# PROJECT REPORT

# PREDICTING LIFE EXPECTANCY USING MACHINE LEARNING

VIDYA SREEKUMAR

# 1. INTRODUCTION

## 1.1 Overview

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 project 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.

## 1.2 Purpose

To predict life expectancy of different countries based on various factors

# 2. LITERATURE SURVEY

## 2.1 Existing problem

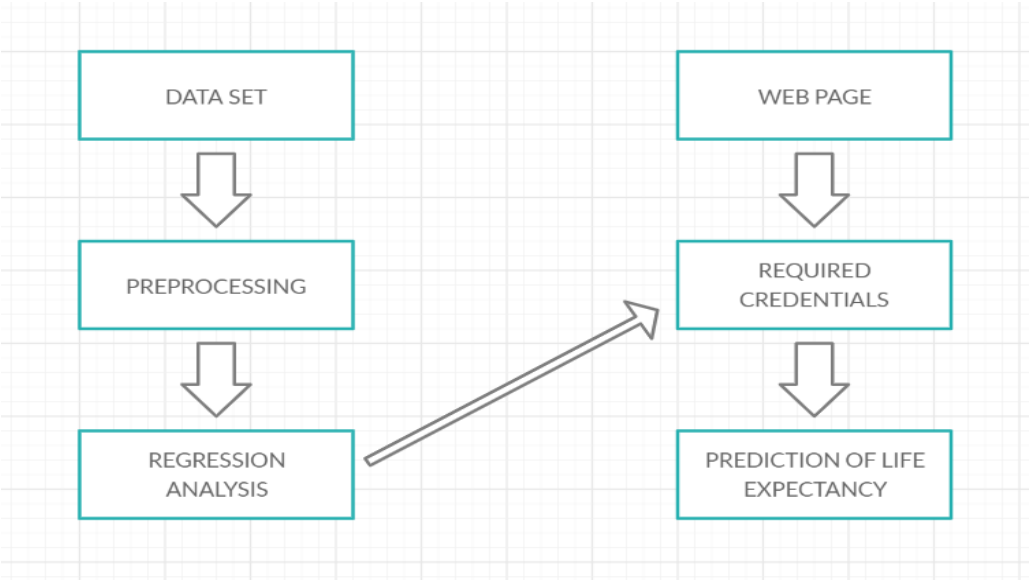
Life expectancy is one of the most important factors in end-of-life decision making. Good prognostication for example helps to determine the course of treatment and helps to anticipate the procurement of health care services and facilities.

## 2.2 Proposed solution

Using Machine Learning we can predict the life expectancy of people in different countries based on the values of the factors that affect life span of an individual in each country.

# 3. THEORITICAL ANALYSIS

## 3.1 Block diagram




### 3.2 Hardware / Software designing

The software used are python, IBM cloud services such as IBM Watson studio, Machine learning and Node-Red flow for user interface.

## 4. EXPERIMENTAL INVESTIGATIONS

The dataset collected is pre-processed to drop unnecessary values and deal with null values. After checking the accuracy of the model using different regression algorithms, Random Forest Regression is found to have the highest accuracy and least mean absolute error.

## 5. RESULT

The model is successfully predicting the life expectancy with a very good accuracy.

## 6. ADVANTAGES & DISADVANTAGES

ADVANTAGES

- Involves reviewing large volumes of data to discover specific trends and patterns that would most often not be apparent to humans.
- Life expectancy in the future can be found out so as to take necessary steps to improve it.

DISADVANTAGES

- Choosing an algorithm to correctly interpret the results is a major concern.

## 7. APPLICATIONS

Predicting the life expectancy of people in the future helps to take extra care on those factors that reduce the life expectancy.

## 8. CONCLUSION

Prognostication of life expectancy is difficult for humans. Machine learning techniques offer a feasible and promising approach to predicting life expectancy.

## 9. FUTURE SCOPE

Good prognostication of life expectancy helps to determine the course of treatment and helps to anticipate the procurement of health care services and facilities.

## 10. BIBILOGRAPHY


https://www.kaggle.com/kumarajarshi/life-expectancy-who

https://developer.ibm.com/tutorials/how-to-create-a-node-red-starter-application/

https://developer.ibm.com/technologies/machine-learning/series/learning-path-machine-learning-for-developers/

https://developer.ibm.com/tutorials/watson-studio-auto-ai/