

Configuration Manual

MSc Research Project
Artificial Intelligence

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MSc Project Submission Sheet
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Programme: Msc Artificial Intelligence **Year 2023**
Module: Msc Research Method
Lecturer: Rejwanul Haque
Submission Due Date: 31/01/24
Project Title: "Health Predictor: A Flask Web Application for Depression and Cardiovascular Disease Prediction"
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I hereby certify that the information contained in this (my submission) is information pertaining to research I conducted for this project. All information other than my own contribution will be fully referenced and listed in the relevant bibliography section at the rear of the project.

ALL internet material must be referenced in the bibliography section. Students are required to use the Referencing Standard specified in the report template. To use other author's written or electronic work is illegal (plagiarism) and may result in disciplinary action.

Signature: Vamshi Goud Gouni
31-01-2024

Date:

PLEASE READ THE FOLLOWING INSTRUCTIONS AND CHECKLIST

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Attach a Moodle submission receipt of the online project submission, to each project (including multiple copies).	☐
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Assignments that are submitted to the Programme Coordinator Office must be placed into the assignment box located outside the office.

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Configuration Manual

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1. Introduction

This Configuration manual provides detailed Information about my project's operation as well as what must be installed to run the code. In Order to achieve the same results, follow all instruction.

2. Specification

Processor	Intel Core i5x64
Ram	8GB
Disk Storage	1 GB Approx
Operating system	Windows 11
Programming Language	Python
Web application	Google Chrome

Here, we will discuss the software tools and some libraries required for this model. We will use python as main language for this model and tool used for python is pycharm, there are some Important libraries required for this model to run.

Pandas

NumPy

Matplotlib

Sklearn

Seaborn

Pickles

Flask

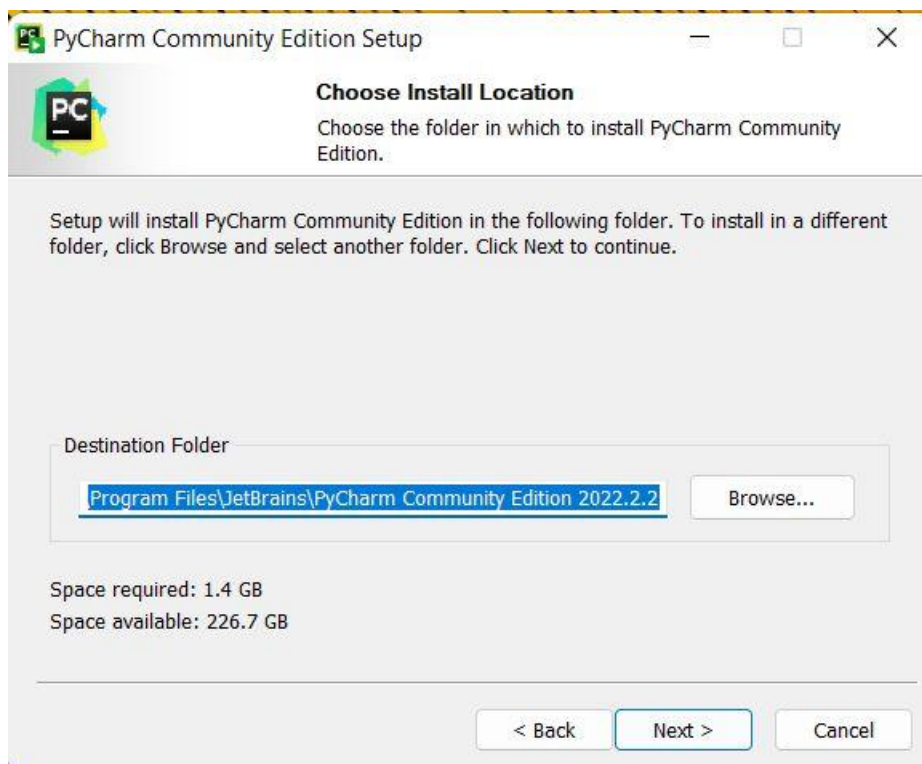
3. Setup For Software's

Here, We have to Install Pycharm first in Pycharm anyone can write python code and to install it we have to download Pycharm Community edition.

Once you download we have to follow Basic steps to install it



Click on the next then setup path to it and follow basic steps for installing it



After Installing the Pycharm, we will see steps required for machine learning

4. Data Source

For my project I have used two data-sets and links are below:

[Cardiovascular Disease dataset \(kaggle.com\)](#)

[depression \(kaggle.com\)](#)

5. Run the extension

Now after downloading data sets, Open depression.py file, install all packages and make sure data-set path in local system if you run depression.py file you will get accuracy, precision recall f1-score support results and a correction matrix and results of Standard Scaler ensemble model will get saved using pickle library. Below are pictures of results

Classification Report for Ensemble (KNN + Random Forest):

	precision	recall	f1-score	support
0	0.84	0.96	0.90	239
1	0.31	0.09	0.13	47
accuracy			0.82	286
macro avg	0.58	0.52	0.52	286
weighted avg	0.75	0.82	0.77	286

Accuracy for Ensemble (KNN + Random Forest): 0.8181818181818182

correction matrix



Here as you can see it has balanced classes and it has accuracy of 0.81 it is ready for implementation.

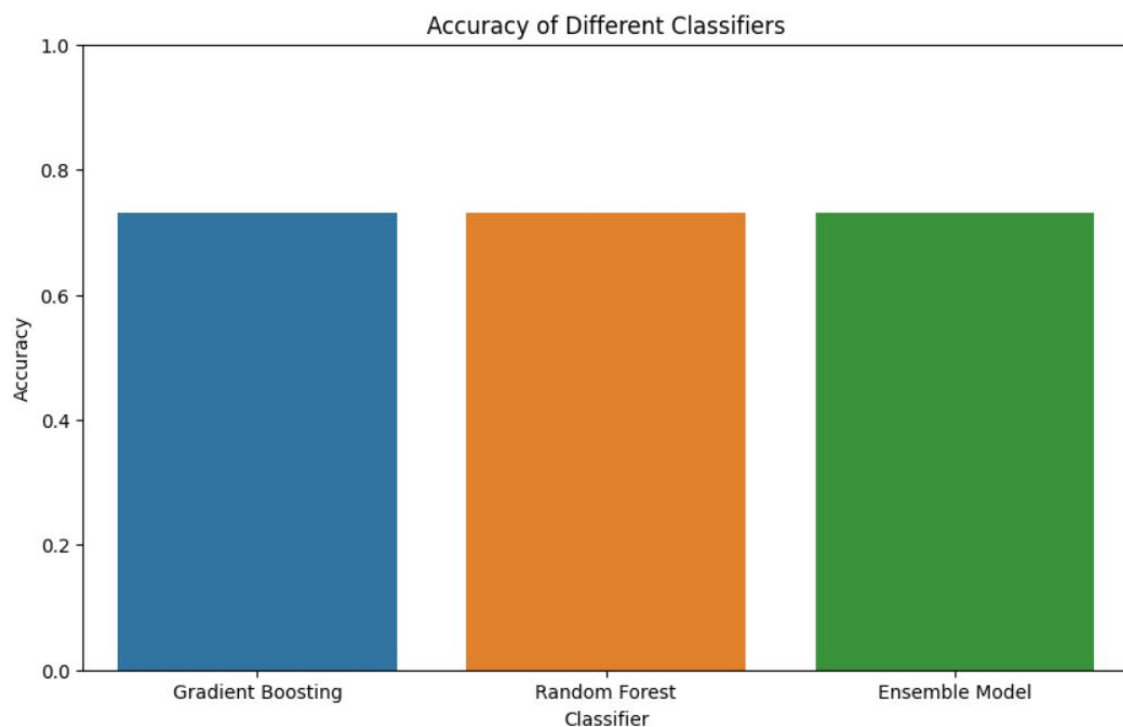
Now open Cardio File and run it, install all packages and make sure data-set path if you run Cardio.py file you will get accuracy,precision , recall, f1-score, support results and also correction matrix. Along with results it also stores results of Standard Scaler ensemble model using pickle library. Below are pictures of results

```
Ensemble Model (Voting Classifier)
Classification Report:
              precision    recall  f1-score   support

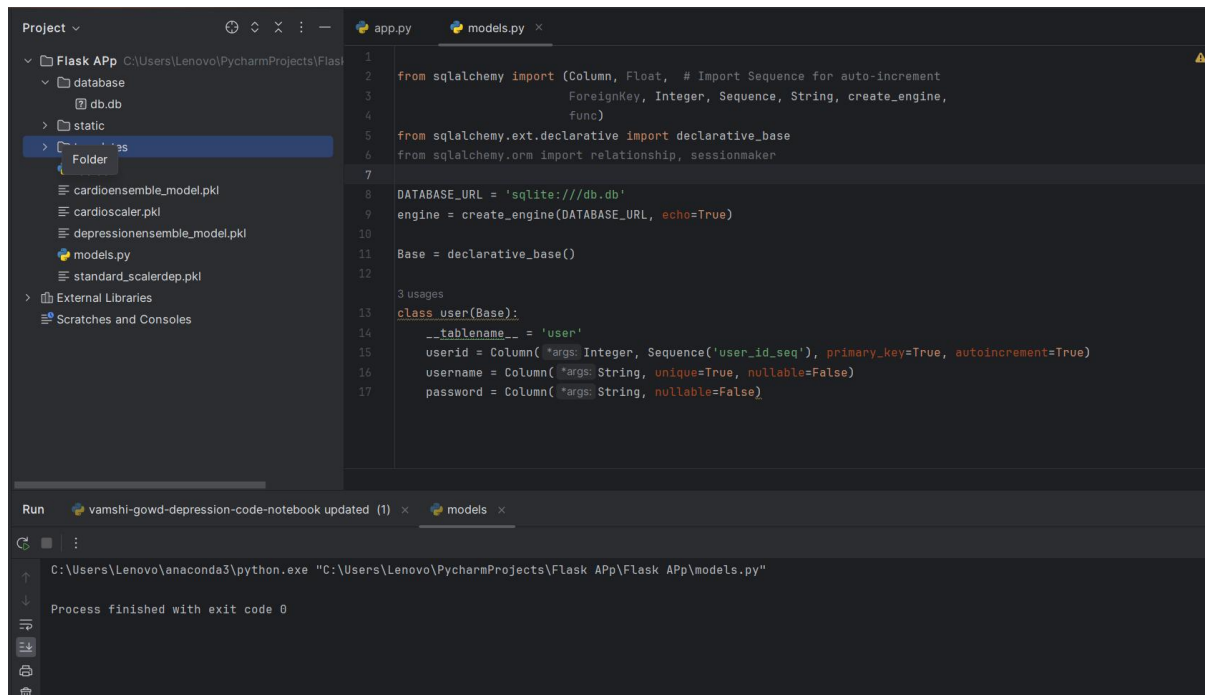
     0           0.72       0.78       0.75       6383
     1           0.75       0.68       0.71       6118

 accuracy          0.73          0.73          0.73      12501
 macro avg         0.73          0.73          0.73      12501
weighted avg         0.73          0.73          0.73      12501

Confusion Matrix:
[[4968 1415]
 [1949 4169]]
```

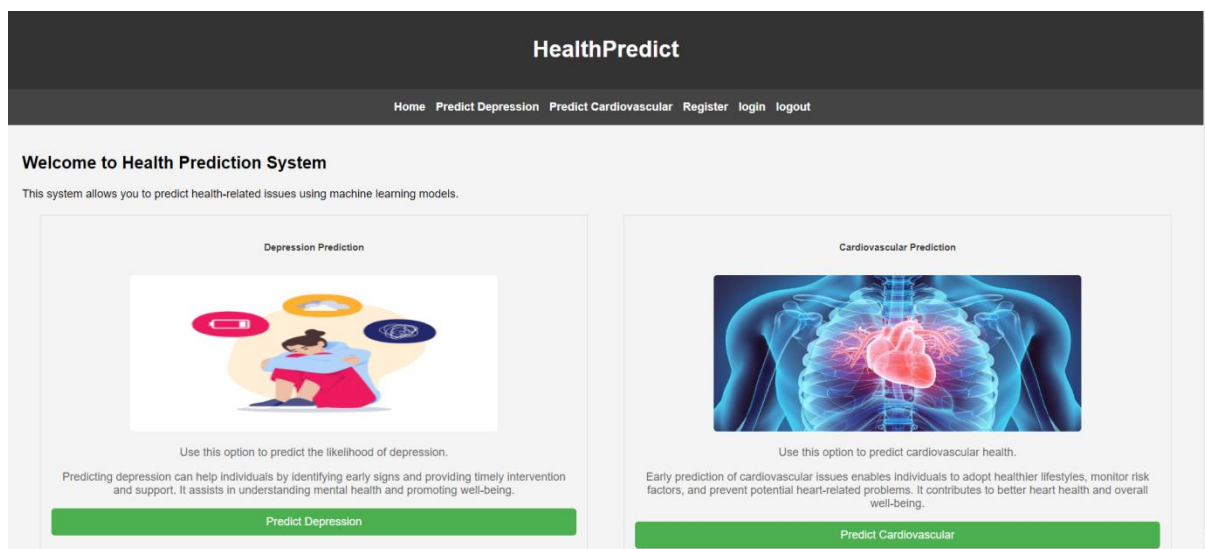


Now Open Model.py file,if you run it the new database will be created using mysql library and also it creates table for storing user login details.

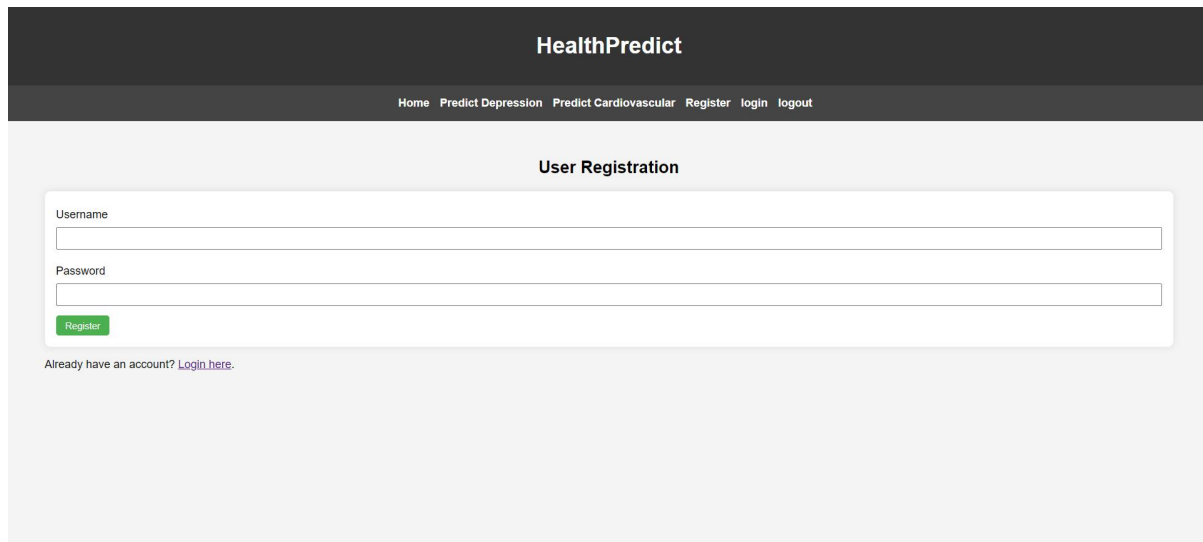


Through Pickle library 3pkl files gets created and now run app.py file it will generate web-page link which we can predict depression and cardiovaslur.

6. Flask Application

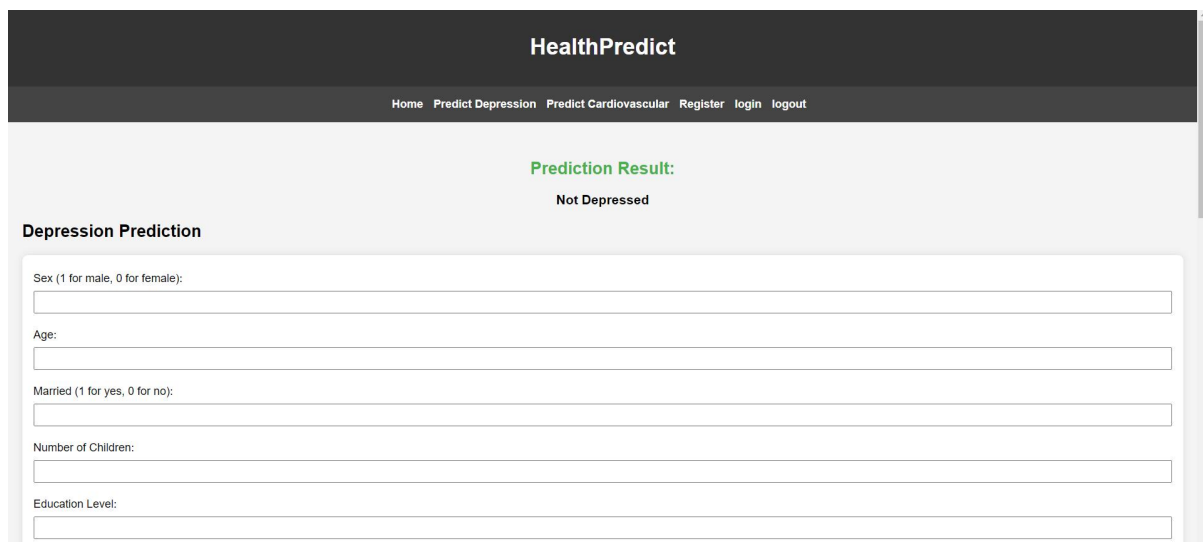


Home page looks like this
here you have two options chose one then you will go to login page ,if your not registered immediately register it here (below figure is about registration)



The image shows the 'User Registration' page of the HealthPredict application. At the top, there is a dark header with the 'HealthPredict' logo and a navigation bar containing links for 'Home', 'Predict Depression', 'Predict Cardiovascular', 'Register', 'login', and 'logout'. The main content area is titled 'User Registration' and contains a form with two input fields: 'Username' and 'Password'. Below the password field is a green 'Register' button. A link for users who already have an account, 'Login here', is located below the form.

Then after you login, you will find information that needed to be filled then you will see results



The image displays the 'Prediction Result' page for 'Depression Prediction' in the HealthPredict application. The header is identical to the registration page. The main heading is 'Prediction Result:' in green, followed by the result 'Not Depressed'. Below this, the section is titled 'Depression Prediction'. A form contains several input fields for demographic data: 'Sex (1 for male, 0 for female):', 'Age:', 'Married (1 for yes, 0 for no):', 'Number of Children:', and 'Education Level:'. Each field has a corresponding text input box.

Above picture shows depression is predicted or not and below picture shows cardiovascular Prediction

HealthPredict

[Home](#) [Predict Depression](#) [Predict Cardiovascular](#) [Register](#) [login](#) [logout](#)

Prediction Result:

Positive

Cardiovascular Prediction

Age in Number of Days:

Gender (1 for female, 2 for male):

Height:

Weight:

Systolic Blood Pressure (ap_hi):

7. References

Pycharm community available at [Download PyCharm: Python IDE for Professional Developers by JetBrains.](#)