

Project ID : SPS_PRO_215
Project Title : Predicting Life Expectancy using Machine Learning

Project Scope, Schedule, Team & Deliverables

Project Summary:-

Life expectancy is a statistical measure of the average time a human being is expected to live. 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.

We will use dataset which has factors specified and apply different Regression Machine Learning Algorithms to get life expectancy for a particular human being.

Project Requirements:-

Cloud for deploying Project
Watson for building AI Project

Functional Requirements:-

High Performance
Accurate Result
Efficiency
Platform Independent

Technical Requirements:-

Knowledge Python, IBM Cloud, IBM Watson

Software Requirements:-

Slack
IBM Cloud
Watson Studio
Zoho Writer

Project Deliverables:-

By this project, it will be easier for a country to determine the predicting factor which is contributing to lower value of life expectancy. This will help in suggesting a country which area should be given importance in order to efficiently improve the life expectancy of its population.

Project Team:-

It is the individual project.

Project Schedule:-

Project Scope, Schedule, Team & Deliverables - 1 Day

Setup the Development Environment - 1 Day

Create IBM Cloud Account - 0.5 Day

Create a Node-RED Starter Application-1 Day

Explore IBM Watson Usecases- 0.5 Day

Explore IBM Watson Machine Learning- 3 Days

Build your own ML model in IBM Watson Studio-2 Days

Automate your ML model- 1 Day

Collect the Dataset for the Project- 1 Day

Create Necessary IBM Cloud Services- 2 Day

Create a Watson Studio Project - 2 Day

Configure Watson Studio - 1 Day

Create Machine Learning Service - 1 Day

Create a Jupyter Notebook in IBM Watson and import data - 0.5 Day

Build a Machine Learning model and create Endpoints for Node-RED integration - 2 Days

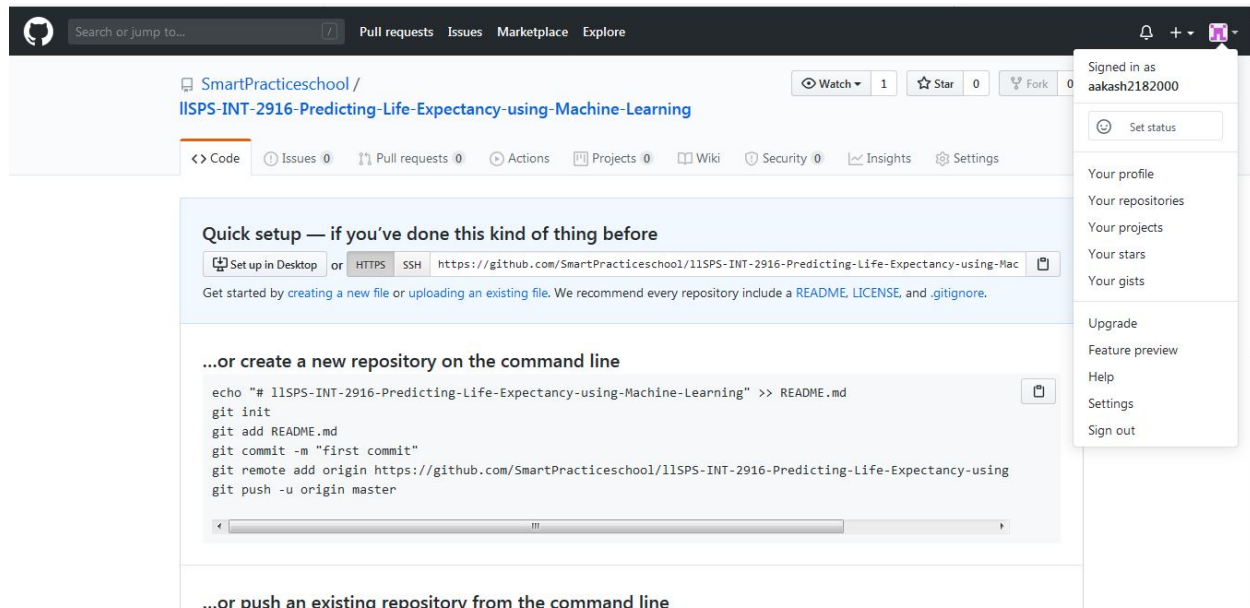
Build Node-RED Flow to Integrate ML Services - 2 Days

Import dataset and create AUTO AI Experiment - 1 Day

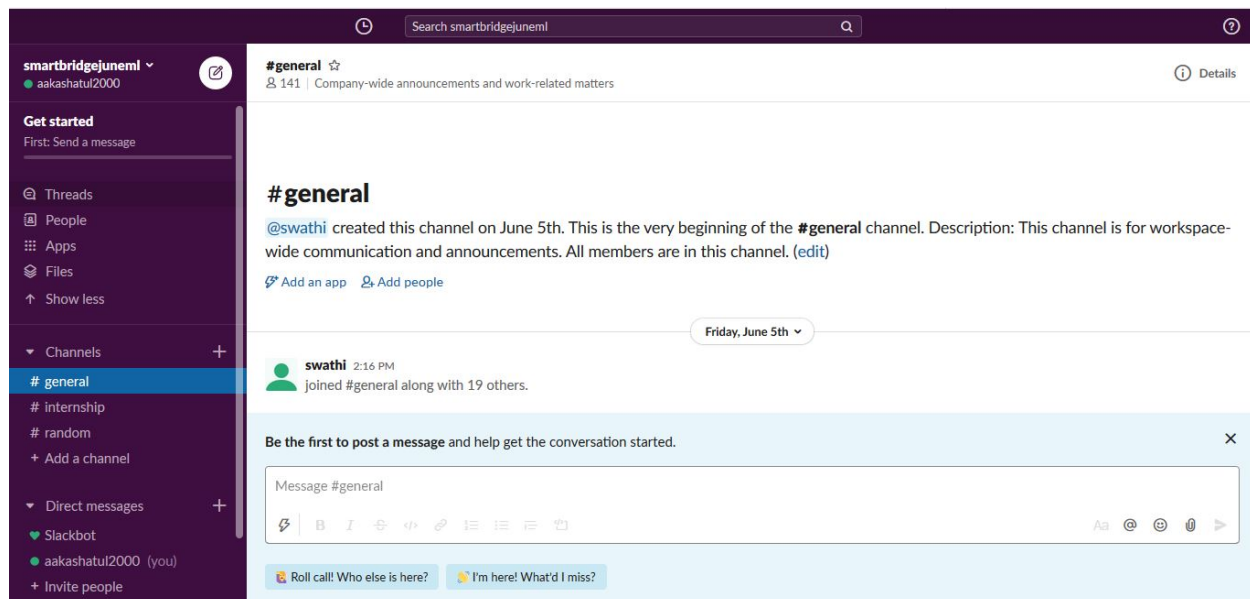
Build Node-RED flow to integrate AutoAI - 1 Day

Setup the Development Environment

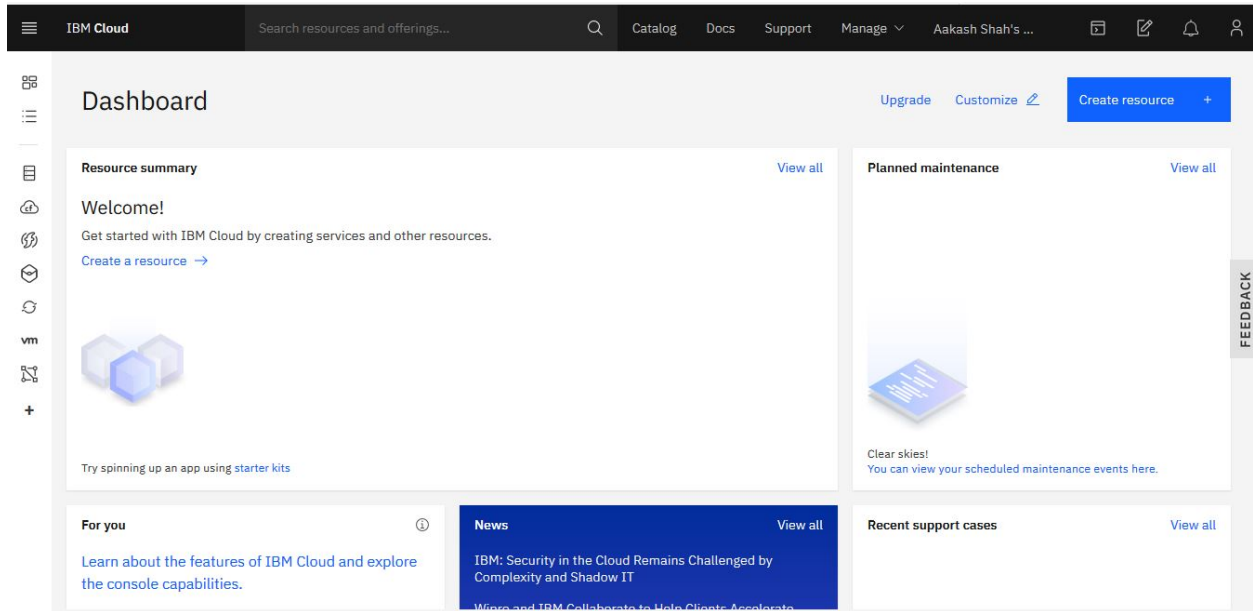
GitHub:-



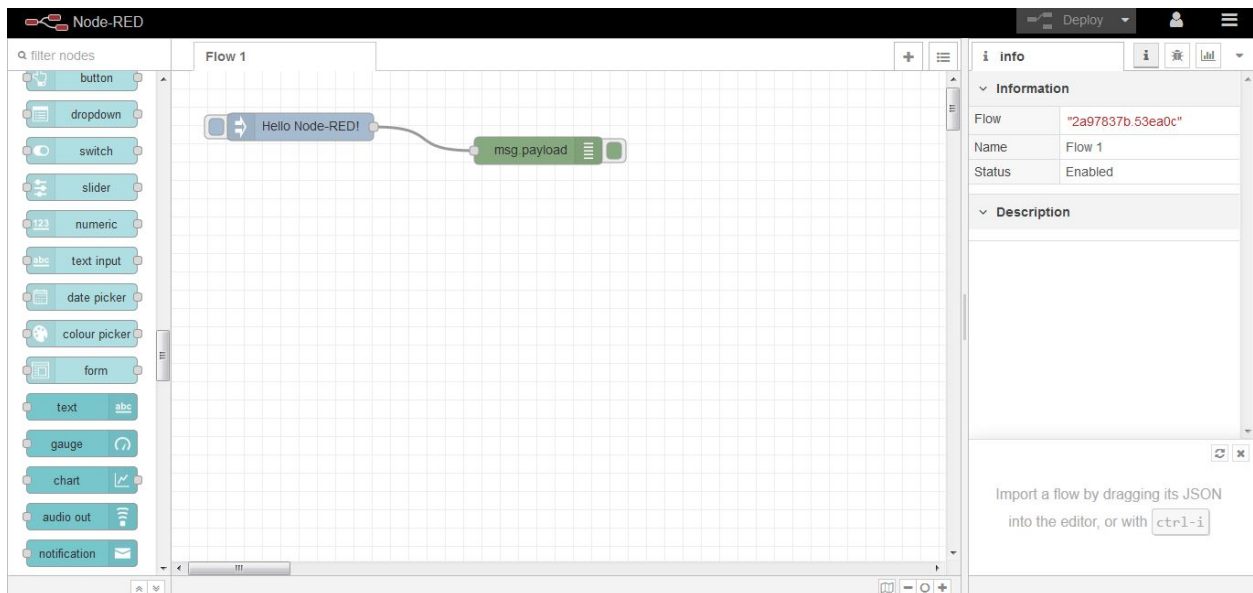
Slack:-

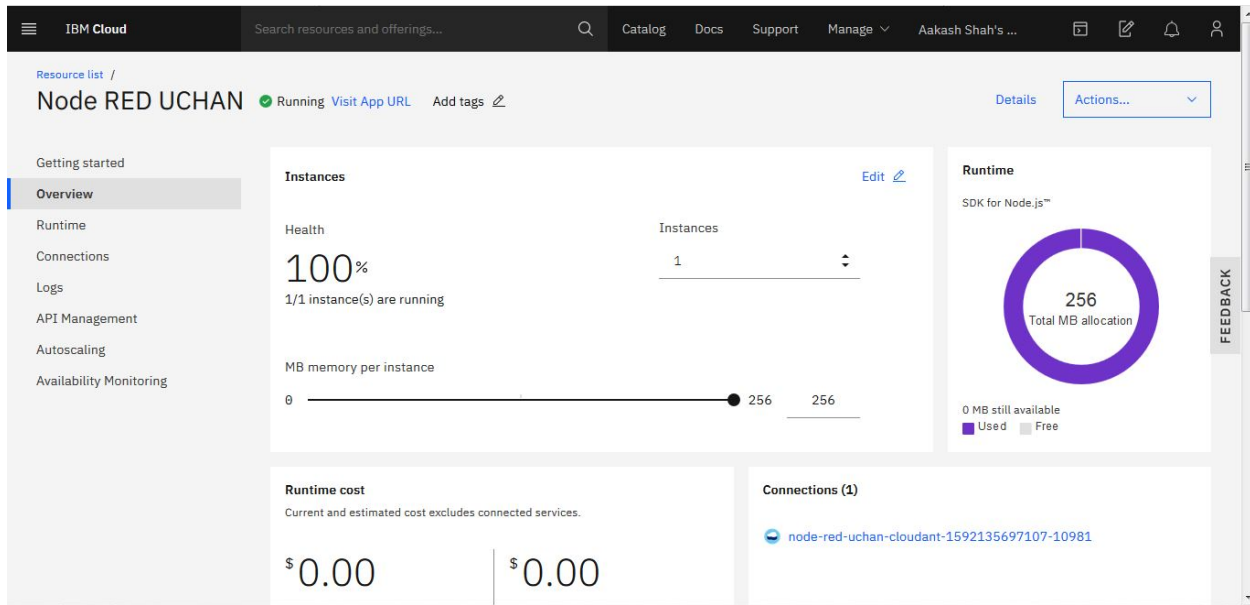


Sign-up for IBM Cloud

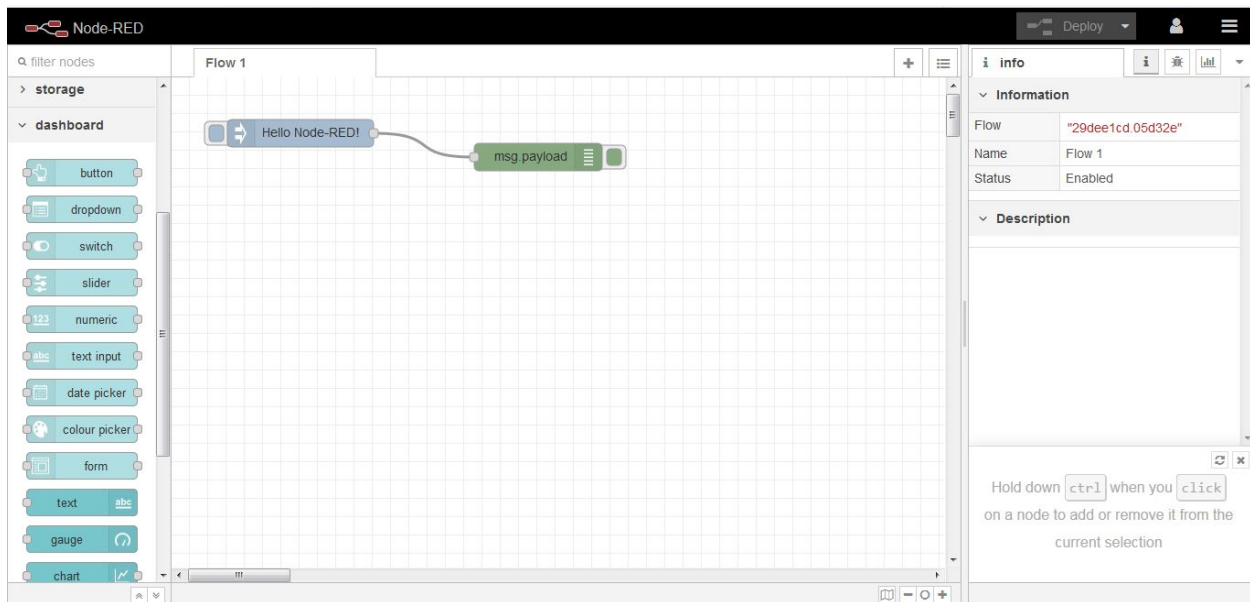


Node-RED Starter Application





Node-RED Starter Kit with Dashboard Node



Build your own ML model in IBM Watson Studio

IBM Watson Studio

Upgrade

Aakash Shah's Account

AS

My projects / Project2

Launch IDE

Add to project

Overview

Assets

Environments

Jobs

Deployments


Access Control


Settings



Deployments

Name	Type	Status	Actions
Deployment1	Web Service	Ready	
Salary Prediction	Web Service	Ready	

Deployment of Salary Prediction using Linear Regression






 IBM Watson Studio

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My projects / Project2 / Salary Prediction / Salary Prediction


    


Status	Deploy success
Asset type	Model
Asset name	Salary Prediction
Machine learning service	WatsonMachineLearning
Created	Jun 17, 2020 6:31 PM
Last modified	Jun 17, 2020 6:31 PM



Model

Name	Salary Prediction
ID	32be32f1-78bd-4bf5-94f5-559f7c04563
Version ID	40b25e01-2e29-4fd1-8f29-49448679b382








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My projects / Project2 / Salary Prediction / Salary Prediction

Salary Prediction


Overview Implementation **Test**

Enter input data  

```
{ "fields": ["YearsExperience"], "values": [[5.9]] }
```

Predict

```
{
  "fields": [
    "prediction"
  ],
  "values": [
    [
      81724.29239833039
    ]
  ]
}
```



Automate Model using AutoAI

IBM Watson Studio

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My projects / Project2 / customer-churn-manual - P3 LG... / Deployment1

Status	Ready
Asset type	Model
Asset name	customer-churn-manual - P3 LGBMClassifierEstimator
Machine learning service	WatsonMachineLearning
Created	Jun 17, 2020 12:25 PM
Last modified	Jun 17, 2020 12:25 PM

Model

Name	customer-churn-manual - P3 LGBMClassifierEstimator
ID	44c60c59-c54e-49e1-a11d-e999c292738c
Version ID	f7129595-3b58-41c9-815f-0c7eb66bca4c

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My projects / Project2 / customer-churn-manual - P3 LG... / Deployment1

Deployment1

OverviewImplementationTest

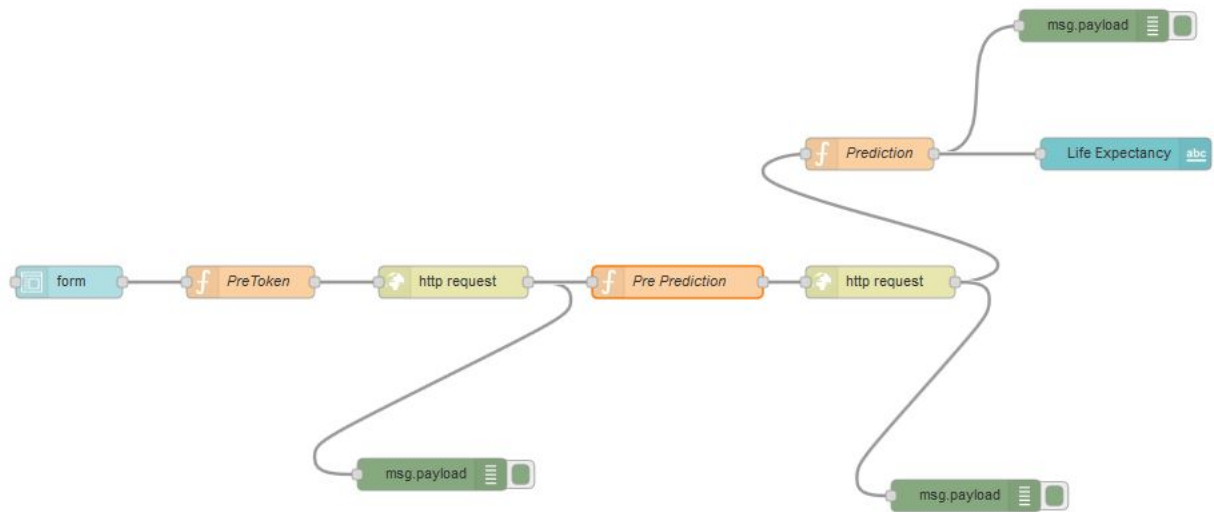
Enter input data

minutes", "total day calls", "total day charge",
"total eve minutes", "total eve calls", "total
eve charge", "total night minutes", "total
night calls", "total night charge", "total intl
minutes", "total intl calls", "total intl charge",
"customer service calls", "values":
[["NY",161,415,"351-7269","no","no",0,332.9
,67,56.59,317.8,97,27.01,160.6,128,7.23,5.
4,9,1.46,4]]]]

Predict

```
{  
  "predictions": [  
    {  
      "fields": [  
        "prediction",  
        "probability"  
      ],  
      "values": [  
        [  
          true,  
          [  
            0.0015741729854632514,  
            0.9984258270145367  
          ]  
        ]  
      ]  
    }  
  ]  
}
```


Node Red Flow of Life Expectancy using ML



Result of prediction (Node Red Form):

Home Page

Life Expectancy Prediction

Life Expectancy	65
Country	Afghanistan
Year	2015
Status	Developing
Adult Mortality	263
Infant deaths	62
Alcohol	0.01
Percentage Expenditure	71.27962362
Measles	1154
BMI	19.1
Under five deaths	92

Under five deaths	83
Polio	4
Diphtheria	65
HIV / AIDS	0.1
GDP	584,25921
Thinness 1-19 Years	17.2
Income Composition of Resources	0.479
Schooling	10.1
<input type="button" value="SUBMIT"/> <input type="button" value="CANCEL"/>	

Github Link:

<https://github.com/SmartPracticeschool/ILSPS-INT-2916-Predicting-Life-Expectancy-using-Machine-Learning>