



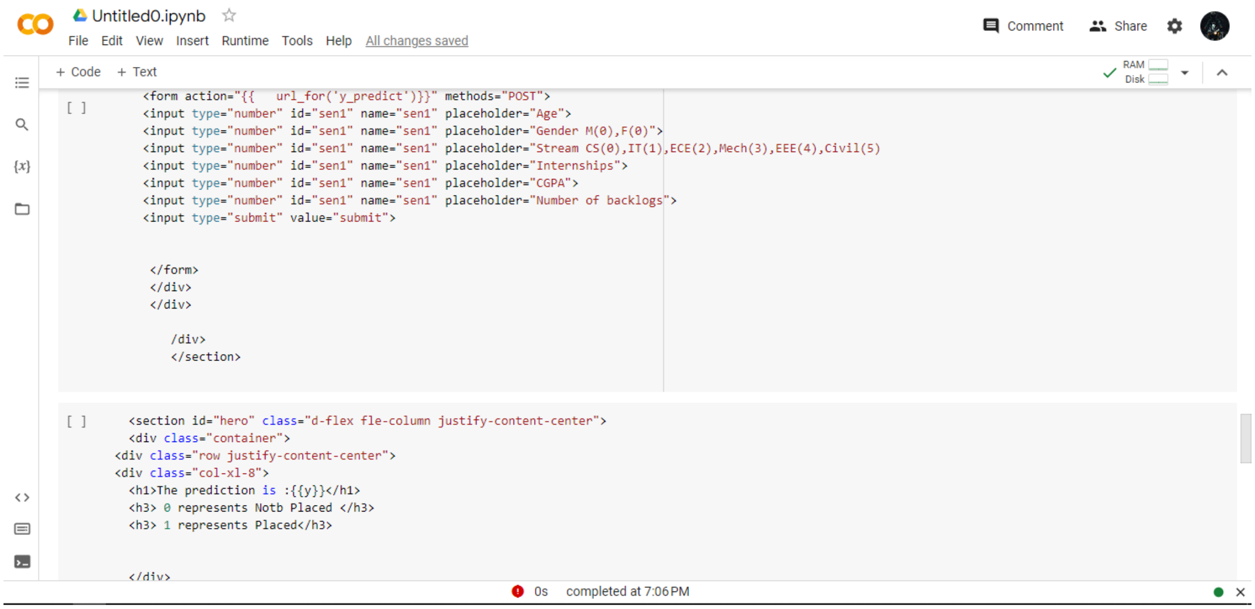
```
[ ] [ ] import pickle
    pickle.dump(knn,open("placement.pkl",'wb'))
    model = pickle.load(open('placement.pkl', 'rb'))
```

```
[ ] <section id="hero" class="d-flex fle-column justify-content-center">
    <div class="container">
      <div class="row justify-content-center">
      <div class="col-xl-8">
        <h1>Identifying patterns and Trends in Campus Placement Data using Machine Learning</h1>
        </div>
        </div>
        </div>
        </section><!--end Hero-->
```

```
[ ] <section id="about" Class="about">
    <div Class="container">

        <div class="section-title">
        <h2>Fill the details</h2>

        </div>
        <div Class="row content">
        <div Class="first">
          <form action="{{   url_for('y_predict')}}" methods="POST">
          <input type="number" id="sen1" name="sen1" placeholder="Age">
          <input type="number" id="sen1" name="sen1" placeholder="Gender M(0),F(0)">
```
]



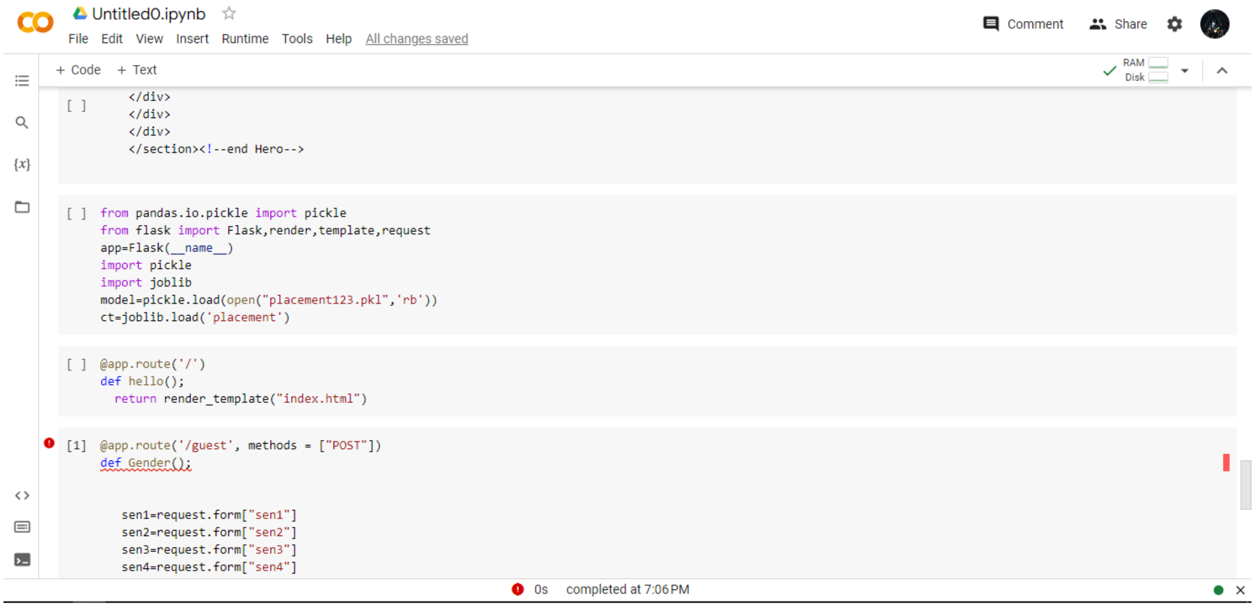
```
[ ]      <form action="{{   url_for('y_predict')}}" methods="POST">
         <input type="number" id="sen1" name="sen1" placeholder="Age">
         <input type="number" id="sen1" name="sen1" placeholder="Gender M(0),F(0)">
         <input type="number" id="sen1" name="sen1" placeholder="Stream CS(0),IT(1),ECE(2),Mech(3),EEE(4),Civil(5)
         <input type="number" id="sen1" name="sen1" placeholder="Internships">
         <input type="number" id="sen1" name="sen1" placeholder="CGPA">
         <input type="number" id="sen1" name="sen1" placeholder="Number of backlogs">
         <input type="submit" value="submit">


          </form>
          </div>
          </div>

             /div>
             </section>
```

```
[ ]    <section id="hero" class="d-flex fle-column justify-content-center">
       <div class="container">
     <div class="row justify-content-center">
     <div class="col-xl-8">
       <h1>The prediction is :{{y}}</h1>
       <h3> 0 represents Notb Placed </h3>
       <h3> 1 represents Placed</h3>


       </div>
```



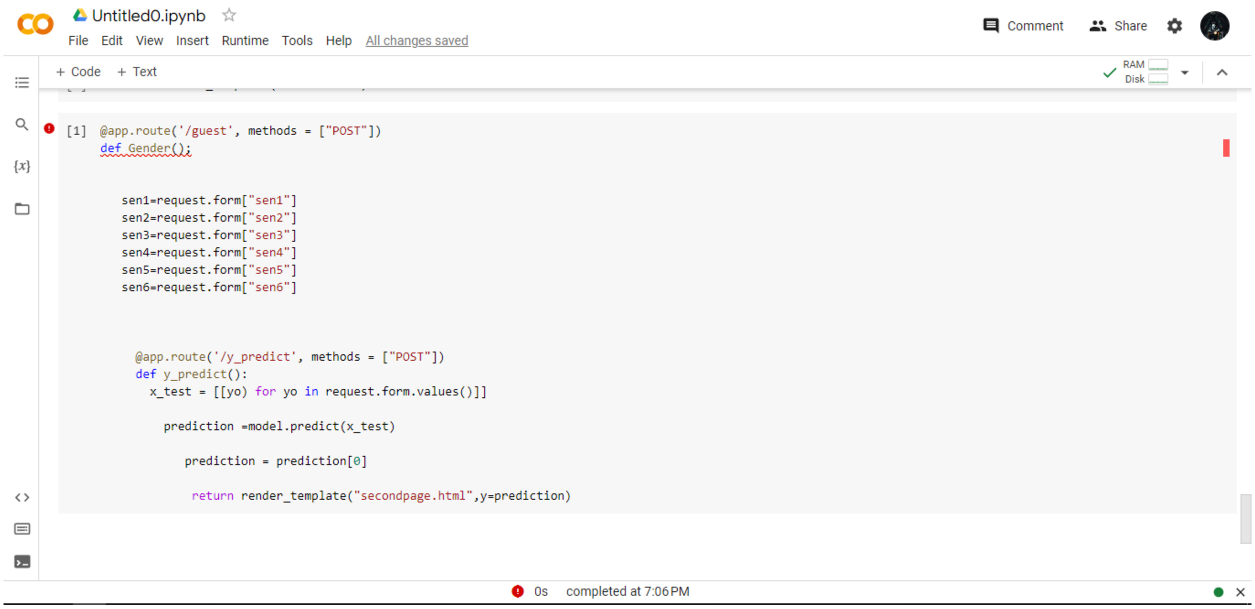
```
[ ]     </div>
        </div>
        </div>
        </section><!--end Hero-->
```

```
[ ] from pandas.io.pickle import pickle
    from flask import Flask,render,template,request
    app=Flask(__name__)
    import pickle
    import joblib
    model=pickle.load(open("placement123.pkl",'rb'))
    ct=joblib.load('placement')
```

```
[ ] @app.route('/')
    def hello();
      return render_template("index.html")
```

```
[1] @app.route('/guest', methods = ["POST"])
    def Gender();


       sen1=request.form["sen1"]
       sen2=request.form["sen2"]
       sen3=request.form["sen3"]
       sen4=request.form["sen4"]
```



```
[1] @app.route('/guest', methods = ["POST"])
    def Gender();


       sen1=request.form["sen1"]
       sen2=request.form["sen2"]
       sen3=request.form["sen3"]
       sen4=request.form["sen4"]
       sen5=request.form["sen5"]
       sen6=request.form["sen6"]



         @app.route('/y_predict', methods = ["POST"])
         def y_predict():
           x_test = [[yo) for yo in request.form.values()]]

             prediction =model.predict(x_test)

                prediction = prediction[0]

                 return render_template("secondpage.html",y=prediction)
```

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