## Explanation of ML Model

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**Project link** **:** <http://rahulpatil35.pythonanywhere.com>

*The "****goal****" of this project is to find the presence of heart disease in the patient.*

## Logistic Regression

## Logistic regression is a supervised learning classification algorithm used to predict the probability of a target variable. The nature of target or dependent variable is dichotomous, which means there would be only two possible classes.

## *Mathematically, a logistic regression model predicts P(Y=1) as a function of X*

### **Features & Target**

Features list

* age
* sex
* chest pain type (4 values)
* resting blood pressure
* serum cholesterol in mg/dl
* fasting blood sugar > 120 mg/dl
* resting electrocardiographic results (values 0,1,2)
* maximum heart rate achieved
* exercise induced angina
* oldpeak = ST depression induced by exercise relative to rest
* the slope of the peak exercise ST segment
* number of major vessels (0-3) coloured by fluoroscopy
* thal (4 values)

Target list

* result (values 0,1 | 0: heart disease not present, 1: heart disease present)

*This is a definition list:*

**Features**

A feature is a measurable property of the object you’re trying to analyse. In datasets, features appear as columns.

**Target**

The target variable of a dataset is the feature of a dataset about which you want to gain a deeper understanding.

**Libraries & Packages**

*pandas, sci-kit learn, matplotlib, numpy, os, pickle, flask, flask\_mail, sqlite3*

**Validations**

*Validation is the process of checking whether the given input/product is up to the mark..*

* **Age** - 10 to 130
* **Blood Pressure** - 80 to 200
* **Cholesterol** - 100 to 600
* **Heart Rate** - 70 to 210
* **Oldpeak** - 0.0 to 6.0

**Future Scope**

1. Model can be made more accurate using more attributes and/or more amount of data
2. API of the project can be made which can be used directly by Third-Party Applications.
3. Separate Admin Panel and Dashboard for Medical Staff and Users can be implemented
4. Passwords can be *encrypted* before they are stored in Database.
5. Nearest Hospital Locations can be displayed using Geo-location and *Google Maps API*

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