DAYANANDA SAGAR UNIVERSITY

KUDLU GATE, BANGALORE – 560068

Bachelor of Technology
in
COMPUTER SCIENCE AND ENGINEERING

Major Project Phase-Ⅱ Report

(Passion8)

By

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DAYANANDA SAGAR UNIVERSITY

(2021-2022)

School of Engineering

DAYANANDA SAGAR UNIVERSITY

School of Engineering
Department of Computer Science & Engineering

Kudlu Gate, Bangalore – 560068
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CERTIFICATE

This is to certify that the Phase-II project work titled **"PASSION8"** is carried out by **Paraag Mishra (ENG18CS0200), Parikshit Hiremath (ENG18CS0201), Rachit Potluri (ENG18CS0220)** bonafide students of Bachelor of Technology in Computer Science and Engineering at the School of Engineering, Dayananda Sagar University, Bangalore in partial fulfillment for the award of degree in Bachelor of Technology in Computer Science and Engineering, during the year **2021-2022**.

Dr. Gopal Sharma R Joshi	**Dr Girisha G S**	**Dr. A Srinivas**
Professor Dept. of CS&E, School of Engineering Dayananda Sagar University	Chairman CSE School of Engineering Dayananda Sagar University	Dean School of Engineering Dayananda Sagar University
Date:	Date:	Date:

Name of the Examiner **Signature of Examiner**

1.

2.

DECLARATION

We, **Paraag Mishra (ENG18CS0200), Parikshit Hiremath (ENG18CS0201), Rachit Potluri (ENG18CS0220)** are student's of the seventh semester B.Tech in **Computer Science and Engineering**, at School of Engineering, **Dayananda Sagar University**, hereby declare that the phase-II project titled **"Passion8"** has been carried out by us and submitted in partial fulfillment for the award of degree in **Bachelor of Technology in Computer Science and Engineering** during the academic year **2021-2022**.

Student **Signature**

Paraag Mishra:
ENG18CS0200 :
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Place : Bangalore
Date : 27th May 2022

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LIST OF ABBREVIATIONS

CSV	Comma Separated Values
JSON	Java Script Object Notation

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ABSTRACT

Not everyone has had the opportunity to pursue their dreams which they once dreamt since their childhood, many if not most of the people are not passionate about what they are currently doing. A survey shows that 75% of the working/studying population in India and more than 50% of the population of the world are not satisfied with their current field of work/education, most of these choices were due to parental/societal pressures or lack of options. So our aim is to give the general population another shot at their dreams so they can pursue their interests and thrive in the environment that they are passionate about. Providing a platform where we can help a user by suggesting a passion based on their interests and qualities can help them make a move towards a career that they can enjoy.

CHAPTER 1 INTRODUCTION

Our project, ‘Passion8’ deals with a huge amount of data. We have divided our project into 2 phases. Specifically the technical and non technical aspects of it

1.1.1 **Building the website:**

In this Phase we aim to tackle the non- technical aspects of our project, i.e. work on the website, social media developing the dataset generating surveys. Our Aim for this phase is to research about the field in every aspect, before we move on to developing the algorithm to determine the users Passion.

1.1.2 **Designing the Algorithm:**

As mentioned above, this phase would primarily consist of developing the algorithm. The algorithm would require a dataset to train and test the model. In this phase we will develop a dataset from scratch and also develop a program to train and test the model

1.1.3 **Market:**

Once we have developed the product we aim to market it, and put it to actual use because we believe it will help thousands of individuals find their true Passion

1.2 **SCOPE**

By the above survey we can see that students want to pursue their passion but are not able to because of various characteristics like Parental Pressure, Societal Pressure, Lack of options etc. With Passion8 we aim to help all of these individuals pursue their true passion. Of course this project has a social impact by imposing the hunt of career discovery and understanding which if implemented successfully will procure to the growth of our country.

Every individual chases for stability, so accordingly if an individual does not get that push required to acquire the audacity and courage to pursue his/her passion that individual will never go ahead and pursue his/her passion because as per the societal and conventional norms stability is given more preference. Henceforth, we as a team have dedicated ourselves to give that push required and encourage people to truly hunt and pursue their passion.

CHAPTER 2 PROBLEM DEFINITION

As mentioned above, more than half of the known population are not pursuing what they are truly passionate about and are choosing the path which is societally proven successful and risk free. An individual will thrive if they love what they do, both personally and professionally. The career of a working professional is long and hard, if a person spends around 40 years not liking what he/she does, more often than not it takes a toll on one's mental health.

We have specifically designed Passion8 to help students identify their passion and we are going to provide them with reliable sources to pursue it. Passion for some students is very difficult to identify, many students will be baffled concerning their career and their passion, which we believe is the most salient decision concerning a student's life. This decision which the student has made will most probably stick to the student's entire life. Consequently, such an important decision should be looked through quite thoroughly which envisions a student's career.

To begin with, we will be formulating a google form and circulate the form to the students from different backgrounds which will help us discover their passions, and accordingly, concerning each student's passion, we will organize an insightful speaker with regards to the particular domain which the student is passionate about. This will encourage the student to proceed with his/her passion, which he/she will be rendered with profound and relevant information concerning their passion by the speaker which will be organized by us.

Since, passion is such a widespread area we have taken 2 different approaches to it, the first being organising events for students who are interested in a particular field. For instance, gaming and computer design, photography etc. The second is designing a machine learning algorithm which will be capable of predicting what the user is passionate about. Having this option in the website will not only make it stand out, but also help numerous people choose career options which they are passionate about.

CHAPTER 3 LITERATURE REVIEW

Sr No.	Name of the Project	Nme of the Author	Techniques Used
1.	Disease Prediction Algorithm	Y Deepthi	Big data analytics Machine learning algorithms Decision tree Random forest Healthcare Naive Bayes Python
2.	A study on predicting loan default based on the random forest algorithm	Lin zhua	Machine learning algorithms Decision tree Random forest
3.	Heart disease Prediction	Karan Bhanot	Knn (K Nearest Neighbor), Support Vector, Bayes Algorithms
4.	SURVEY ON DATA MINING MODELING ALGORITHM FOR PASSION PREDICTION	Kanagvalli Neelakandan	Big data analytics Machine learning algorithms Decision tree Random fores

Table 1

CHAPTER 4 PROJECT DESCRIPTION

4.1 Proposed Design

The design is based off a mix of an application along with a website. The end product in mind is to create a working machine learning algorithm application which can then be embedded into a website which acts as the main portal for the users to access. The website can provide the users with an attractive and easy to use user interface along with many other features and content such as blogs, events, ticketing systems, etc.

4.2 Assumptions and Dependencies

This can all be possible only if we are able to extract the required data from a large enough database to provide an accurate prediction for the user. We also need to assume that people would be interested enough in paying for for some guidance towards their passion which would be required to help us generate revenue to keep the website up.

CHAPTER 5 REQUIREMENTS

5.1 Functional Requirements

- Functional Website with multiple pages
- Python Application with GUI
- Machine Learning Algorithm to predict passion
- Provide user with their suitable passion
- Help user to pursue their passion

5.2 Non-Functional Requirements

- A working computer which requires a stable Internet connection.
- Domain name
- Web Hosting
- Business email address
- Logo design
- Images
- Text content
- WebDesigner
- Website security and firewall
- Website maintenance
- Python compiler
- Viable Dataset

CHAPTER 6 METHODOLOGY

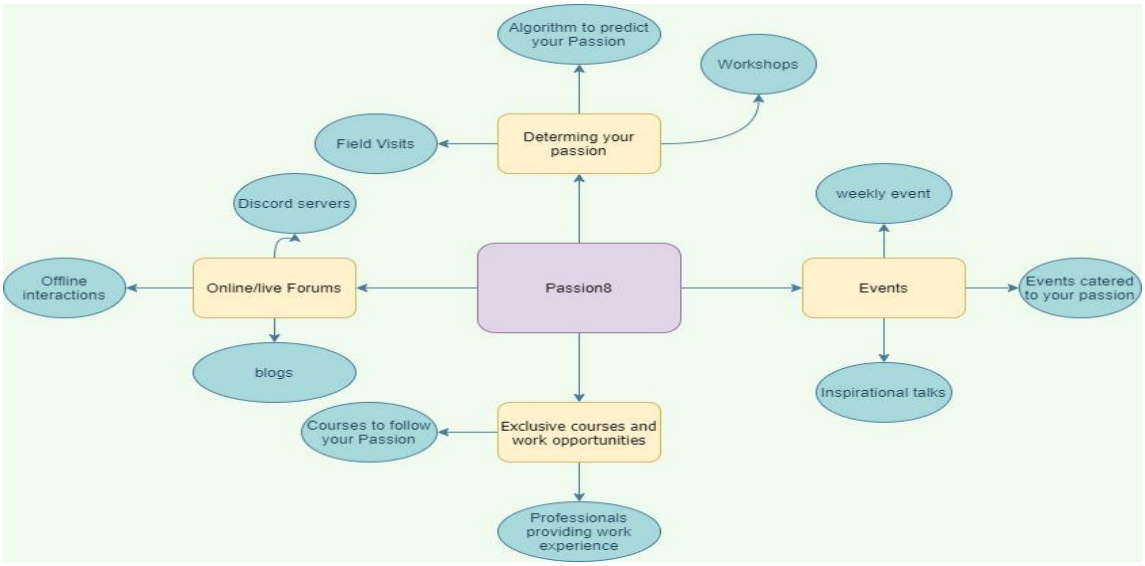


Fig 1

Passion 8 first determines an individual's particular passion with the help of machine learning algorithms through the questionnaire provided by us. When an individual's passion is determined, we strive to work to fulfill their particular passion by conducting workshops and events, which is specifically catered to every individual's passion, plus the events will be conducted every week so that they are updated and have every bit of information regarding their domain.Whilst the events are conducted through online forums like Discord server, which will be the most convenient, and further we provide the individual the total liberty to go ahead and interact with the event manager of their particular domain offline.When an individual gains significant insights and knowledge about his/her domain and wants to further pursue that as his/her career, we can help them with that as well, by providing them and training them with courses similar to their domain and help them seek work opportunities.

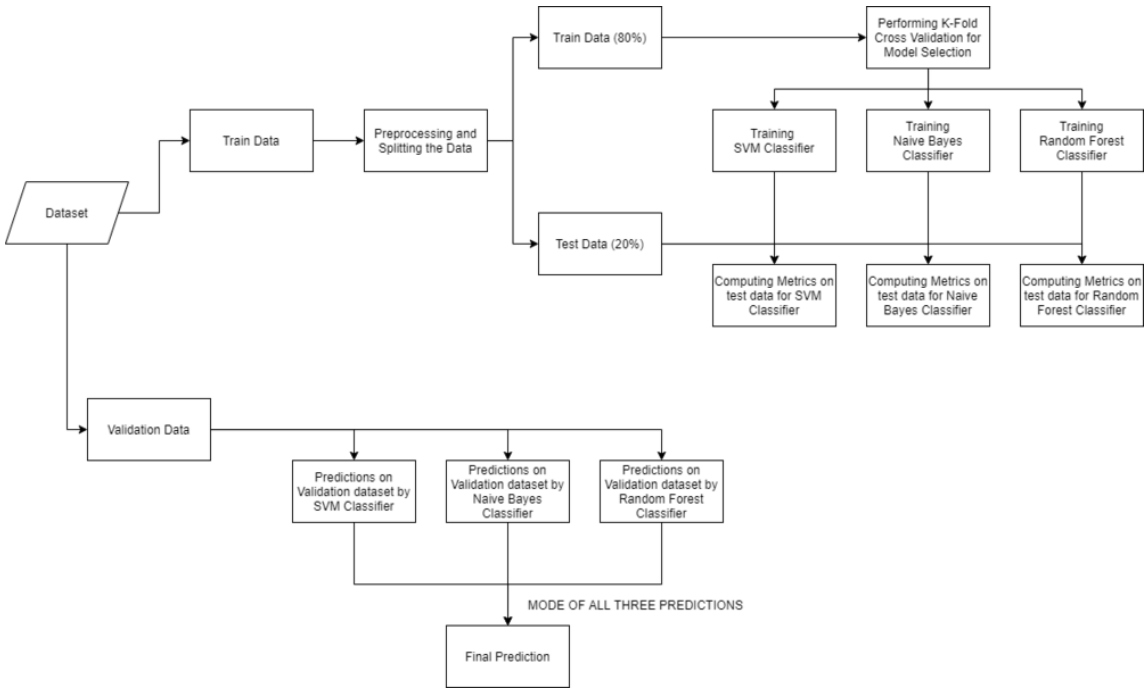


Fig 2

- **Gathering the Data:** Data preparation is the primary step for any machine learning problem. We will be using a dataset from Kaggle for this algorithm. This dataset consists of two CSV files, one for training and one for testing. There are a total of 133 columns in the dataset out of which 132 columns represent the symptoms and the last column is the prognosis.
- **Cleaning the Data:** Cleaning is the most important step in our project. The quality of our data determines the quality of our machine learning model. So it is always necessary to clean the data before feeding it to the model for training. In our dataset all the columns are numerical, the target column i.e. prognosis is a string type and is encoded to numerical form using a label encoder.

- **Model Building:** After gathering and cleaning the data, the data is ready and can be used to train a machine learning model. We will be using this cleaned data to train the Support Vector Classifier, Naive Bayes Classifier, and Random Forest Classifier. We will be using a confusion matrix to determine the quality of the models.
- **Inference:** After training the three models we will be predicting the Passion for the input charecteristics by combining the predictions of all three models. This makes our overall prediction more robust and accurate.

At last, we will be defining a function that takes symptoms separated by commas as input, predicts the disease based on the symptoms by using the trained models, and returns the predictions in a JSON format.

CHAPTER 7 EXPERIMENTATION

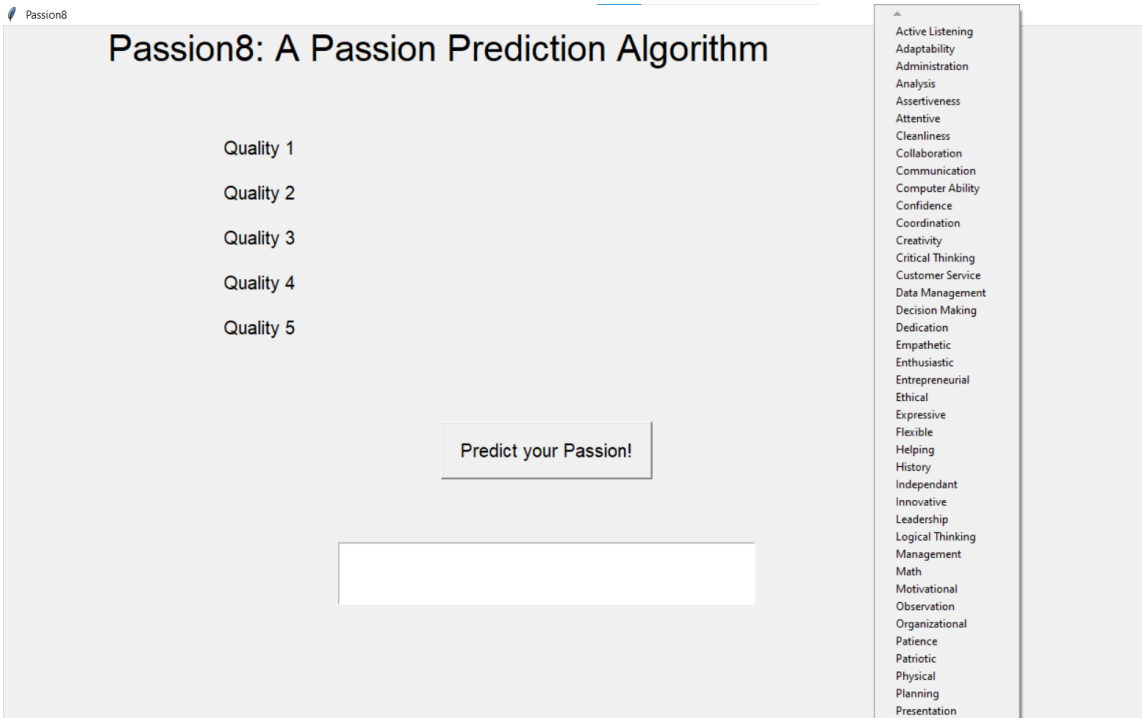


Fig 3

The algorithm first asks the user for his/her qualities. As you can see in the image above the user fills up the qualities cohering to his/ her passion. The qualities shown in the image above have been taken from the dataset our team has developed. The Dataset consists of about 60 Passion that are widespread over a variety of qualities.

Based on the input of the user, the algorithm (Naives Bayes Algorithm) predicts an output i.e. a passion for the user.

To make this algorithm extremely accurate we will run it through various other algorithms as well and find the accuracy score accordingly, hence giving us the desired yet accurate output.

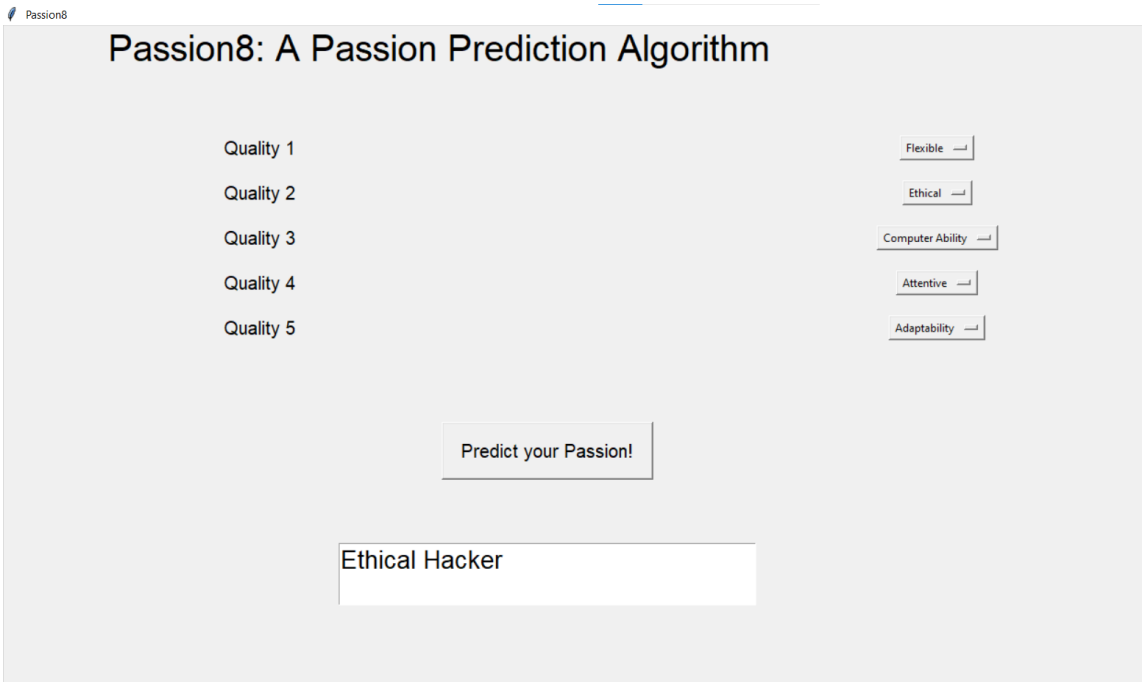


Fig 4

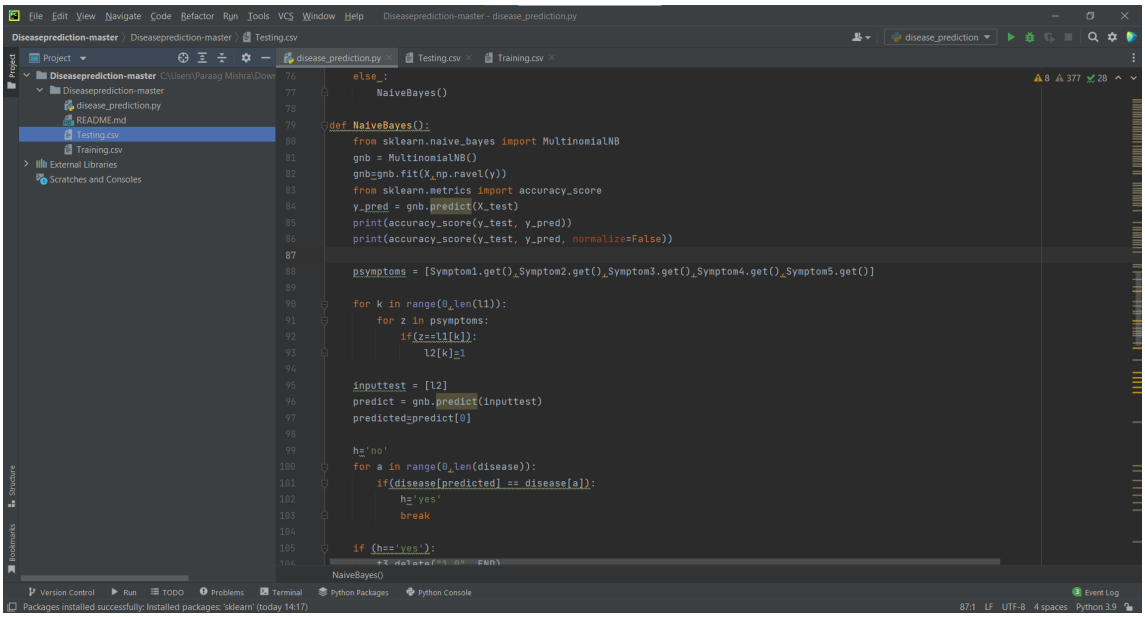
In the above image we can see that the user has given 5 qualities: Flexible, Ethical, Computer Ability, Attentive, Adaptibility.

The algorithm predicts, based on the input of the qualities of the user; the user would be passionate about Ethical Hacking.

Based on this output a recommendation system would be built which will recommend the user to take up courses, internships, events etc in that particular field.

CHAPTER 8 TESTING AND RESULTS

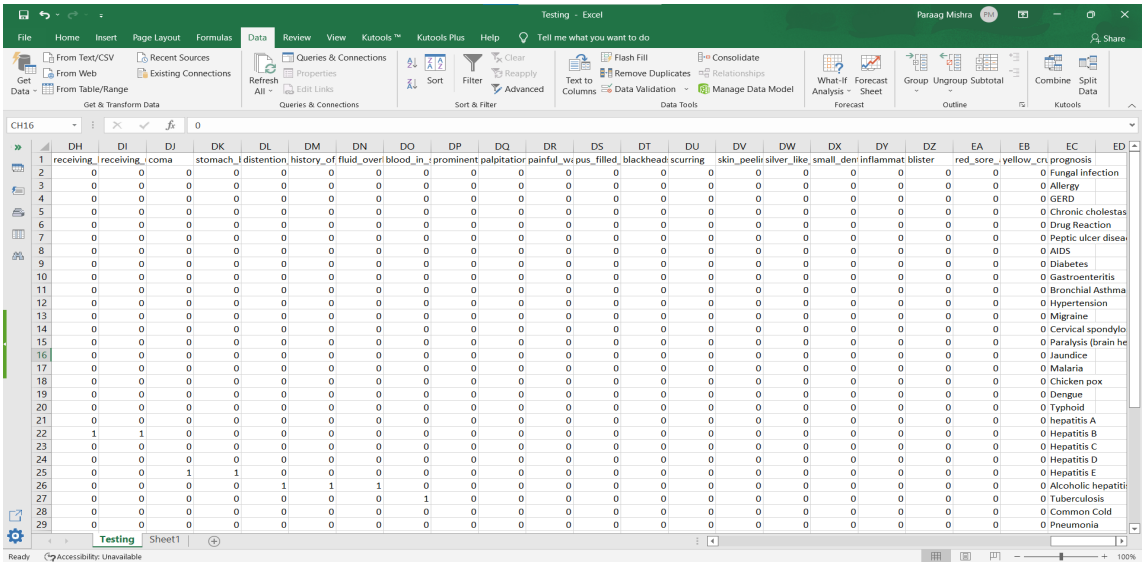
Code:



```
    else:
        NaiveBayes()

def NaiveBayes():
    from sklearn.naive_bayes import MultinomialNB
    gnb = MultinomialNB()
    gnb=gnb.fit(X,np.ravel(y))
    from sklearn.metrics import accuracy_score
    y_pred = gnb.predict(X_test)
    print(accuracy_score(y_test, y_pred))
    print(accuracy_score(y_test, y_pred, normalize=False))

    psymptoms = [Symptom1.get(),Symptom2.get(),Symptom3.get(),Symptom4.get(),Symptom5.get()]

    for k in range(0,len(l1)):
        for z in psymptoms:
            if(z==l1[k]):
                l2[k]=1

    inputtest = [l2]
    predict = gnb.predict(inputtest)
    predicted=predict[0]

    h='no'
    for a in range(0,len(disease)):
        if(disease[predicted] == disease[a]):
            h='yes'
            break

    if (h=='yes'):
```

Fig 5

Testing CSV:



	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED
1	receiving_	receiving_	coma	stomach_l	distention	history_of	fluid_over	blood_in_	prominent	palpitatio	painful_wa	pus_filled_	blackhead	scurring	skin_peeli	silver_like	small_den	inflammat	blister	red_sore_	yellow_cr	prognosis	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Fungal infection	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Allergy	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	GERD	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Chronic cholestas	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Drug Reaction	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Peptic ulcer disea	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AIDS	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Diabetes	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Gastroenteritis	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bronchial Asthma	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Hypertension	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Migraine	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Cervical spondylo	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Paralysis (brain he	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Jaundice	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Malaria	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Chicken pox	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Dengue	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Typhoid	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	hepatitis A	
22	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Hepatitis B	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Hepatitis C	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Hepatitis D	
25	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Hepatitis E	
26	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Alcoholic hepatiti	
27	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	Tuberculosis	
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Common Cold	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Pneumonia	

Fig 6

Training CSV:

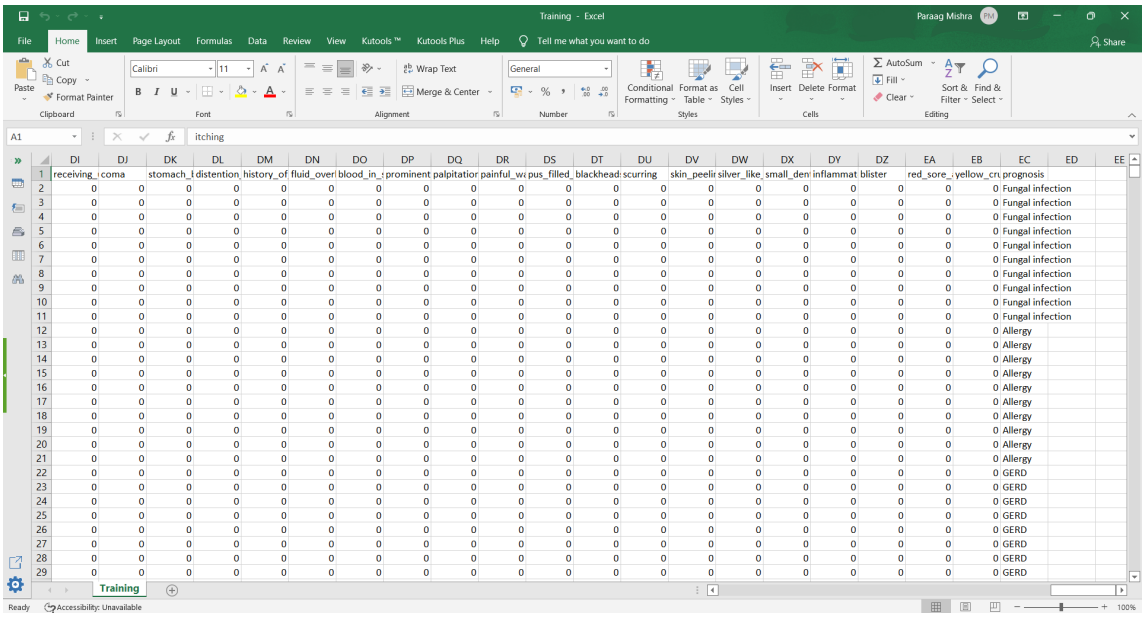


Fig 7

Output A:

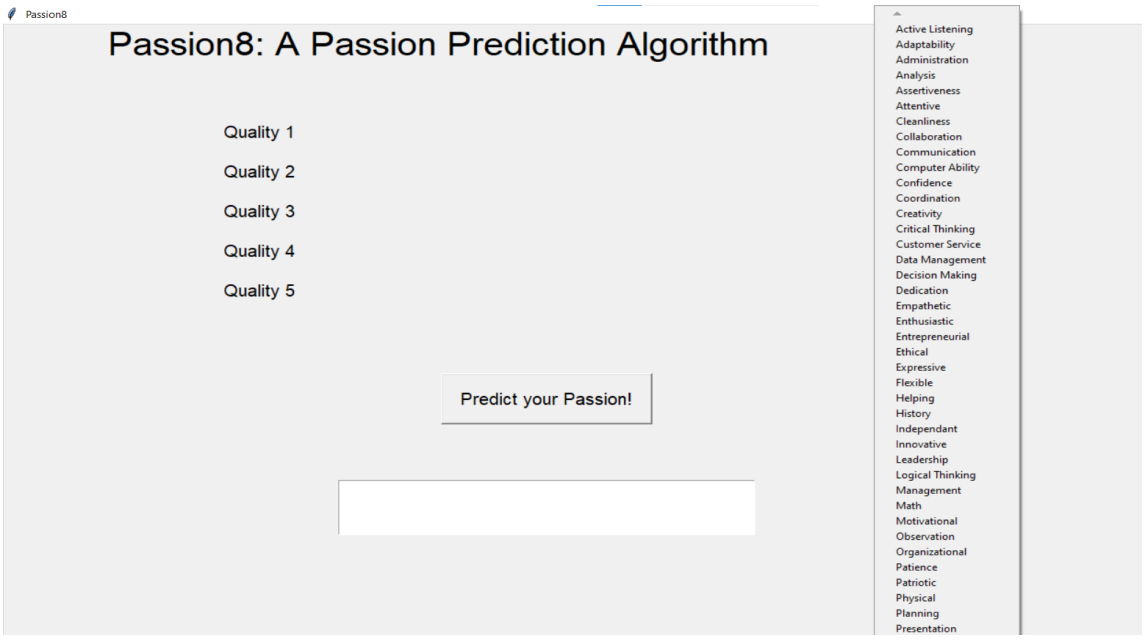


Fig 3

Output B:

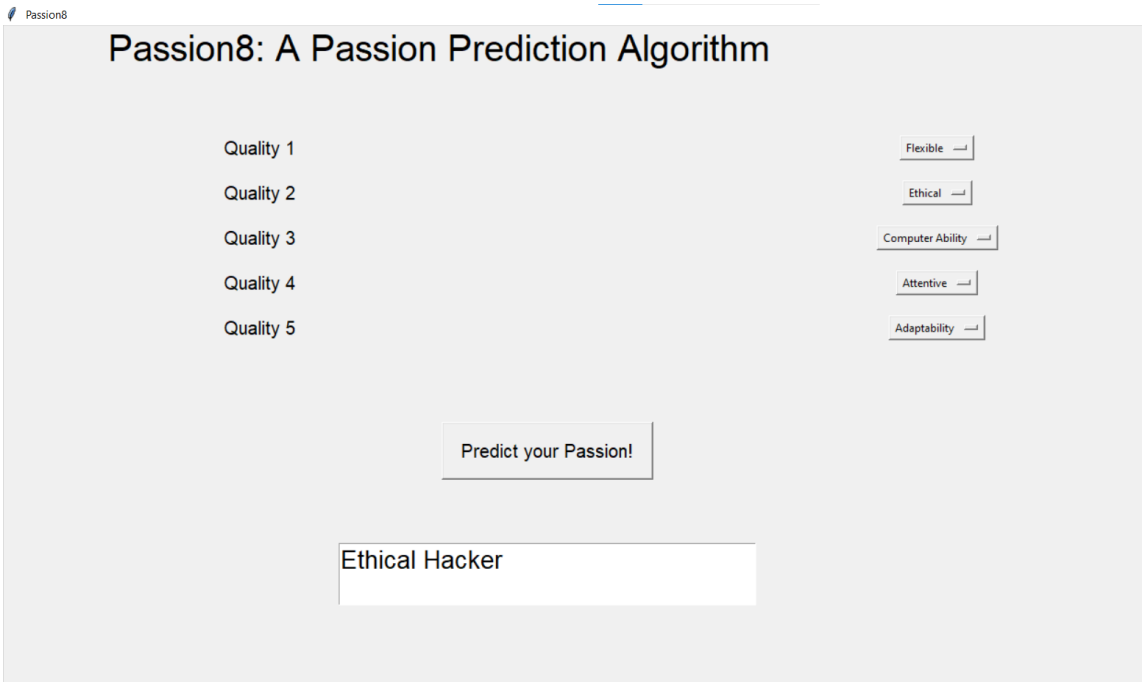


Fig 4

Website Images:

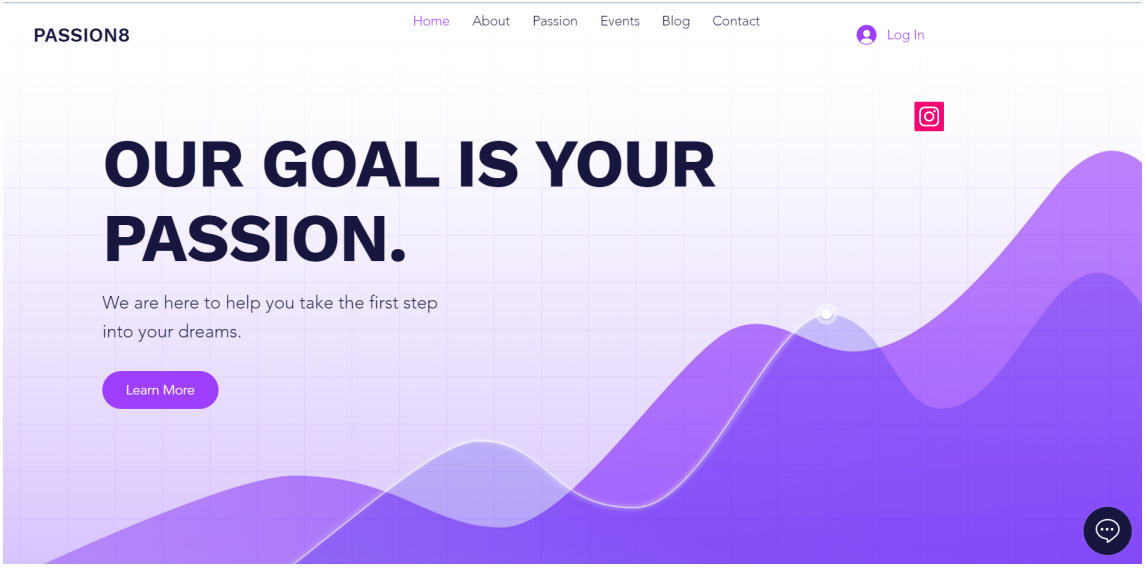


Fig 8

REFERENCES

1. Disease Prediction Using Machine Learning
2. Loan Prediction Project TermPaper
3. Predicting presence of Heart Diseases using Machine Learning

GITHUB LINK

https://github.com/paraag2000/passion8