PROJECT ON :- MACHINE LEARNING

TOPIC :- HEART DISEASE PREDICTION SYSTEM

- NAME:- HARSH KUMAR BHARTI
- BRANCH:- INFORMATION TECHNOLOGY
- PROJECT CLOUD:- https://www.harshbenevolence.com

Heart Disease Prediction System

- According to recent survey by WHO (World health organization) 17.9 million people die each year because of heart related diseases and it is increasing rapidly.

- With the increasing population and disease, it is become a challenge to diagnosing disease and providing the appropriate treatment at the right time.

- But there is a light of hope that recent advances in technology have accelerated the public health sector by developing advanced functional biomedical solutions.

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Heart Disease Prediction System

- This paper aims at analysing the various data mining techniques Random Forest Classification, Decision tree and Kneighbors classifier by using a qualified dataset for Heart disease prediction which is consist of various attributes like gender, age, chest pain type, blood pressure, blood sugar etc.

- The research includes finding the co-relations between the various attributes of the dataset by utilising the standard data mining techniques and using the attributes suitably to predict the chances of a heart disease.

- These machine learning techniques take less time for the prediction of the disease with more accuracy which will reduce the dispose of valuable lives all over the world.

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Progress Report

24th April, 2021

Heart Disease Prediction System

According to recent survey by WHO (World health organization) 17.9 million people die each year because of heart related diseases and it is increasing rapidly. With the increasing population and disease, it is become a challenge to diagnosing disease and providing the appropriate treatment at the right time. But there is a light of hope that recent advances in technology have accelerated the public health sector by developing advanced functional biomedical solutions. This paper aims at analyzing the various data mining techniques namely Naive Bayes, Random Forest Classification, Decision tree and Support Vector Machine by using a qualified dataset for Heart disease prediction which is consist of various attributes like gender, age, chest pain type, blood pressure, blood sugar etc. The research includes finding the correlations between the various attributes of the dataset by utilizing the standard data mining techniques and hence using the attributes suitably to predict the chances of a heart disease. These machine learning techniques take less time for the prediction of the disease with more accuracy which will reduce the dispose of valuable lives all over the world.

Project Name: - Heart disease prediction system by using Machine learning

Project cloud: - https://harshbenevolence.wixsite.com/harshbenevolence

Database: - Kaggle (https://www.kaggle.com/ronitf/heart-disease-uci)

Description : -
This Progress report is for partial fulfilment of the requirements for the degree of Bachelor of Technology in Information Technology (2018-2022)

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Heart Disease Prediction System

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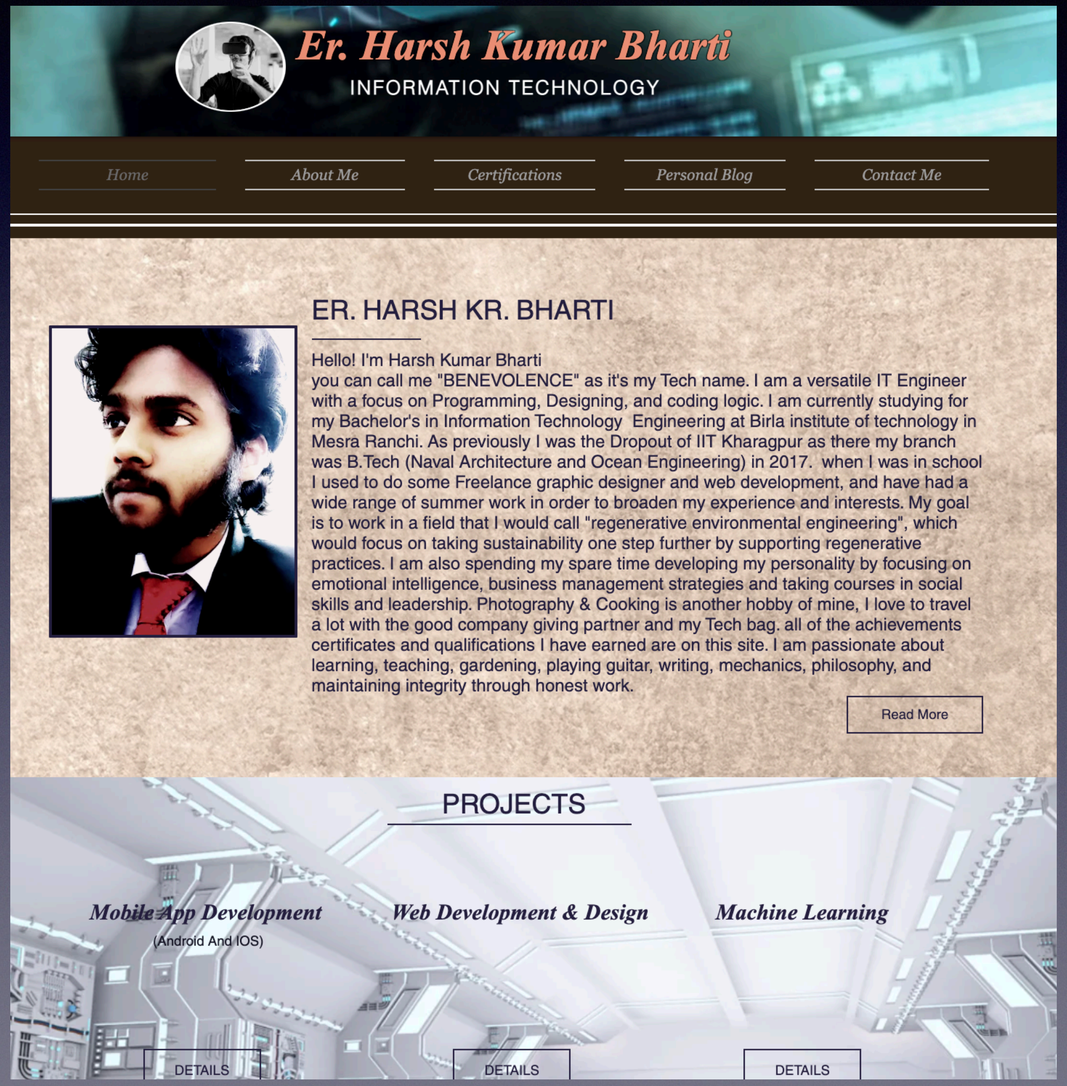
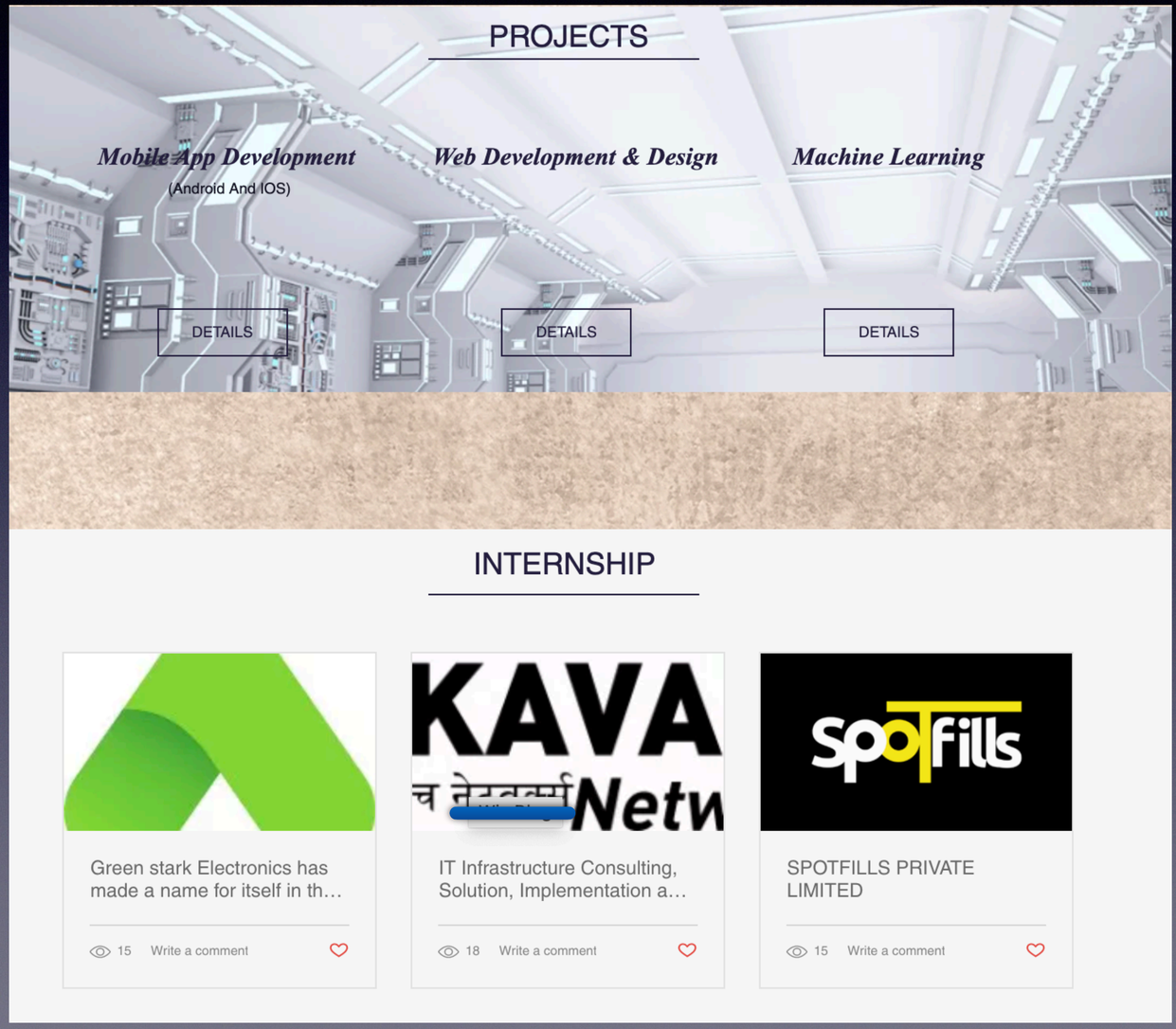
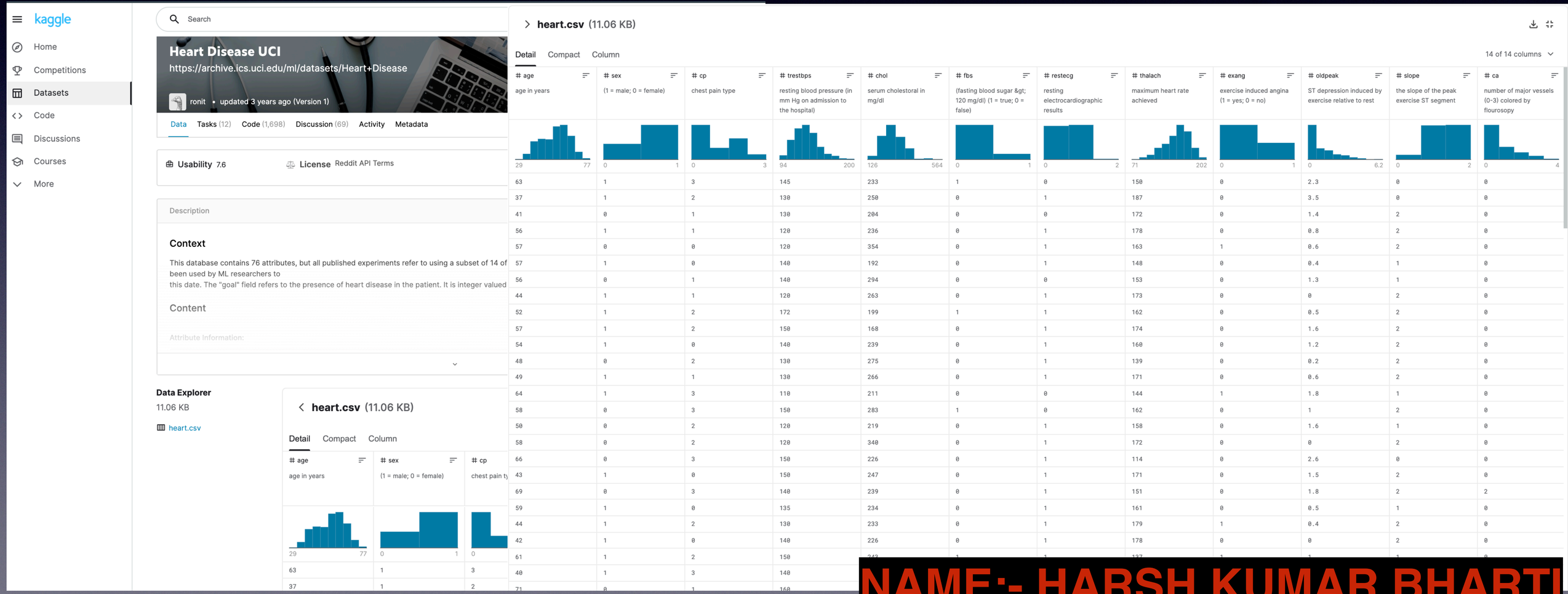




Heart Disease Prediction System

DATABASE:- https://www.kaggle.com/ronitf/heart-disease-uci



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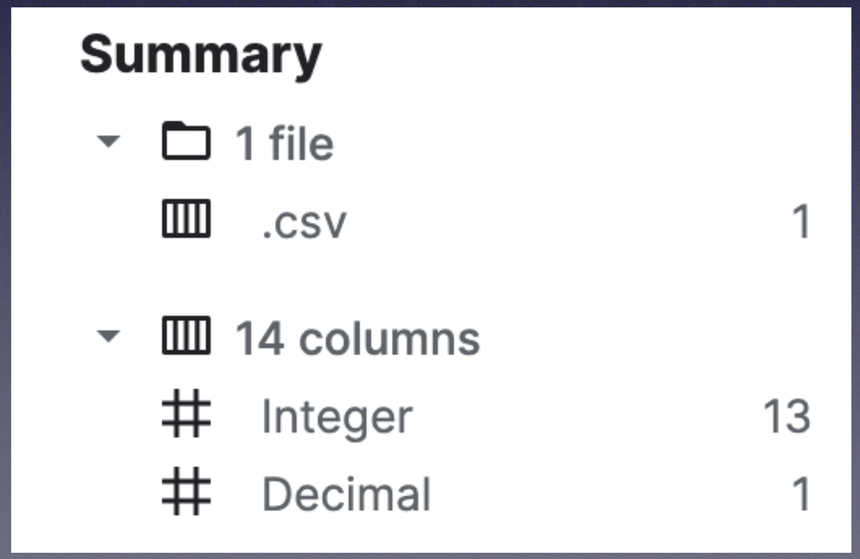
Heart Disease Prediction System

In this particular database is the only one that has been used by ML researchers to this date.

The "goal" field refers to the presence of heart disease in the patient.

Creators:-

Hungarian Institute of Cardiology. Budapest:- Andras Janosi, M.D.
University Hospital, Zurich, Switzerland:- William Steinbrunn, M.D.
University Hospital, Basel, Switzerland:- Matthias Pfisterer, M.D.
V.A. Medical Center, Long Beach :- Robert Detrano, M.D.



It is integer valued from 0 (no presence) to 4.

Heart Disease Prediction System

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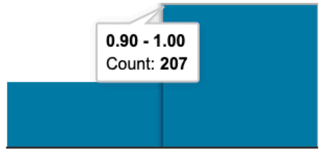
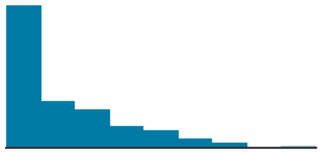
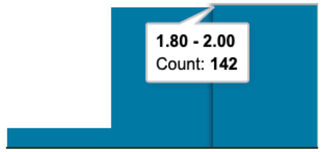
1. age
2. sex
3. chest pain type (4 values)
4. resting blood pressure
5. serum cholestoral in mg/dl
6. fasting blood sugar > 120 mg/dl
7. resting electrocardiographic results (values 0,1,2)
8. maximum heart rate achieved
9. exercise induced angina
10. oldpeak = ST depression induced by exercise relative to rest
11. the slope of the peak exercise ST segment
12. number of major vessels (0-3) colored by flourosopy
13. thal: 3 = normal; 6 = fixed defect; 7 = reversable defect

Heart Disease Prediction System

# age	# sex	# cp	# trestbps	# chol	# fbs	# restecg
age in years	(1 = male; 0 = female)	chest pain type	resting blood pressure (in mm Hg on admission to the hospital)	serum cholestoral in mg/dl	(fasting blood sugar > 120 mg/dl) (1 = true; 0 = false)	resting electrocardiographic results
 29 77	 0 1	 0 3	 94 200	 126 564	 0 1	 0 2

# thalach	# exang	# oldpeak	# slope	# ca	# thal	# target
maximum heart rate achieved	exercise induced angina (1 = yes; 0 = no)	ST depression induced by exercise relative to rest	the slope of the peak exercise ST segment	number of major vessels (0-3) colored by flourosopy	3 = normal; 6 = fixed defect; 7 = reversable defect	1 or 0
 71 202	 0 1	 0 6.2	 0 2	 0 4	 0 3	 0 1

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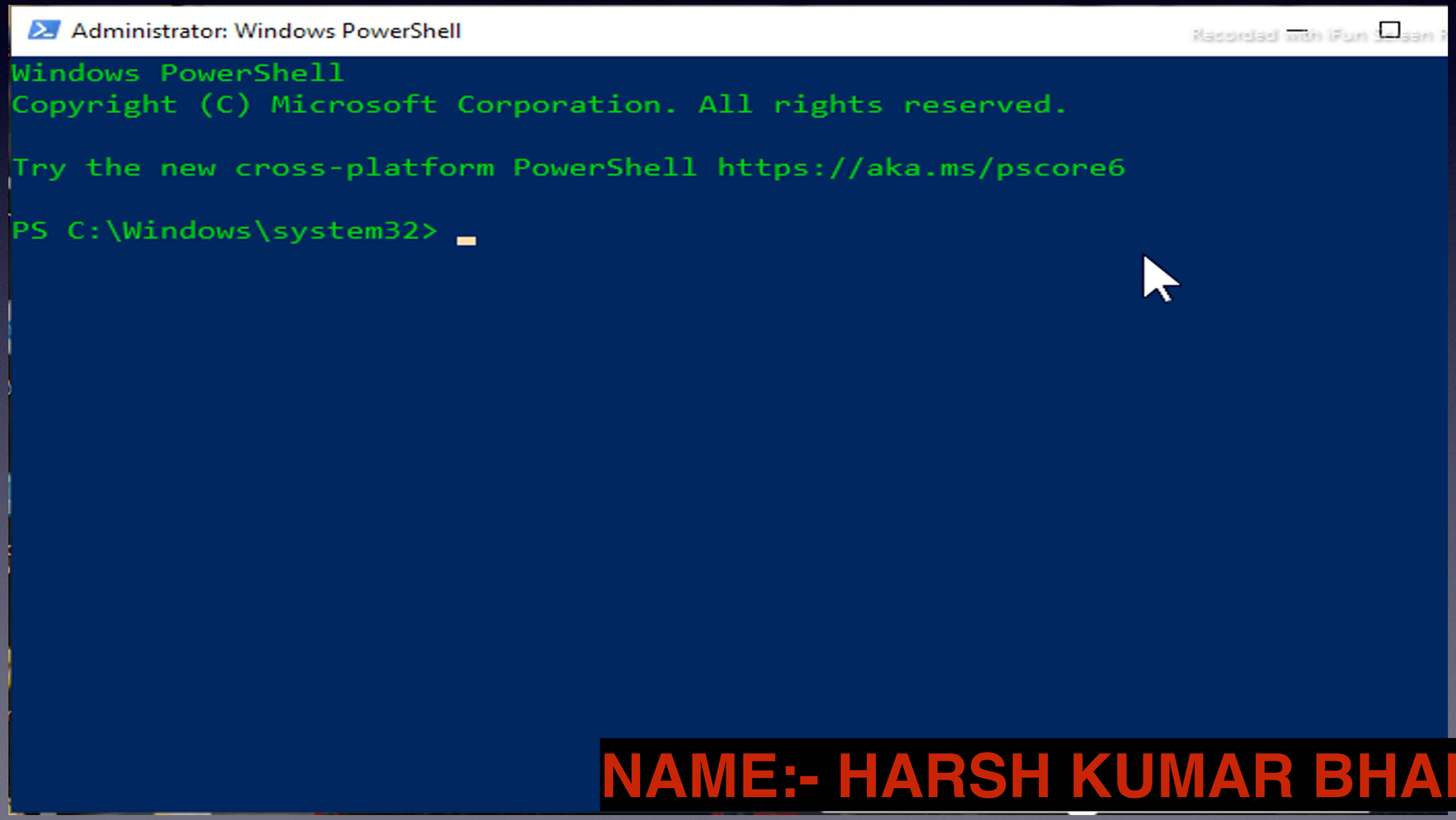
Heart Disease Prediction System

-> Making Folder and Settings Directory Path to Window Admin Powershell.
-> Installing All Current Packages of :-
(PYTHON + JUPYTER + MATPLOTLIB + NUMPY + PANDAS + SCIPY + SCIKIT LEARN).
-> Upgrade All Packages for **Execution**.

Folder



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Heart Disease Prediction System

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Home Page - Select or create a n | Heart Disease Prediction - Jupyte

localhost:8888/notebooks/Heart%20Disease%20Prediction.ipynb#

jupyter Heart Disease Prediction Last Checkpoint: Last Saturday at 7:04 PM (autosaved)

Logout

File Edit View Insert Cell Kernel Widgets Help

Trusted | Python 3

Run Code

In [3]:
```
import sklearn
import numpy as np
import pandas as pd
import plotly as plot
import plotly.express as px
import plotly.graph_objs as go

import cufflinks as cf
import matplotlib.pyplot as plt
import seaborn as sns
import os
from sklearn.metrics import accuracy_score
import plotly.offline as pyo
from plotly.offline import init_notebook_mode,plot,iplot
```

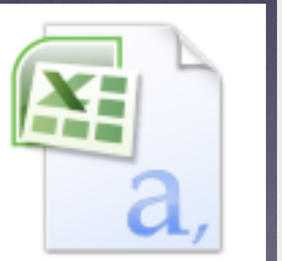
In [4]:
```
pyo.init_notebook_mode(connected=True)
cf.go_offline()
```

In [6]:
```
heart=pd.read_csv(r'C:\Python37\Projects\ALL ML-DL-DS Projects from Udemy and other Sources\Data_Science\ML_Casestudies-master\h
```

In [7]:
```
heart
```

Out[7]:

	age	sex	cp	trestbps	chol	fbs	restecg	thalach	exang	oldpeak	slope	ca	thal	target
0	63	1	3	145	233	1	0	150	0	2.3	0	0	1	1
1	37	1	2	130	250	0	1	187	0	3.5	0	0	2	1
2	41	0	1	130	204	0	0	172	0	1.4	2	0	2	1
3	56	1	1	120	236	0	1	178	0	0.8	2	0	2	1



Heart.csv

THANKYOU

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