

# **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.

**NAME:- HARSH KUMAR BHARTI**

# 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.

# 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)

**NAME:- HARSH KUMAR  
BHARTI.**

# Heart Disease Prediction System

PROJECT CLOUD:- <https://www.harshbenevolence.com>

The screenshot shows the homepage of a personal website. At the top, there is a circular profile picture of a man wearing a VR headset, with the text "Er. Harsh Kumar Bharti" and "INFORMATION TECHNOLOGY" below it. A navigation bar at the bottom of this section includes links for "Home", "About Me", "Certifications", "Personal Blog", and "Contact Me". Below the navigation bar is a large image of a man with dark hair and a beard, wearing a suit and tie. To the right of this image is a block of text about the author, followed by a "Read More" button. At the bottom of the page, there is another section titled "PROJECTS" with three categories: "Mobile App Development", "Web Development & Design", and "Machine Learning", each with a "DETAILS" button.

**Er. Harsh Kumar Bharti**  
INFORMATION TECHNOLOGY

[Home](#) [About Me](#) [Certifications](#) [Personal Blog](#) [Contact Me](#)

**ER. HARSH KR. BHARTI**

Hello! I'm Harsh Kumar Bharti you can call me "BENEVOLENCE" as it's my Tech name. I am a versatile IT Engineer with a focus on Programming, Designing, and coding logic. I am currently studying for my Bachelor's in Information Technology Engineering at Birla Institute of Technology in Mesra Ranchi. As previously I was the Dropout of IIT Kharagpur as there my branch was B.Tech (Naval Architecture and Ocean Engineering) in 2017. When I was in school I used to do some Freelance graphic designer and web development, and have had a wide range of summer work in order to broaden my experience and interests. My goal is to work in a field that I would call "regenerative environmental engineering", which would focus on taking sustainability one step further by supporting regenerative practices. I am also spending my spare time developing my personality by focusing on emotional intelligence, business management strategies and taking courses in social skills and leadership. Photography & Cooking is another hobby of mine, I love to travel a lot with the good company giving partner and my Tech bag. All of the achievements certificates and qualifications I have earned are on this site. I am passionate about learning, teaching, gardening, playing guitar, writing, mechanics, philosophy, and maintaining integrity through honest work.

[Read More](#)

**PROJECTS**

**Mobile App Development**  
(Android And IOS) [DETAILS](#)

**Web Development & Design** [DETAILS](#)

**Machine Learning** [DETAILS](#)

The screenshot shows the "PROJECTS" and "INTERNSHIP" sections of the website. The "PROJECTS" section features three cards: "Mobile App Development" (Android And IOS), "Web Development & Design", and "Machine Learning", each with a "DETAILS" button. The "INTERNSHIP" section features three cards: "Green stark Electronics" (with a green triangle logo), "KAVA च नेटवर्क Netw" (with a blue and black logo), and "SPOTFILLS PRIVATE LIMITED" (with a yellow and white logo). Each card includes a brief description, a comment count, and a "Write a comment" button.

**PROJECTS**

**Mobile App Development**  
(Android And IOS) [DETAILS](#)

**Web Development & Design** [DETAILS](#)

**Machine Learning** [DETAILS](#)

**PROJECTS**

**Mobile App Development**  
(Android And IOS)

**Web Development & Design**

**Machine Learning**

**INTERNSHIP**

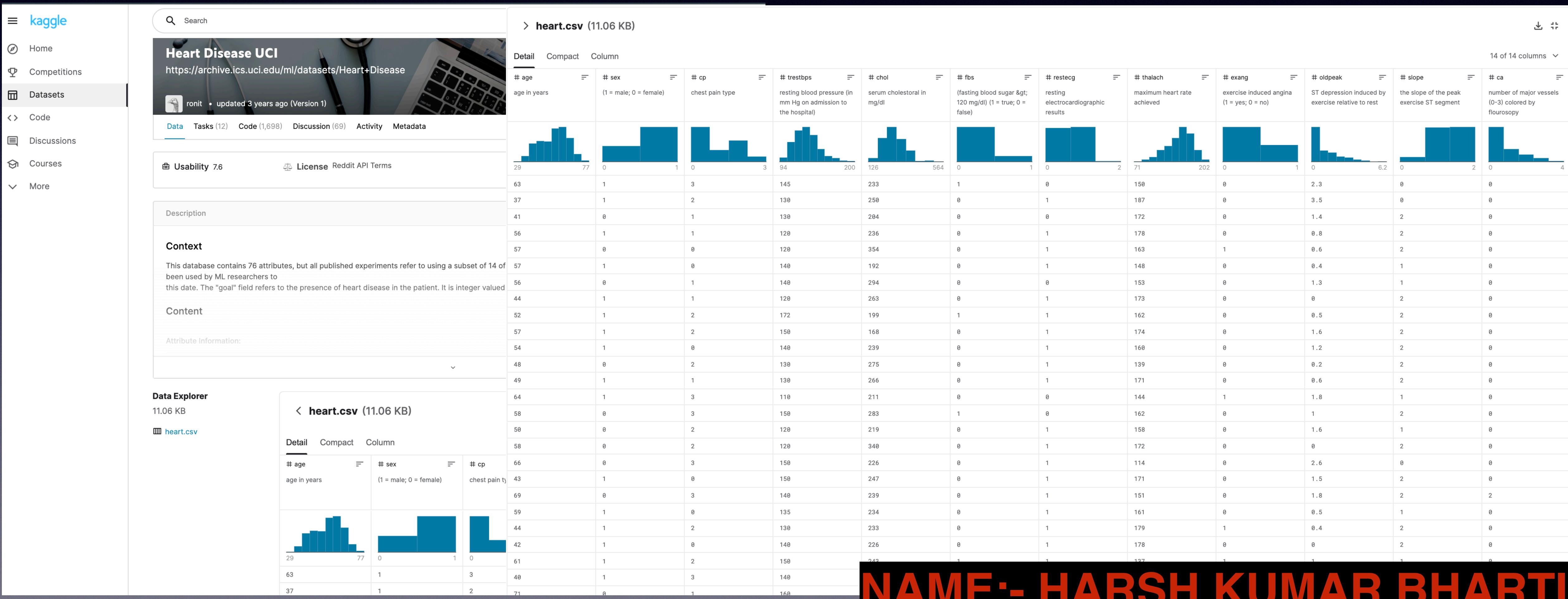
**Green stark Electronics** has made a name for itself in th... [15 Write a comment](#) [Heart](#)

**KAVA च नेटवर्क Netw** IT Infrastructure Consulting, Solution, Implementation a... [18 Write a comment](#) [Heart](#)

**SPOTFILLS PRIVATE LIMITED** [15 Write a comment](#) [Heart](#)

# 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.

## **Summary**

▼	📁 1 file	1
	📄 .csv	
▼	📊 14 columns	
	# Integer	13
	# Decimal	1

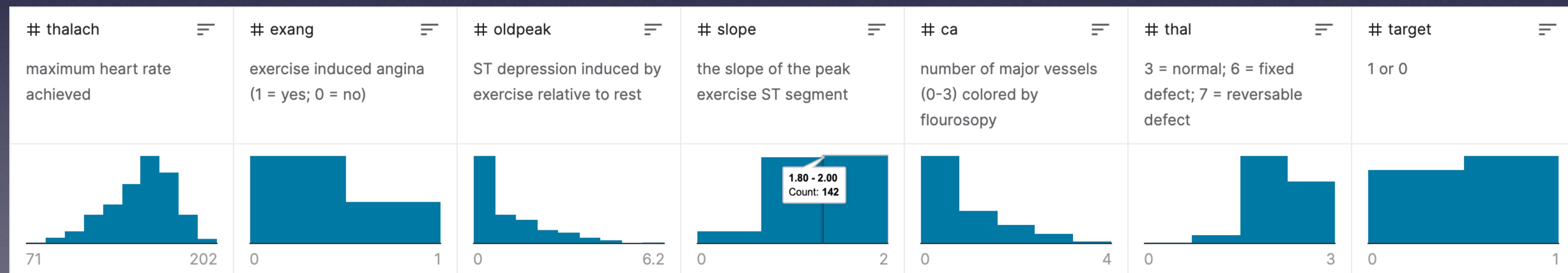
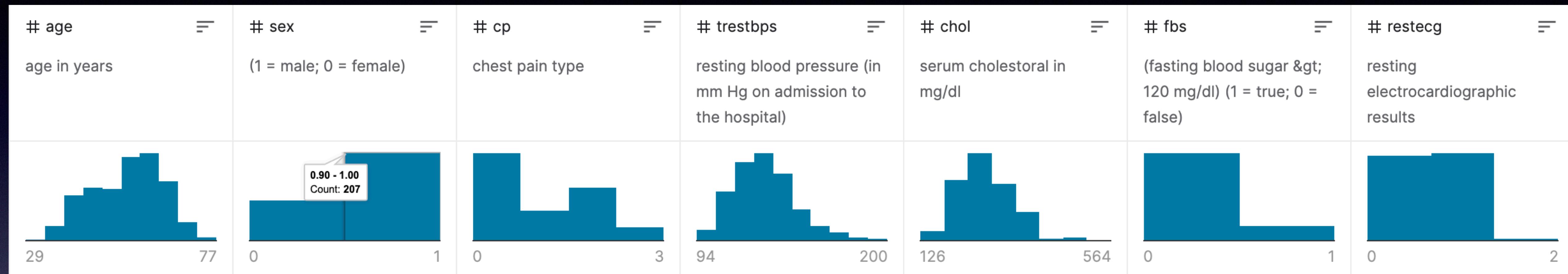
It is integer valued from 0 (no presence) to 4.

# Heart Disease Prediction System

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1. age
2. sex
3. chest pain type (4 values)
4. resting blood pressure
5. serum cholestorol 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



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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*

A screenshot of a Windows PowerShell window titled "Administrator: Windows PowerShell". The title bar includes the text "Recorded with Fun Screen". The window displays the following text:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

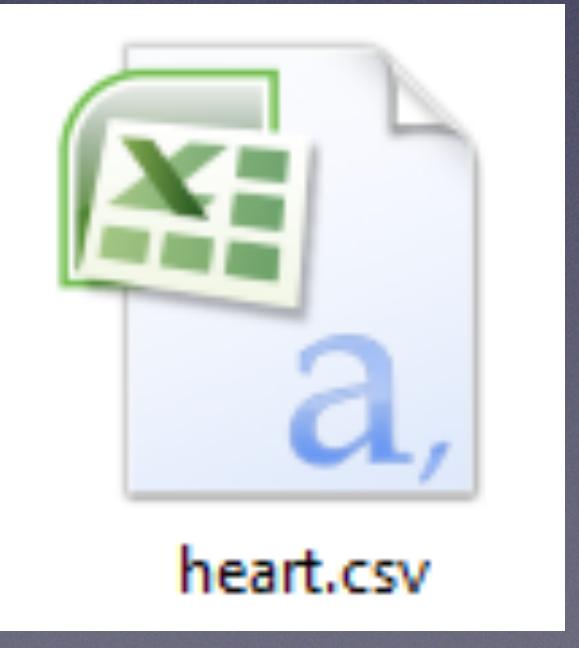
PS C:\Windows\system32>
```

A mouse cursor is visible on the right side of the window.

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# Heart Disease Prediction System

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heart.csv

Home Page - Select or create a new notebook × Heart Disease Prediction - Jupyter Notebook +  
localhost:8888/notebooks/Heart%20Disease%20Prediction.ipynb#

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

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3

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\heart.csv')
```

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	179	0	0.9	2	0	2	1

# THANKYOU

**NAME:- HARSH KUMAR BHARTI**