## WEB PHISHING DETECTION PROJECT REPORT

### Submitted By

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In partial fulfilment for the award of the degree

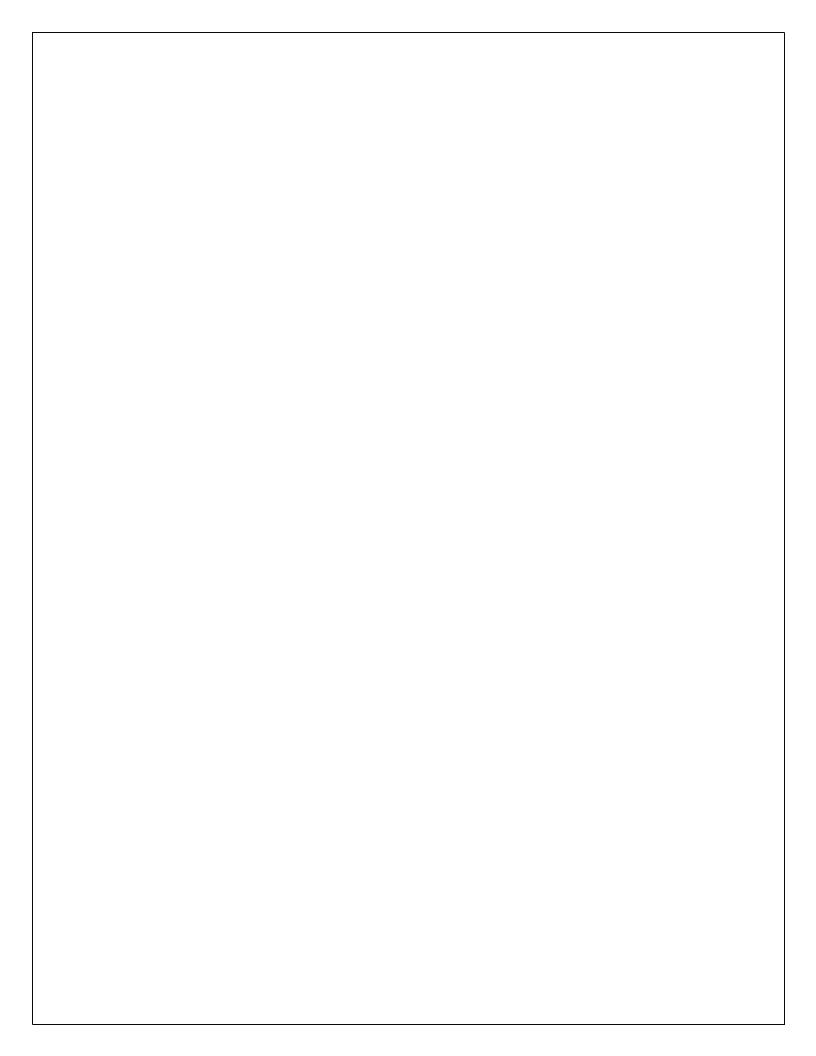
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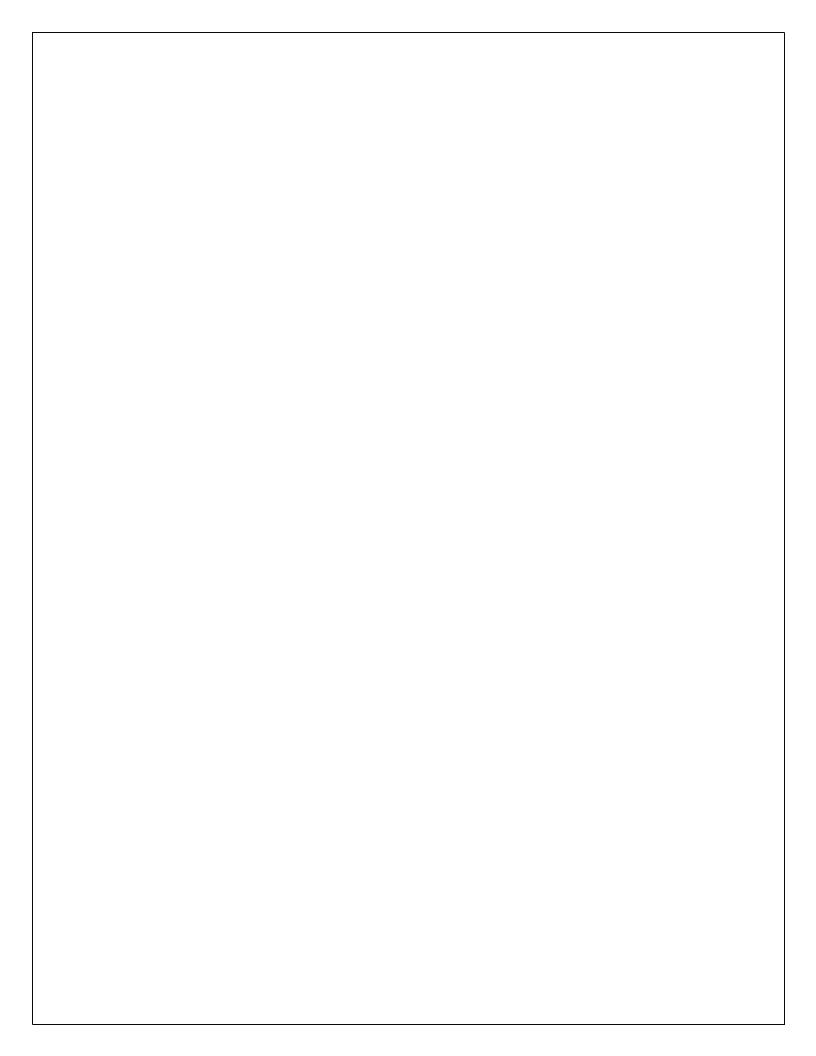
#### **BACHELOR OF TECHNOLOGY**

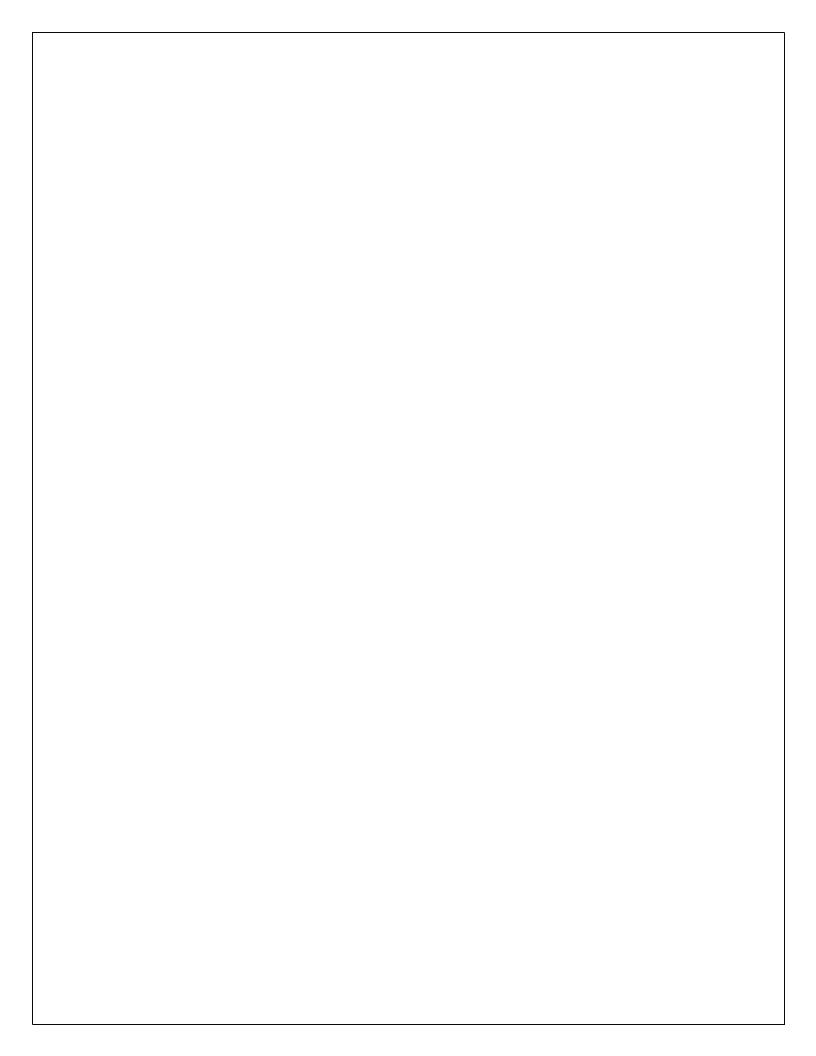
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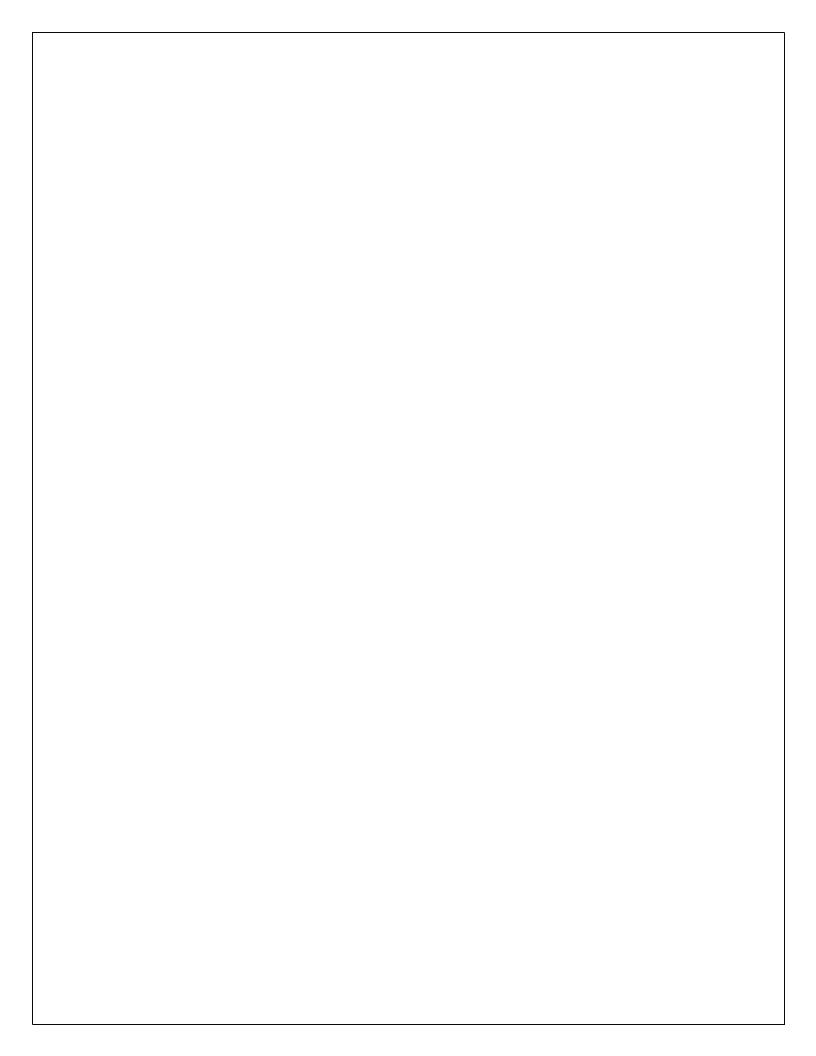


# INFORMATION TECHNOLOGY KINGS ENGINEERING COLLEGE, IRUNGATTUKOTAI ANNA UNIVERSITY: CHENNAI 600025









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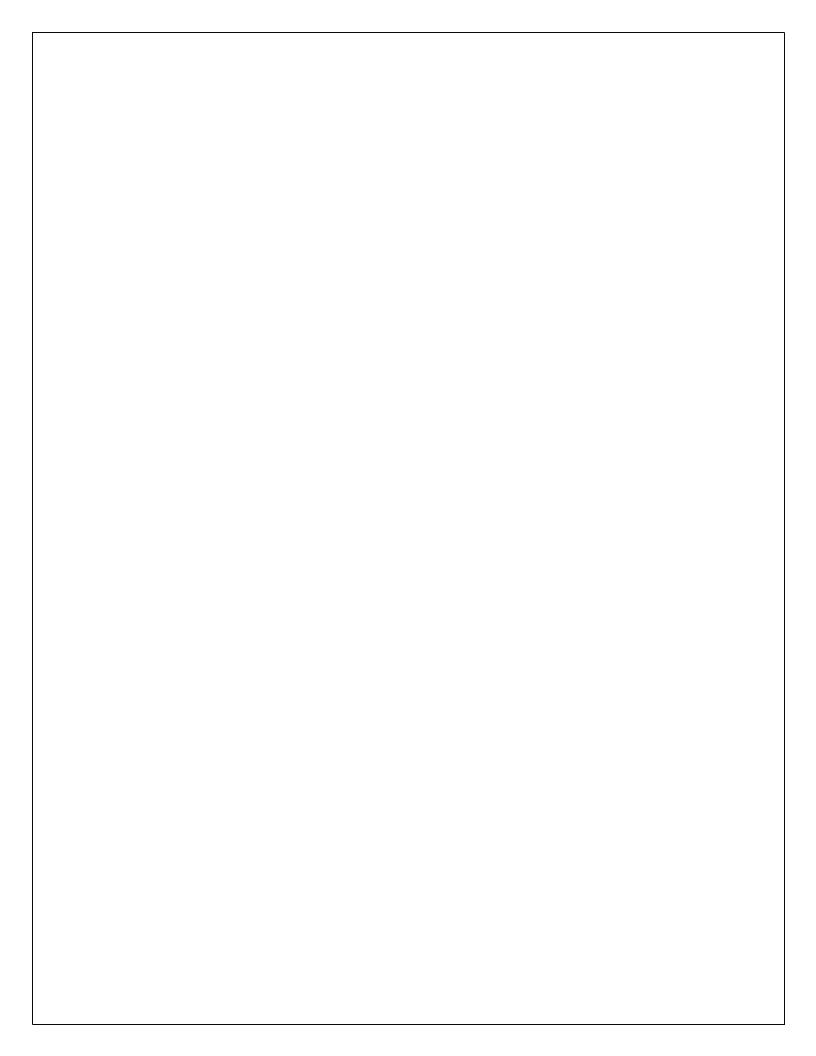
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#### **CHAPTER 1**

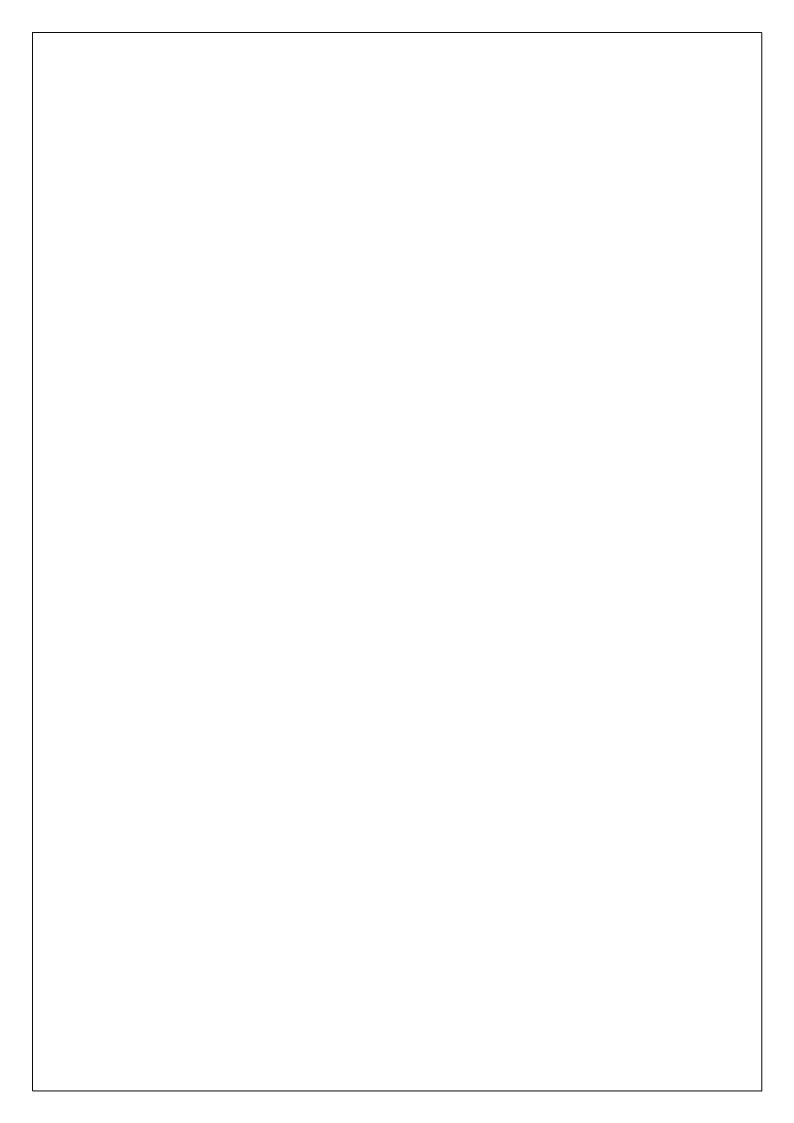
#### **INTRODUCTION:**

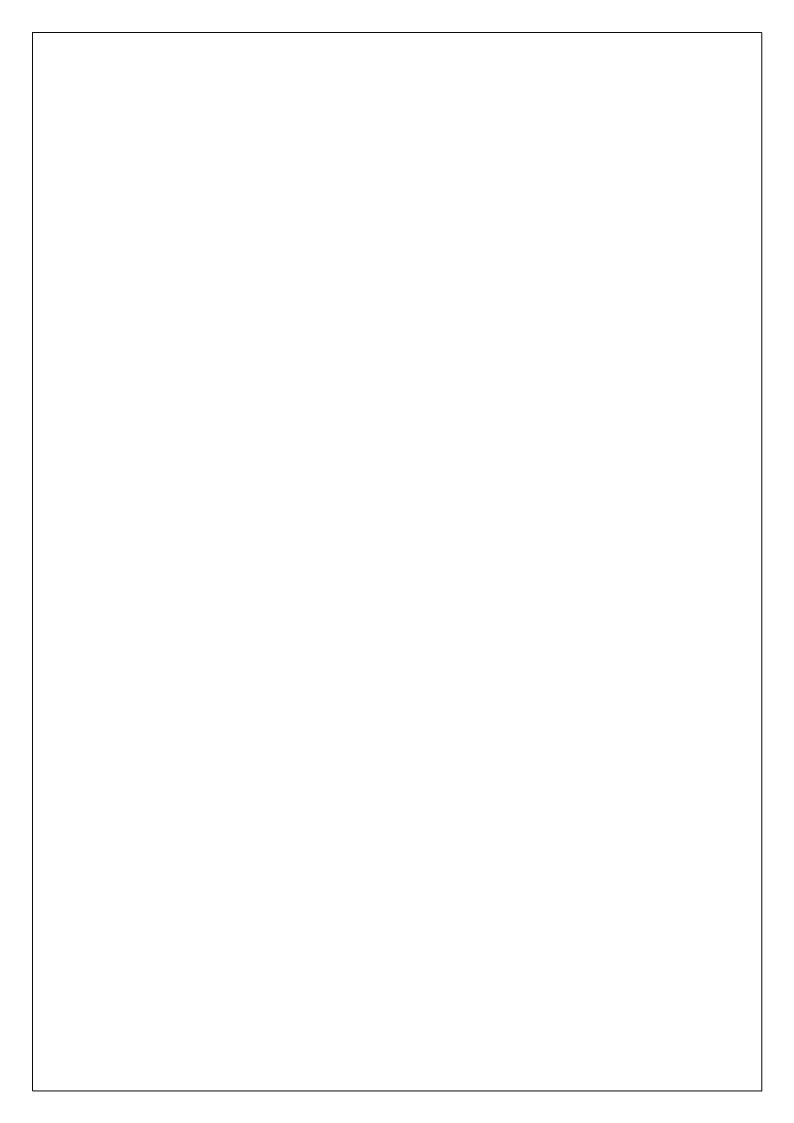
#### : PROJECT OVERVIEW

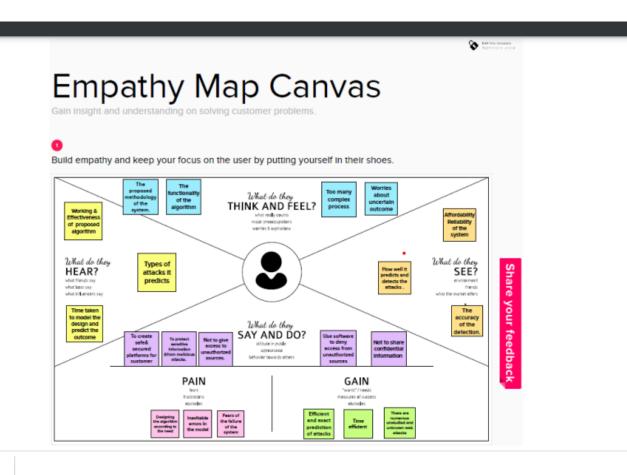
The terms "heart disease" and "cardiovascular disease" are frequently used interchangeably. Heart disease is a general term that covers a wide range of heart related medical conditions. The irregular health state that directly affects the heart and all of its components is characterized by these medical conditions. In order to forecast cardiac disease, this study discusses various data mining, big data, and machine learning techniques. Building an important model for the medical system to forecast heart disease or cardiovascular illness requires the use of data mining and machine learning. Our application helps the user in finding out if they have heart disease or not. They can find out by entering details such as their heart rate, cholesterol, blood pressure etc. A dashboard is also attached along with the results for better understanding where they can compare their blood pressure and similar metrics with other users. This project focuses on Random Forest Classifier. The accuracy of our project is 87% for which is better than most other systems in terms of achieving accuracy quickly.

#### : PURPOSE

This project's goal is to determine, depending on the patient's medical characteristics—such as gender, age, chest pain, fasting blood sugar level, etc.—whether they are likely to be diagnosed with any cardiovascular heart illnesses. The leading cause of death in the developed world is heart disease. Heart disease cases are rising quickly every day, thus it's crucial and worrisome to predict any potential illnesses in advance. This diagnosis is a challenging task that requires accuracy and efficiency. Therefore, there needs to be work done to help prevent the risks of having a heart attack or stroke. It is the main factor in adult deaths. By using a person's medical history, our initiative can identify

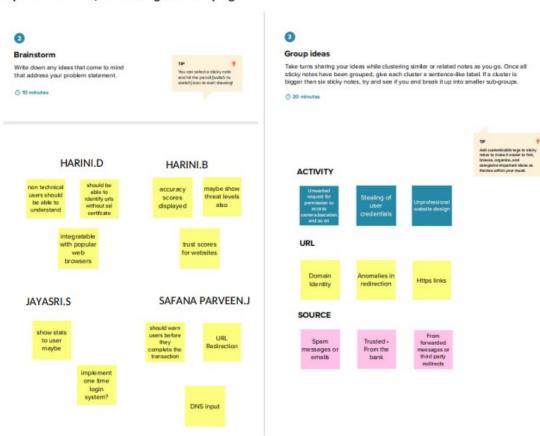


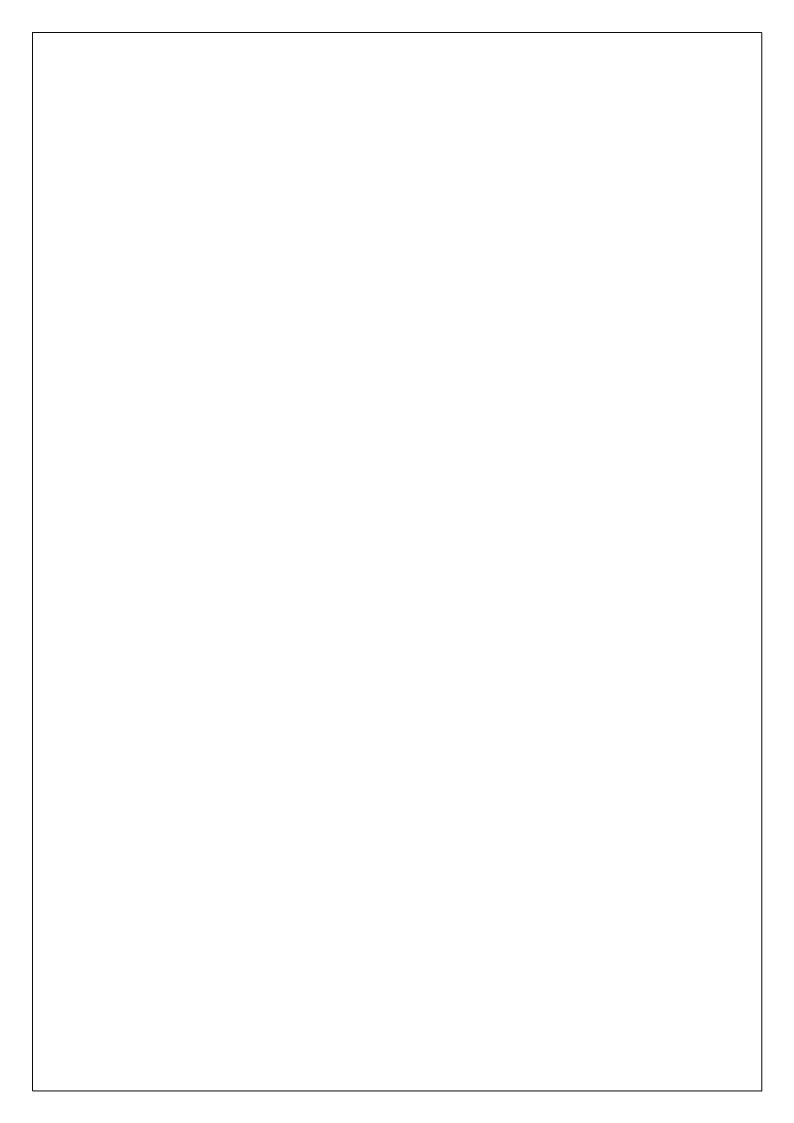




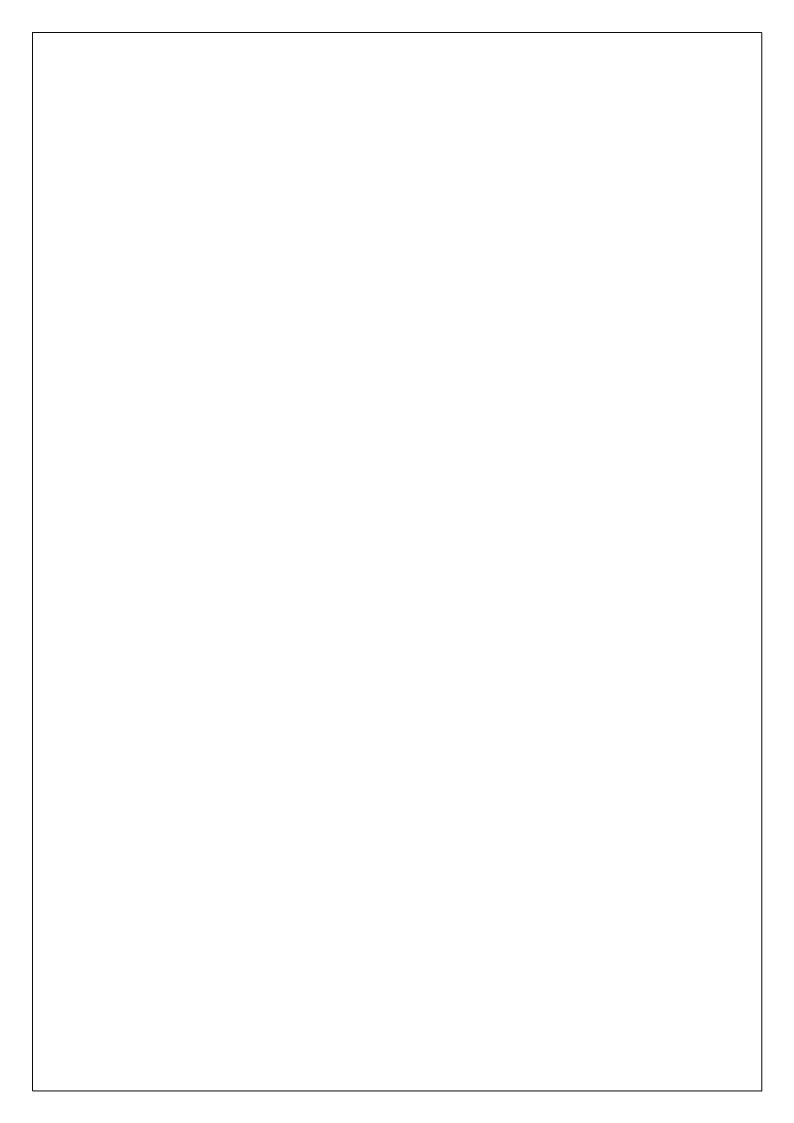
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Step-2: Brainstorm, Idea Listing and Grouping



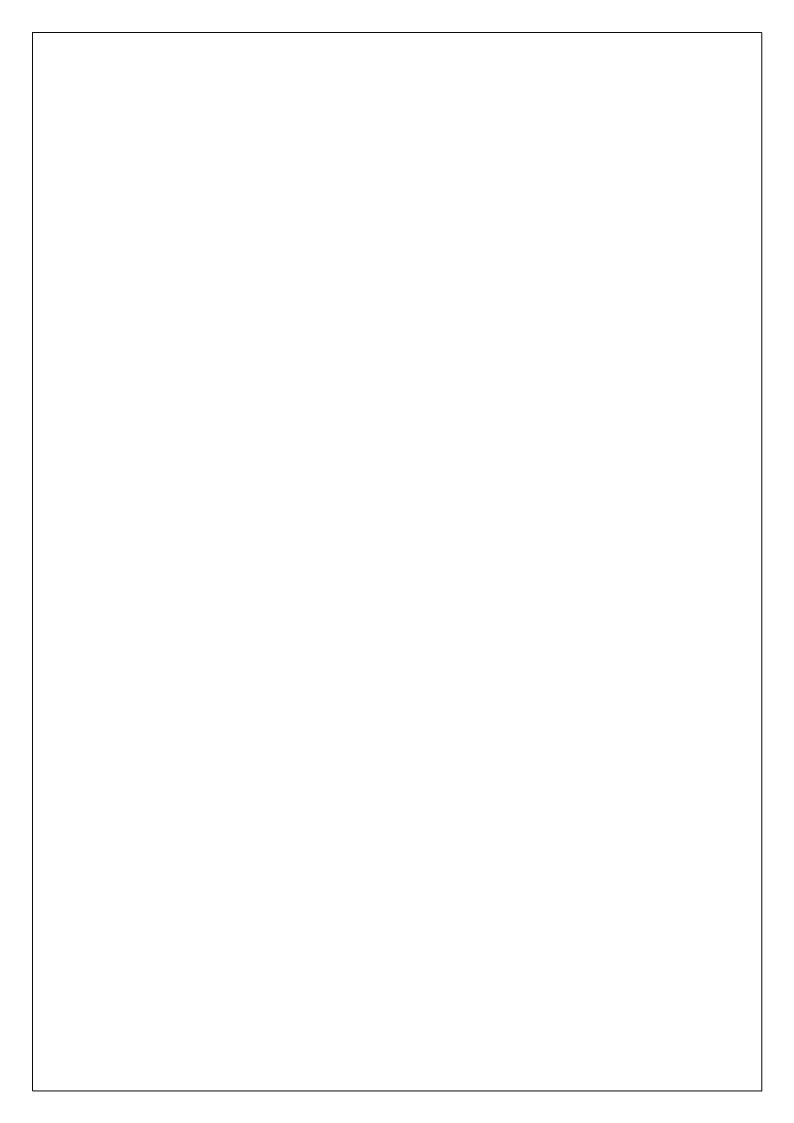


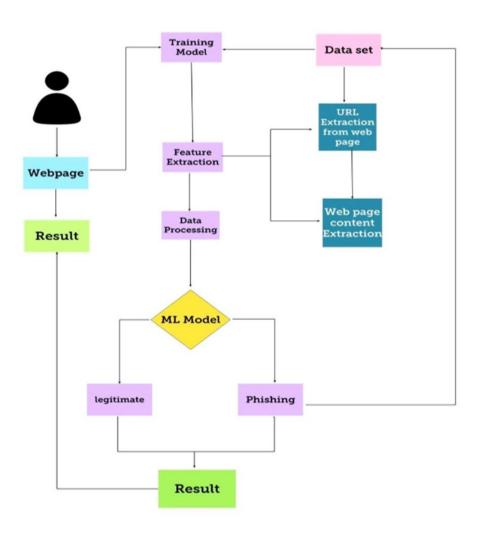
accuracy of 98.48% with 2.09% false-positive rate on benchmark dataset, which outperforms the existing baseline approaches.

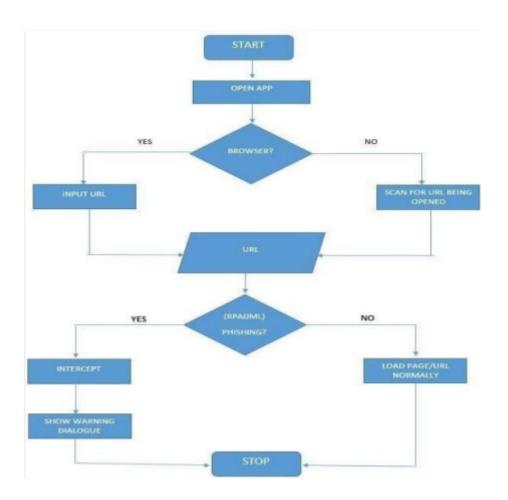


S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Hackers are increasingly launching attacks via SMS and social media. Games and dating apps introduce yet another attack vector. However, current deep learning-based phishing detection applications are not applicable to mobile devices due to the computational burden.
2.	Idea / Solution description	Our solution that helps the user to detect and protect themselves from the spam and dangerous websites. Our application protect your personal information from the third party. We make you feel safe all the time.
3.	Novelty / Uniqueness	There are various anti-phishing techniques are there but we are different from others. We analysis the system as soon as we notice the indifference in the system. Our uniqueness is we are very user friendly application that makes yours information keeps safe and private.
4.	Social Impact / Customer Satisfaction	The customer can work with their transaction peacefully. We provide a safe and secure feel to our user. We develop a app that check the websites with the high efficiency way. We identify and remediate phishing threats before the phishing attack can cause damage.
5.	Scalability of the Solution	We automate various routine remediation process in response to threats, saving admins more time and reducing the time it takes to identify and remediate high-tier vulnerabilities

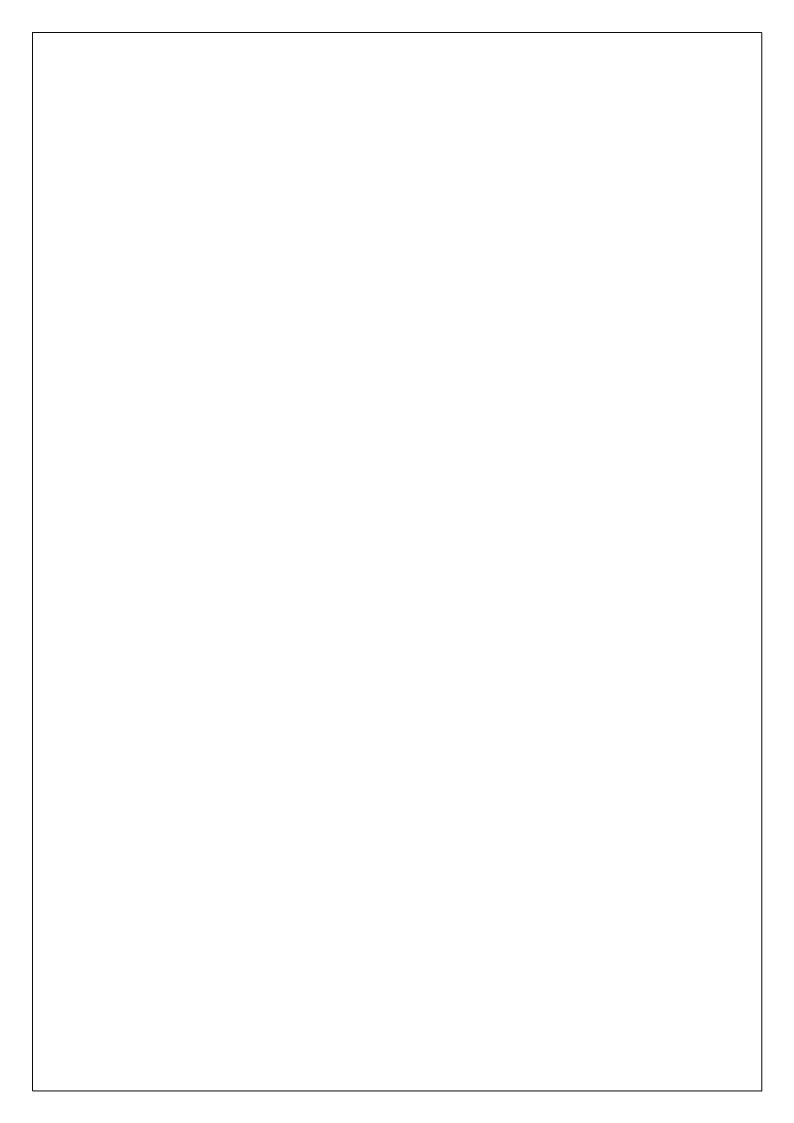
User Type	Functional Requirement	User Story Number	User Story/Task	Acceptance criteria	Priority	Release
Customer (Mobile User)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account/dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email and confirmation	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register and access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail	•	Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard					
Customer (Web User)	User Input	USN-1	As the user I can input the particular URL in the required field and waiting for a validation	I can go access the website without any problem	High	Sprint-1
Customer Care Executive	Feature Extraction	USN-1	After I compare in case if none found on comparison then we can extract feature using heuristic and visual similarity	In this I can have comparison between websites for security	High	Sprint-1







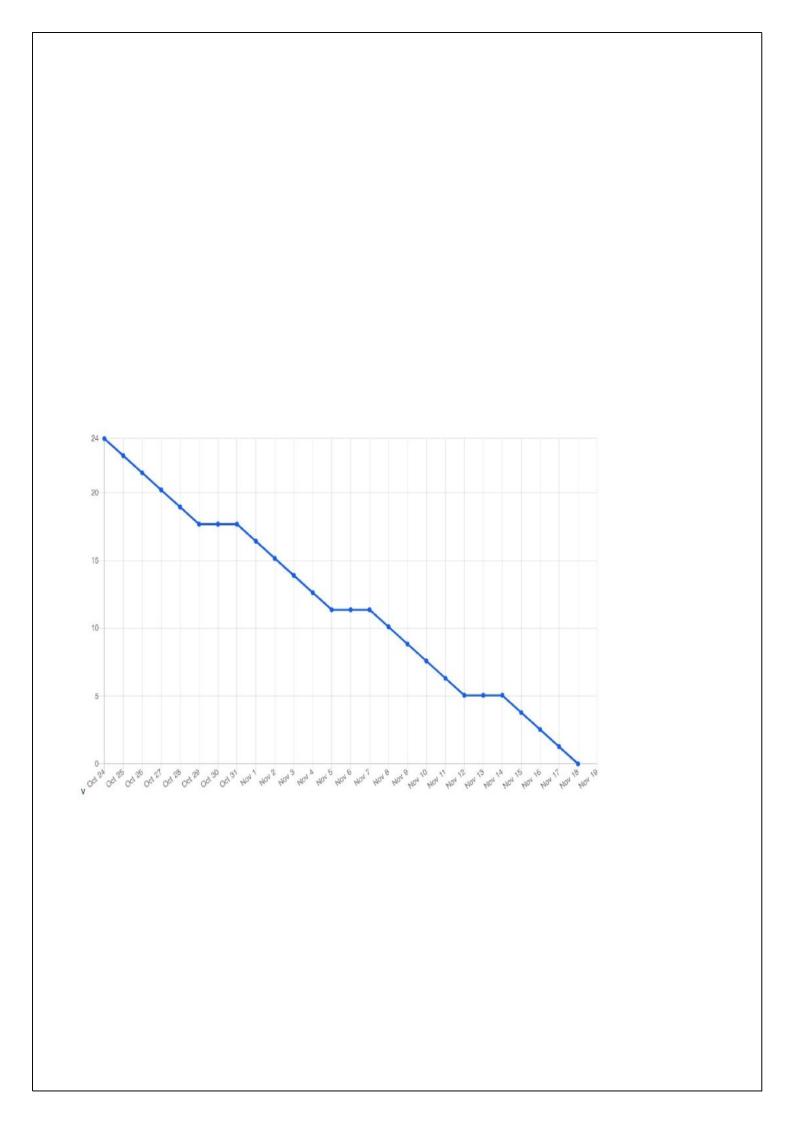
	7.	Improve model	Accuracy is one metric for evaluating classification	Machine Learning
		performance	models. Informally, accuracy is the fraction of predictions	
			our model got right.	
8	8.	Checking	A data accuracy check, sometimes called a data sanity	Machine Learning
		accuracy	check, is a set of quality validations that take place before	
			using data.	

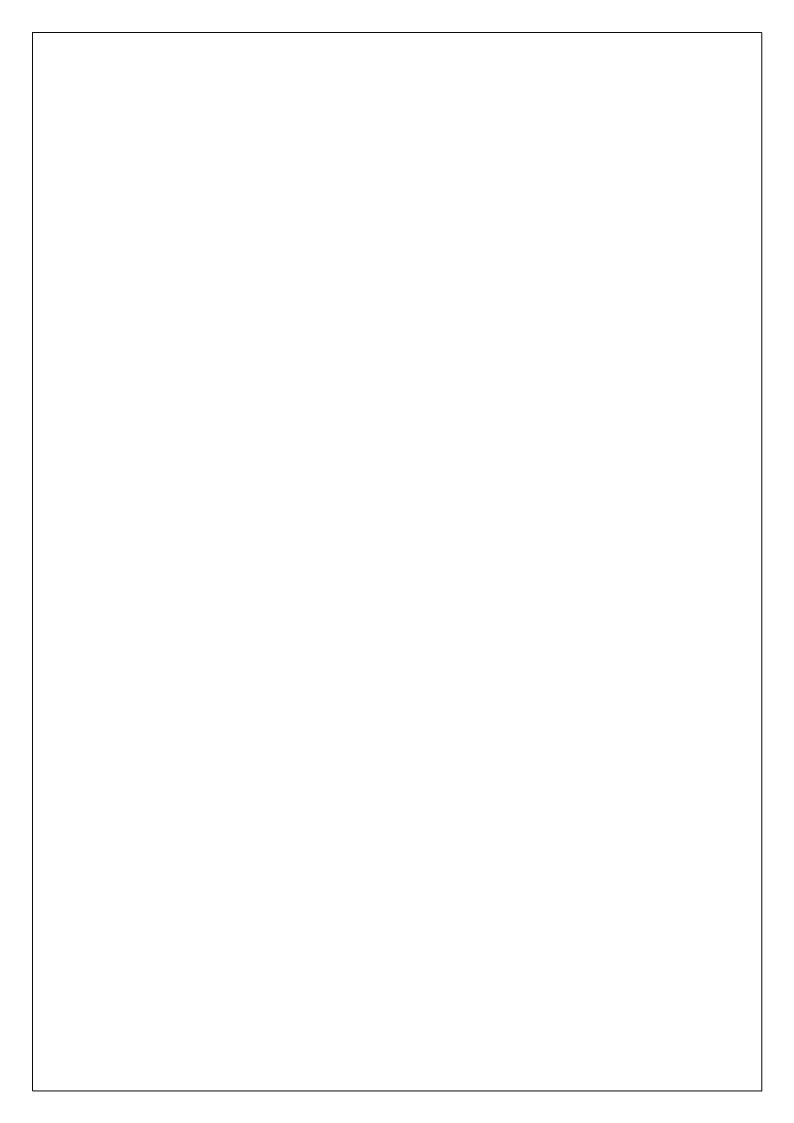


#### Product Backlog, Sprint Schedule, and Estimation (4 Marks)

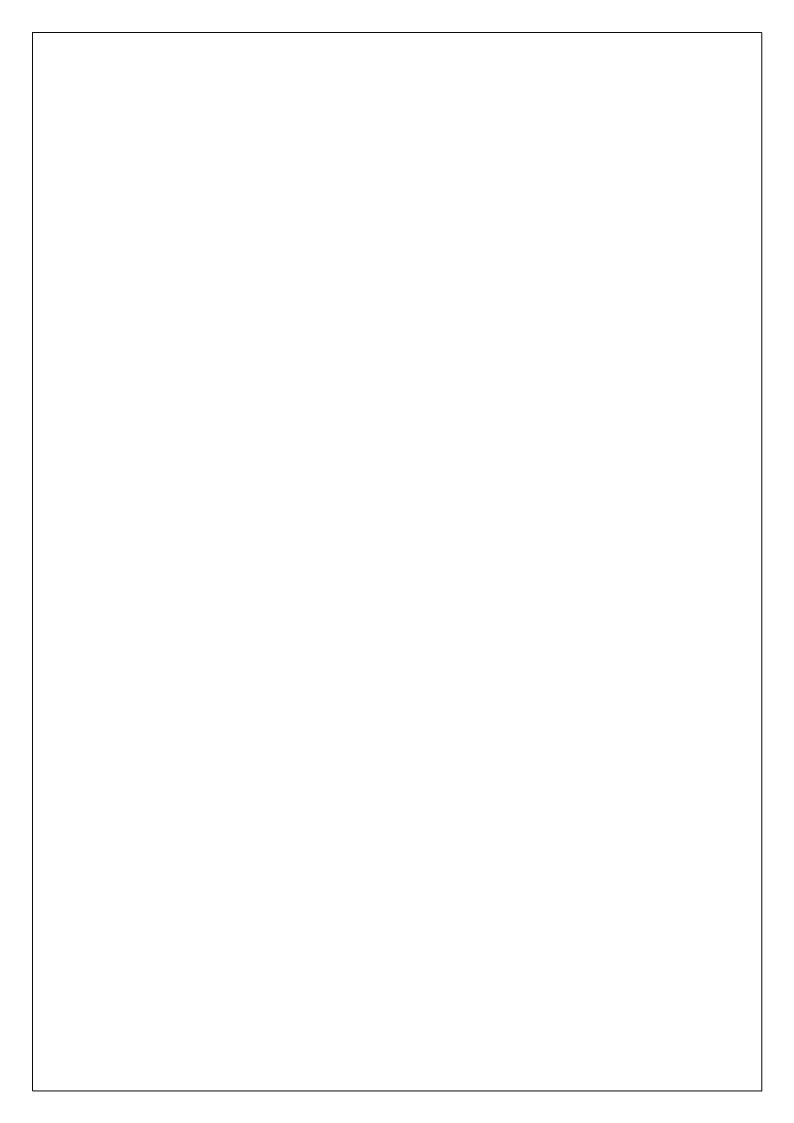
Use the below template to create product backlog and sprint schedule

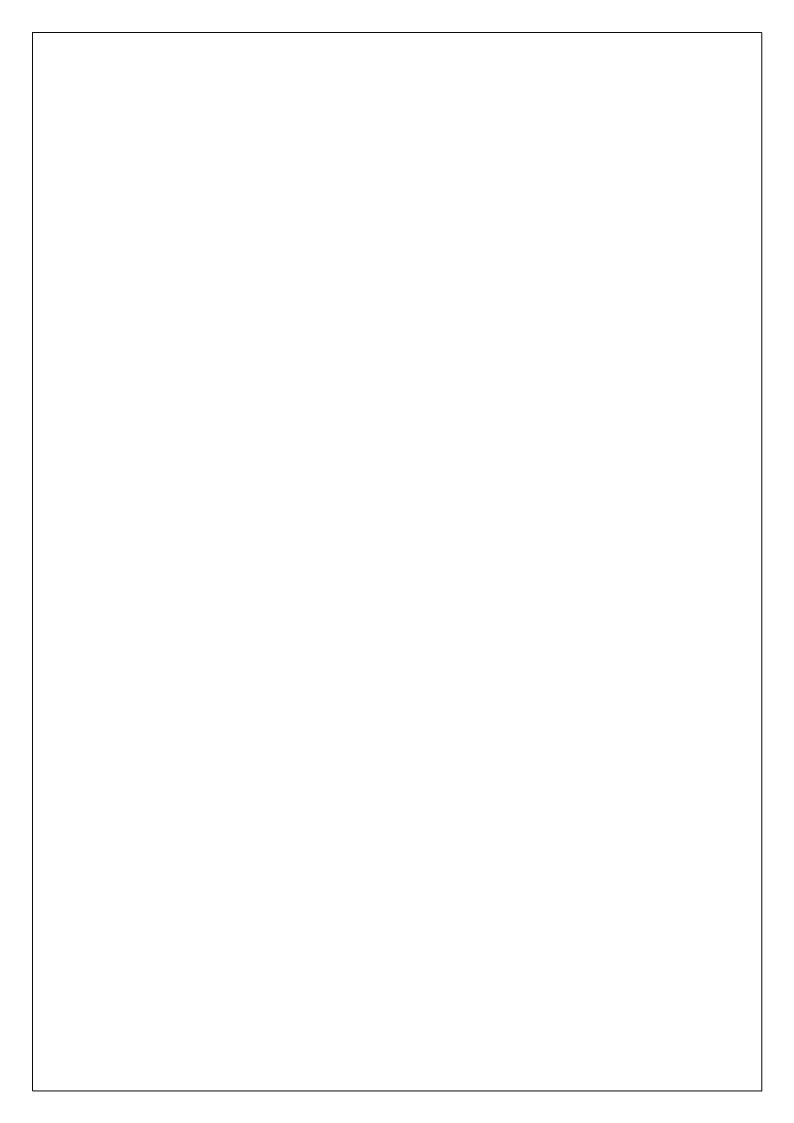
Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	User input	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	HARINI.B
Sprint-1	Website Comparison	USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	JAYASRI.S,SAFANA PARVEEN
Sprint-2	Feature Extraction	USN-3	As a user, I can register for the application through Facebook	2	Low	HARINI.D
Sprint-1	Prediction	USN-4	As a user, I can register for the application through Gmail	2	Medium	HARINI.B,SAFANA PARVEEN
Sprint-1	Classifier	USN-5	As a user, I can log into the application by entering email & password	1	High	JAYASRI.S

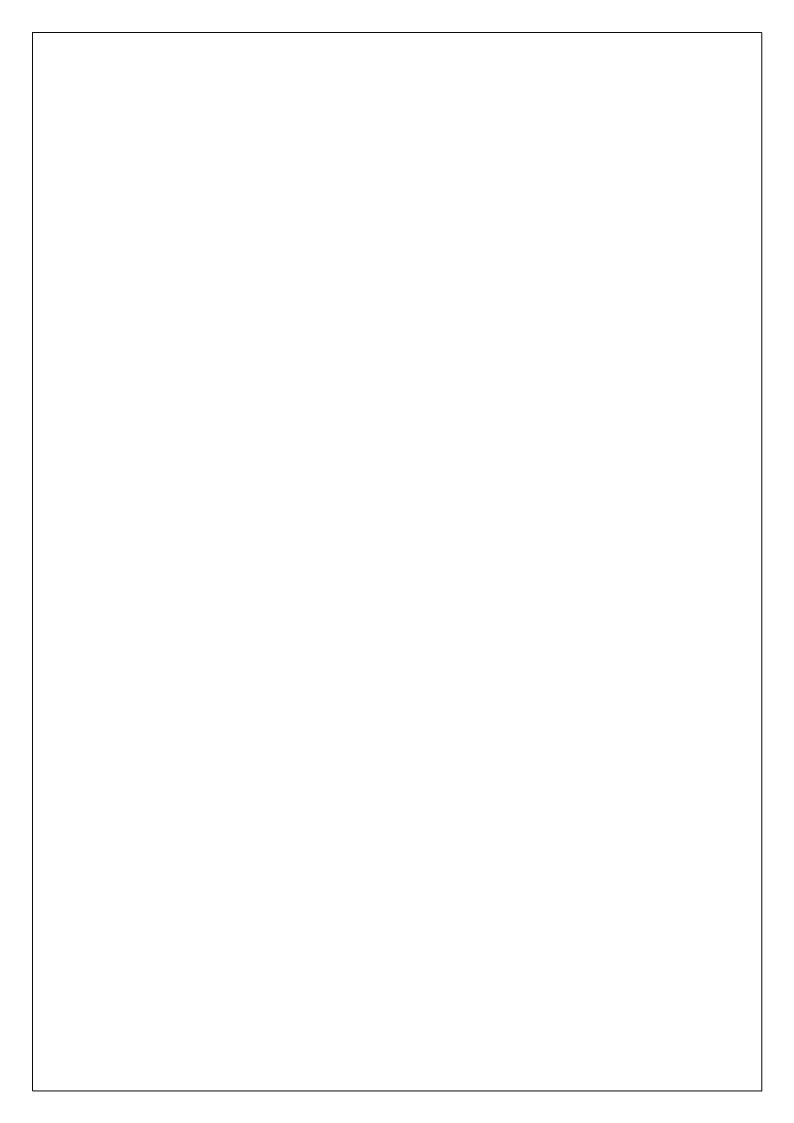


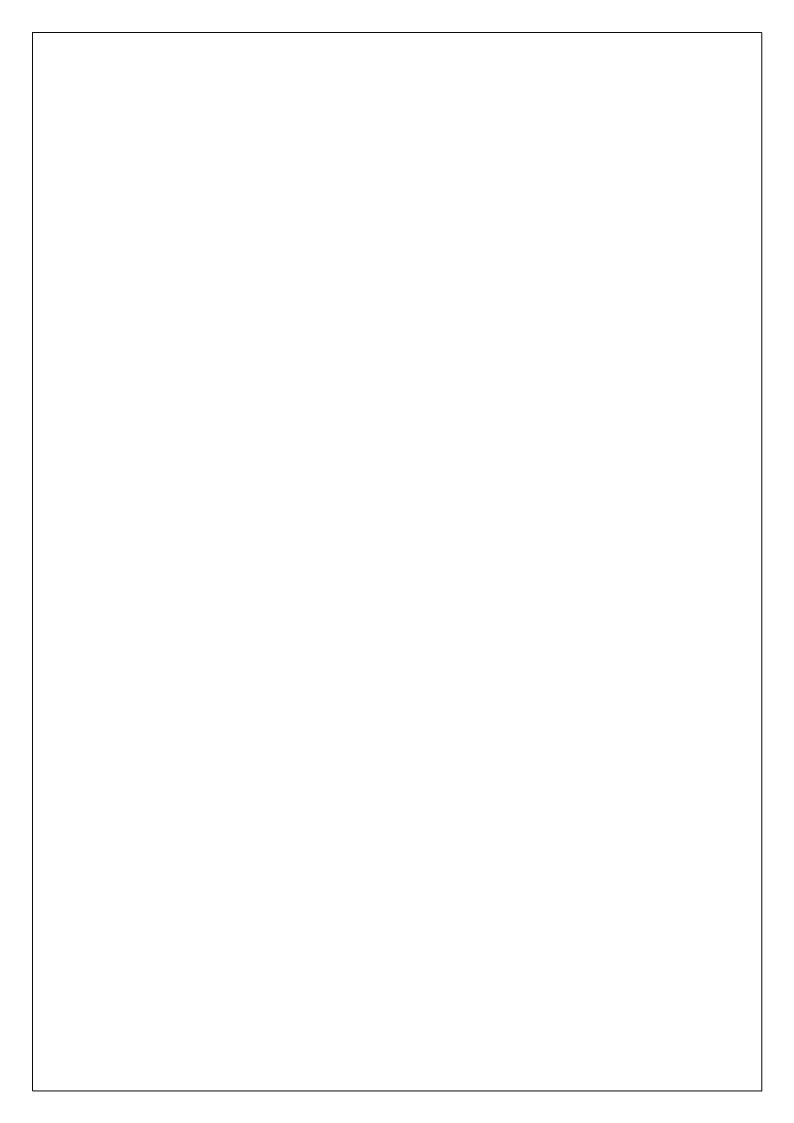


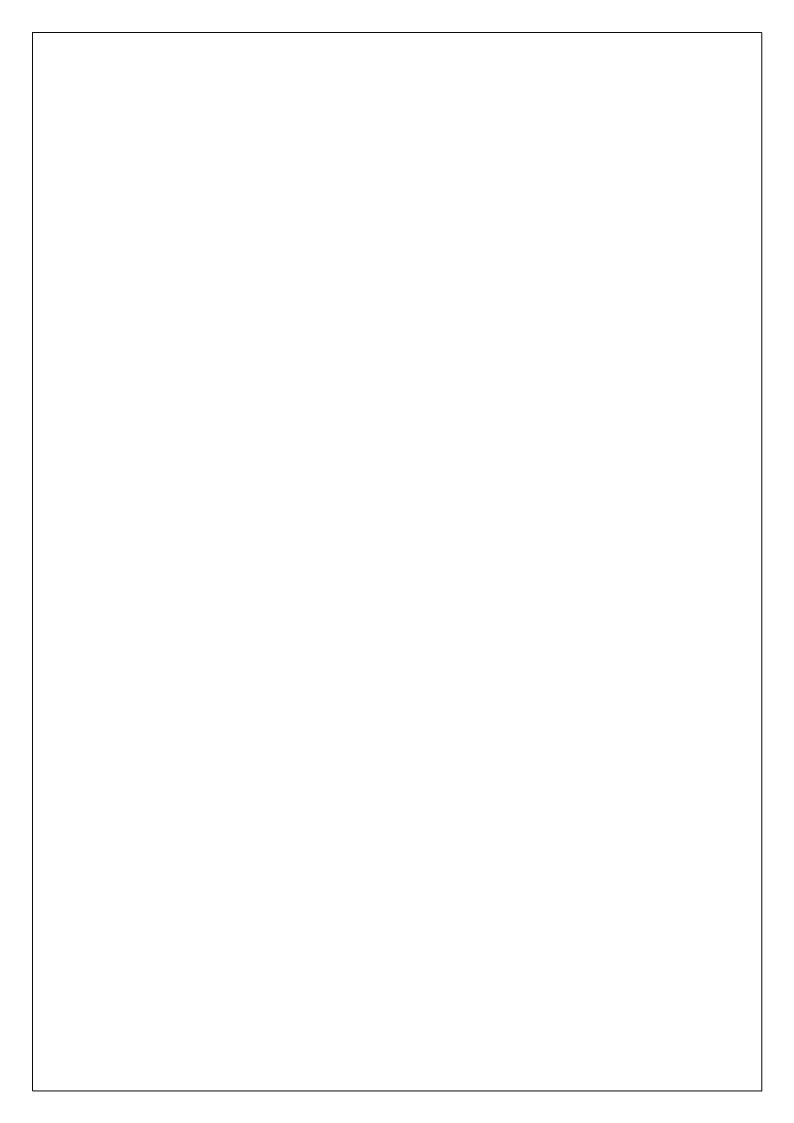
Code:











In [84]: import numpy as np import pandas as pd import plotly import plotly.express as px

import cufflinks as cf
import matplotlib.pyplot as plt
import seaborn as sns

import plotly.offline as pyo
from plotly.offline import init\_notebook\_mode,plot,iplot

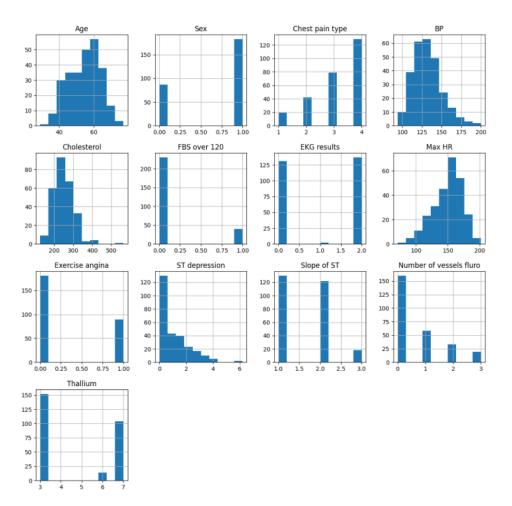
In [85]: pyo.init\_notebook\_mode(connected=True)
 cf.go\_offline()

In [86]: heart

Out[86]: Age Sex Chest pain type BP Cholesterol FBS over 120 EKG results Max HR Exercise angina ST depression Slope of ST Number of vessels filuro Thallium Heart Disease 0 70 4 130 2.4 1 67 3 115 1.6 57 1 2 124 0.3 3 64 4 128 0.2 4 74 2 120 0.2 3 172 0.5 2 120 0.0 44 1 2 140 1.3 0.4 268 57 1 4 140 269 67 1 4 160 1.5 

270 rows × 14 columns

```
In [87]: heart = pd.read_csv(r'C:\Users\91967\Desktop\data\heart.csv')
  In [88]: info = ["Age","1: male, 0: female","Chest pain type, 1: typical angina, 2: atypical angina, 3: non-anginal pain, 4: asymptomatic", "resting blood pressure"," serum cholestoral in mg
                for i in range(len(info)):
    print(heart.columns[i]+":\t\t"+info[i])
                                                 Age
1: male, 0: female
2: atypical angina, 3: non-anginal pain, 4: asymptomatic
2: resting blood pressure
2: serum cholestoral in mg/dl
2: fasting blood sugar > 120 mg/dl
2: fasting blood sugar > 120 mg/dl
2: resting electrocardiographic results (values 0,1,2)
2: maximum heart rate achieved
2: maximum heart rate achieved
2: exercise induced angina
3: oldpeak = ST depression induced by exercise relative to rest
3: the slope of the peak exercise ST segment
3: number of major vessels (0-3) colored by flourosopy
3: thal: 3 = normal; 6 = fixed defect; 7 = reversable defect
                 Sex:
Chest pain type:
                BP:
Cholesterol:
FBS over 120:
EKG results:
                ERG results:
Max HR: n
Exercise angina:
ST depression:
Slope of ST:
Number of vessels fluro:
Thallium:
  In [89]: heart['Heart Disease']
                          Presence
Absence
Presence
  Dut[89]: 0
                265 Absence
266 Absence
267 Absence
268 Absence
269 Presence
Name: Heart Disease, Length: 270, dtype: object
   n [90]: heart.groupby('Heart Disease').size()
 Out[90]: Heart Disease
Absence 150
Presence 120
dtype: int64
  In [91]: heart.groupby('Heart Disease').sum()
  Out[91]:
                                Age Sex Chest pain type BP Cholesterol FBS over 120 EKG results Max HR Exercise angina ST depression Slope of ST Number of vessels fluro Thallium
                Heart Disease
                     Absence 7906 83
                                                              423 19330
                                                                                     36632
                                                                                                           23
                                                                                                                          129 23750
                                                                                                                                                                            93.4
                                                                                                                                                                                             210
                                                                                                                                                                                                                           43
               Presence 6791 100 434 16133 30776 17 147 16663
                                                                                                                                                                           190.1 218
  In [92]: heart.shape
 Out[92]: (270, 14)
In [93]: heart.describe()
              Age Sex C
                                             Sex Chest pain type
                                                                                   BP Cholesterol FBS over 120 EKG results
                                                                                                                                              Max HR Exercise angina ST depression Slope of ST Number of vessels fluro Thallium
                                                         270.000000 270.000000 270.000000 270.000000 270.000000 270.000000
                                                                                                                                                               270.000000
                                                                                                                                                                                  270.00000 270.000000
                                                                                                                                                                                                                               270.000000 270.000000
               0.670370 4.696296
                                                                                                                                                                   0.470952
                  std 9.109067 0.468195
                                                              0.950090 17.861608 51.686237
                                                                                                              0.355906
                                                                                                                               0.997891 23.165717
                                                                                                                                                                                       1.14521
                                                                                                                                                                                                    0.614390
                                                                                                                                                                                                                                   0.943896
                                                                                                                                                                                                                                                  1.940659
               min 29.000000 0.000000 1.000000 94.000000 126.000000
                                                                                                                                                                                       0.00000 1.000000
                                                                                                             0.000000 0.000000 71.000000
                                                                                                                                                                 0.000000
                                                                                                                                                                                                                                0.000000 3.000000
                                                              3.000000 120.000000 213.000000
                50% 55.00000 1.00000 3.00000 130.00000 245.00000 0.00000 2.00000 153.50000
                                                                                                                                                                  0.000000
                                                                                                                                                                                       0.80000 2.000000
                                                                                                                                                                                                                                 0.000000 3.000000
                 75% 61.000000 1.000000
                                                            4 000000 140 000000 280 000000
                                                                                                             0.000000
                                                                                                                              2 000000 166 000000
                                                                                                                                                                  1.000000
                                                                                                                                                                                       1,60000
                                                                                                                                                                                                    2 000000
                                                                                                                                                                                                                                   1.000000
                                                                                                                                                                                                                                                 7 000000
                max 77.00000 1.000000 4.000000 140.000000 280.000000 max 77.000000 1.000000 4.000000 200.000000 564.000000
                                                                                                            1.000000 2.000000 202.000000
                                                                                                                                                                  1.000000
                                                                                                                                                                                       6.20000
                                                                                                                                                                                                    3.000000
                                                                                                                                                                                                                                   3.000000 7.000000
In [94]: heart.info()
               <class 'pandas.core.frame.DataFrame'>
RangeIndex: 270 entries, 0 to 269
Data columns (total 14 columns):
# Column Non-Null Count Dtype
                     Age
Sex
Chest pain type
BP
                                                            Non-Null Count Dtype
270 non-null int64
                       Cholesterol
               4 Chalesterol 278 non-null 5 FBS over 128 278 non-null 6 EKG results 278 non-null 7 Max HR 278 non-null 8 Exercise angina 278 non-null 9 ST depression 278 non-null 10 Slope of ST 278 non-null 11 Number of vessels fluro 278 non-null 12 Thallium 278 non-null 12 Thallium 278 non-null 13 Heart Disease 278 non-null dtypes: float64(1), int64(12), object(1) memory usage: 29.7* KB
                                                                                      int64
int64
int64
float64
                                                                                      int64
In [95]: heart['Heart Disease'].unique()
Out[95]: array(['Presence', 'Absence'], dtype=object)
In [96]: heart.hist(figsize=(14,14))
plt.show()
```

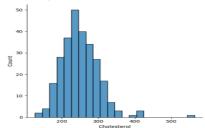


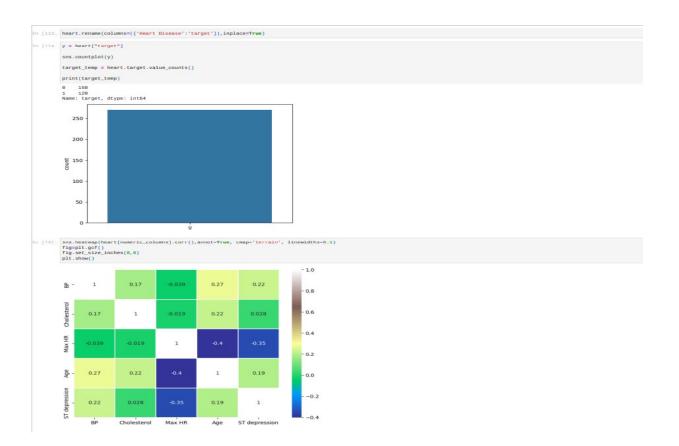


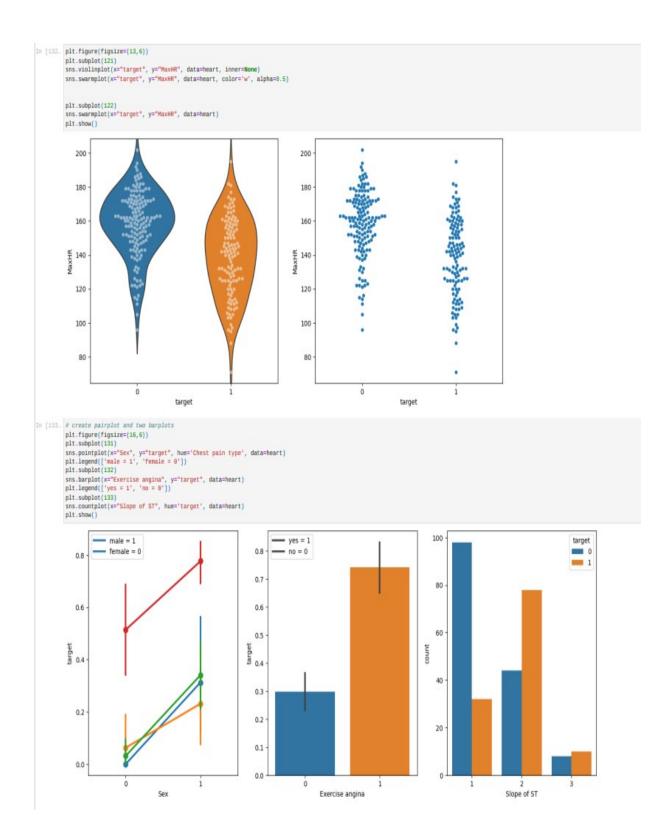




In [73]: sns.displot(heart["Cholestero1"])
Out[73]: <seaborn.axisgrid.FacetGrid at 0x12de4f9566



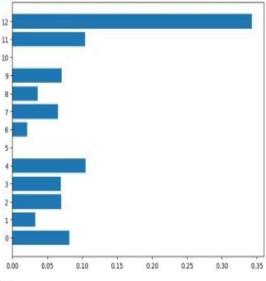




```
DATA Processing
In [134_ heart['target'].value_counts()
Out[134]: 0 150
1 120
           Name: target, dtype: int64
In [135_ heart['target'].isnull()
Out[135]: 0
                  False
                  False
                  False
False
          265 False
           267
                  False
           268 False
           269 False
           Name: target, Length: 270, dtype: bool
In [136_ heart['target'].sum()
Out[136]: 120
In [137_ heart['target'].unique()
Out[137]: array([1, 0], dtype=int64)
In [138_ heart.isnull().sum()
Out[138]: Age
           Chest pain type
           Cholesterol
          FBS over 120
EKG results
           MaxHR
           Exercise angina
          ST depression
Slope of ST
Number of vessels fluro
Thallium
          target
dtype: int64
          Storing in X and y
In [139_ X,y=heart,heart.target
In [148_ X.drop('target',axis=1,inplace=True)
In [141_ y
Out[141]: 0 1
           266
           267
           269
           Name: target, Length: 270, dtype: int64
         Or X, y = heart.iloc[:, :-1], heart.iloc[:, -1]
In [142_ X.shape
Out[142]: (270, 10)
In [143_ y.shape
Out[143]: (270,)
In [144. from ablourn.model_aminution import train_test_aplit from sklearn.preprocessing import StandardScaler
IN [145_ sc = standardscaler()
         X = sc.fit_transform(X)
```

```
A = ac. rat_trunsreru(A)
In [146. X_train, X_test, y_train, y_test=train_test_split(X, y, random_state=10, test_size=0.3, shuffle=True)
In [147_ X_test
Out[147]: array([[-1.47745975, 0.6894997 , -1.23884513, ..., -0.95423434,
                    ·0.71153494, ·0.87570581],
                  [ 1 68218896, 8 6894997 , 12 29253153, , 8 67641928,
                   U.3498/U//, -U.8/5/U581),
                 [-8.37761378, 0.6894997 , -8.18355874, ..., 0.67641928, -0.7150494, -0.07570501],
                 [-0.81755217, 0.6894997 , -0.18355874, ..., -0.95423434,
                    ·0.71153494, ·0.87570581],
                  [ 0.50226299, -1.45032695, 0.87092765, ..., 0.67641928,
                   ·0.71153494, ·0.87570581],
                  [-0.70756757, 0.6894997 , -0.18355874, ..., -0.95423434,
                   1.41127648, -0.87570581]])
In [148_ y_test
Out[148]: 111 0
          179
           186
           185
           217
          258
           69
           58
          194 0
          Name: target, Length: 81, dtype: int64
IN [149_ print ("train_set_x snape: " + str(x_train.snape))
         print ("train_set_y shape: " + str(x_train.shape))
print ("test_set_x shape: " + str(x_test.shape))
         print ("test_set_y shape: " + str(y_test.shape))
         train_set_x shape: (189, 13)
train_set_y shape: (189,)
          test_set_x shape: (81, 13)
         test_set_y shape: (81,)
          Model
In [158_ # Decision Tree Classifier
          scores_dict = ()
In [151_ Catagory=['No....but i pray you get Heart Disease or at leaset Corona Virus Soon...','Yes you have Heart Disease....RIP in Advance']
In [155... from sklearn.tree import DecisionTreeClassifier
          dt=DecisionTreeClassifier()
         dt.fit(X_train,y_train)
Out[155]: - DecisionTreeClassifier
          DecisionTreeClassifier()
In [156_ print("Accuracy on training set: {:.3f}".format(dt.score(X_train, y_train)))
          print("Accuracy on test set: {:.3f}".format(dt.score(X_test, y_test)))
         Accuracy on training set: 1.000
         Accuracy on test set: 0.778
In [157_ prediction
1, 0, 1, 1, 0, 0, 1, 0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 0, 1, 1, 0, 0, 1, 1, 0, 1, 1, 0, 0, 0, 0, 0, dtypc=intG4)
In [158. X_DT=np.array([[63 ,1, 3,145,233,1,0,150,0,2.3,0,0,1]])
X_DT_prediction=dt.predict(X_DT)
In [159. X DT prediction[0]
Out[159]: 1
In [168_ print(Catagory[int(X_DT_prediction[8])])
         Yes you have Heart Disease....RIP in Advance
         Feature Importance in Decision Trees
```

```
in [ini print("Feature importances:\n()".format(dt.feature_importances_))
          Feature Importances:
          [8.08148922 0.03287338 0.07928353 0.06957237 0.10489245 0.
8.02144372 0.08531475 0.03652597 0.07047152 0. 0.10448896
           8.34272413]
in [182] def plot feature importances diabetes(model):
              plt.figure(figsize=(8,6))
              n_features = i3
plt.barh(range(n_features), model.feature_importances_, align='center')
              plt.yticks(np.arange(n_features), X)
plt.xlabel("Feature importance")
plt.ylabel("Feature")
          plt.ylim(-1, n_features)
plot_feature_importances_diabetes(dt)
          plt.savefig('feature_importance')
          ValueError
                                                    Traceback (most recent call last)
          Cell In [162], line 9
                   plt.ylahel("Feature")
plt.ylim(-i, n_features)
          ----> 9 plot_feature_importances_diabetes
18 plt.savefig('feature_importance')
          Cell in [182], line 5, in plot feature importances diameter(model)
3 n_features = 13
                 4 plt.barh(range(n_features), model feature_importances_, align='center')
           5 plt yticks(np arange(n_features), x)
6 plt.xlabel("Feature importance")
                7 plt.ylabel("Feature")
          File -\AppBata\Local\Programs\Python\Python318\lib\site-packages\matplotlib\pyplot.py:1887, in ytlocal(ticks, labels, minor, **kwargs)
                          1_internal_update(iwargs)
             1887 labels = ax.set_yticklabels(labels, minor-minor, "kwargs)
1889 return locs, labels
          -> 1887
          File ~\App@ata\Local\Programs\Python\Python3i@\lib\site-packages\matplotlib\axis.py:1968, in Ariv._mvt_tirkLabels(self, labels, fontdict, minor, **Mwargs)
           1988 if fontdict is not None:
1987 kwargs.update(fontdict)
          -> 1968 return self.set ticklabels(labels, minor-minor, **kwargs)
          File -\AppBata\Local\Programs\Python\Python\Ib\site-packages\matplotlib\axis.py:1800, in All not fiction (self, ticklabels, minor, "*kwargs)
             1888 if isinstance(locator, wticker FixedLocator):
             1887 * Passing [] as a list of ticklabels is often used as a way to 1888 * remove all tick labels, so only error for > 0 ticklabels
                      if len(locator.locs) := len(ticklabels) and len(ticklabels) != 8:
                           raise ValumError(
"Yhe number of FixedLocator locations"
           -> 1890
             1891
                                f" ((len(locator.locs))), usually from a call to" set_ticks, does not match"
             1893
                      f" the number of ticklabels ((lon(ticklabels))).")
tickd = {loc: lab fer loc, lab in zip(locator.locs, ticklabels)}
             1895
                      func = functools.partial(self._format_with_dict, tickd)
          ValueError: The number of Fixediocator locations (13), usually from a call to set_ticks, does not match the number of ticklabels (270).
           12
```



KNN

