**PREDICTING LIFE EXPECTANCY USING MACHINE LEARNING**

**A PROJECT REPORT**

submitted as a course project for

**MACHINE LEARNING INTERNSHIP**

**under SMARTBRIDGE**

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**1. PROJECT SUMMARY**

* A typical Regression Machine Learning project leverages historical data to predict insights into the future. This project 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 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.

**2. PROJECT REQUIREMENTS**

* Knowledge of Regression Algorithms
* Python for ML
* IBM cloud
* IBM Watson Studio
* NODE RED
* GITHUB
* SLACK

**3. PROJECT RESOURCES**

* **IBM Cloud** : For data storage
* **IBM Watson Studio** : Creation and Deployment og ML Model
* **NODE RED** : For Web UI and Interfacing with Model
* **Slack** : Communication with Teammates and mentors

**4. PROJECT DELIVERABLES**

* A machine learning model using regression algorithms is made and deployed with an accuracy of 90%+ that uses data provided by WHO available at kaggle to train and test the model.
* After deployment of model, a web UI is created using Node-Red available on IBM Cloud and is used to integrate the machine learning service with the web UI.
* After the completion of the project all the necessary files and source codes for model and UI is uploaded on github for further improvisation or distribuiton.

**5. PROJECT TIMELINE**

* **Week 1 :**Exploratory Data Analysis of the Dataset provided
* **Week 2 :**Build Model, Training model and Testing for accuracy
* **Week 3 :**Creation of Web UI using Node-red in IBM Cloud
* **Week 4 :**Integrating Model with UI and test its working

**6. PROJECT RISKS**

* It may happen that our model will not predict right when sudden influencing factors affect human life like Ex : Covid 19.
* To deal with it we will be collecting data for it from WHO and will integrate that to our data set and model.