A Project Report on

Predicting Life Expectancy using Machine Learning

Category: Machine Learning

Project Description:

Problem Description:

A typical Regression Machine Learning project leverages historical data to predict insights into the future. This problem statement is aimed at predicting Life Expectancy rate of a country given various features.

Life expectancy is a statistical measure of the average time a human being is expected to live, Life expectancy depends on various factors: Regional variations, Economic Circumstances, Sex Differences, Mental Illnesses, Physical Illnesses, Education, Year of their birth and other demographic factors. This problem statement provides a way to predict average life expectancy of people living in a country when various factors such as year, GDP, education, alcohol intake of people in the country, expenditure on healthcare system and some specific disease related deaths that happened in the country are given.

Project Requirement: Python, IBM Cloud, IBM Watson

Functional Requirement: Predicting the life expectancy rate of a country.

Technical Requirement: python, IBM clouds, IBM Watson

Hardware Requirements: Processor:- i3 or higher

Hard disk:- Min 20Gb pr more

Team Members: Pooja Korekar

Purpose:-

The purpose of the model is to predict average life expectancy of people living in a country when various factors such as year, GDP, education, alcohol intake of people in the country, expenditure on healthcare system and some specific disease related deaths that happened in the country are given.

# Literature Survey:-

Existing Problem:-

This problem statement is aimed at predicting Life Expectancy rate of a country given various features. This problem statement provides a way to predict average life expectancy of people living in a country when various factors such as year, GDP, education, alcohol intake of people in the country, expenditure on healthcare system and some specific disease related deaths that happened in the country are given.

Proposed Solution:-

The proposed solution for this problem is to predict life expectancy of particular country based on the given dataset. The dataset contain the various values such as year, GDP, education, alcohol intake of people in the country, expenditure on healthcare system and some specific disease related deaths that happened in the country, Regional variations, Economic Circumstances, Sex Differences, Mental Illnesses, Physical Illnesses, Education, Year of their birth and other demographic factors. By using this data we create a model for life expectancy prediction.

Theoretical Analysis:-

Block diagram:-
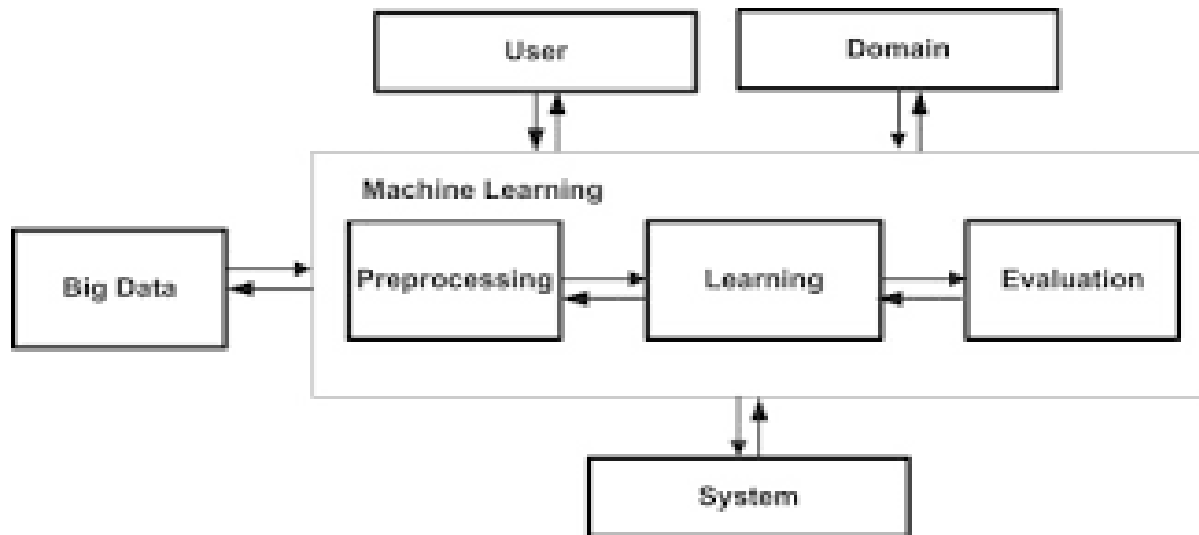
Hardware/Software Designing:-

Hardware Requirements: Processor:- i3 or higher

Hard disk:- Min 20Gb pr more

Software Requirements: Python, IBM Cloud, IBM Watson, Node-Red App.

Experimental Investigation:-

The life expectancy prediction model is created by using IBM Watson and IBM machine learning services. The model is build using notebook in which dataset is imported and some operations are performed in dataset after that the regression analysis is applied on model. And node red flow is also generated to predict the life expectancy.

Node Red flow:-
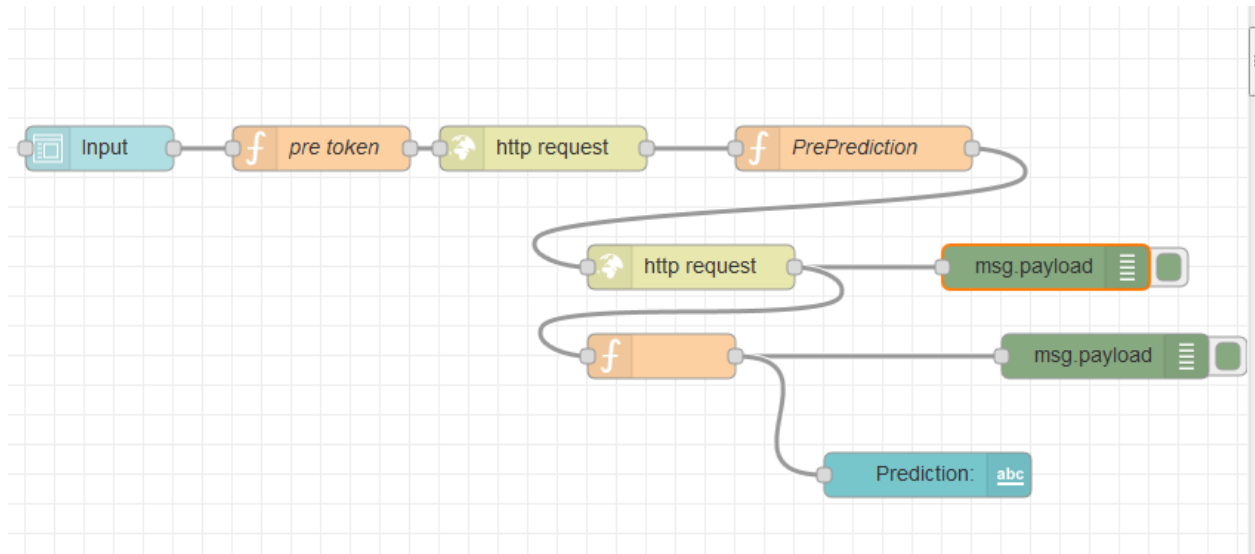
Results:-
User provides the input to the form and predicts the life expectancy.

Advantages:-
- This model can predict the life expectancy of people living in a country.
- It is beneficial for countries.

Disadvantages:
- Requires large amount of data.
- It should provide accurate input to provide accurate prediction.

Applications:
- Easy to predict and know life expectancy.

Conclusion:-

In this project we develop a model that predicts a life expectancy by using some factors in which the life expectancy is depends. To develop this project we use various IBM cloud services such as IBM Watson, OBM machine learning service, Nore-Red application.

Future Scope:-

For future enhancement to this project the accuracy can be increased. And many more functions that make it easy can be used in future.

Bibliography:-

- https://www.kaggle.com/kumarajarshi/life-expectancy-who
- https://www.ibm.com/cloud/get-started
- https://developer.ibm.com/tutorials/how-to-create-a-node-red-starter-application/