Project Scope

Project Name	PREDICTING LIFE EXPECTANCY USING MACHINE LEARNING
Kick-off Date	9th June, 2020
Project Manager	Ashutosh Sharma

Project Summary:
A typical Regression Machine Learning Project leverages historical data to predict insights into the future. This problem statement is aid 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 illness, Physical illness, Education, Year of their birth and other demographic factors. This problem statement provides a way to predict the 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 Requirements:
- Life Expectancy dataset
- IBM Cloud Services
- Watson Studio
- Building ML Models with Python
- Creating End-points for Node-RED Integration

Functional Requirements:
- Life Expectancy dataset
- IBM Cloud Services
- Jupyter Notebook

Technical Requirements:
- Creating Notebook in IBM Watson
- Importing data to Watson
- Building ML Models with Python
- Creating End-points for Node-RED Integration

Software Requirements:
- IBM Cloud Services
- IBM Watson Studio

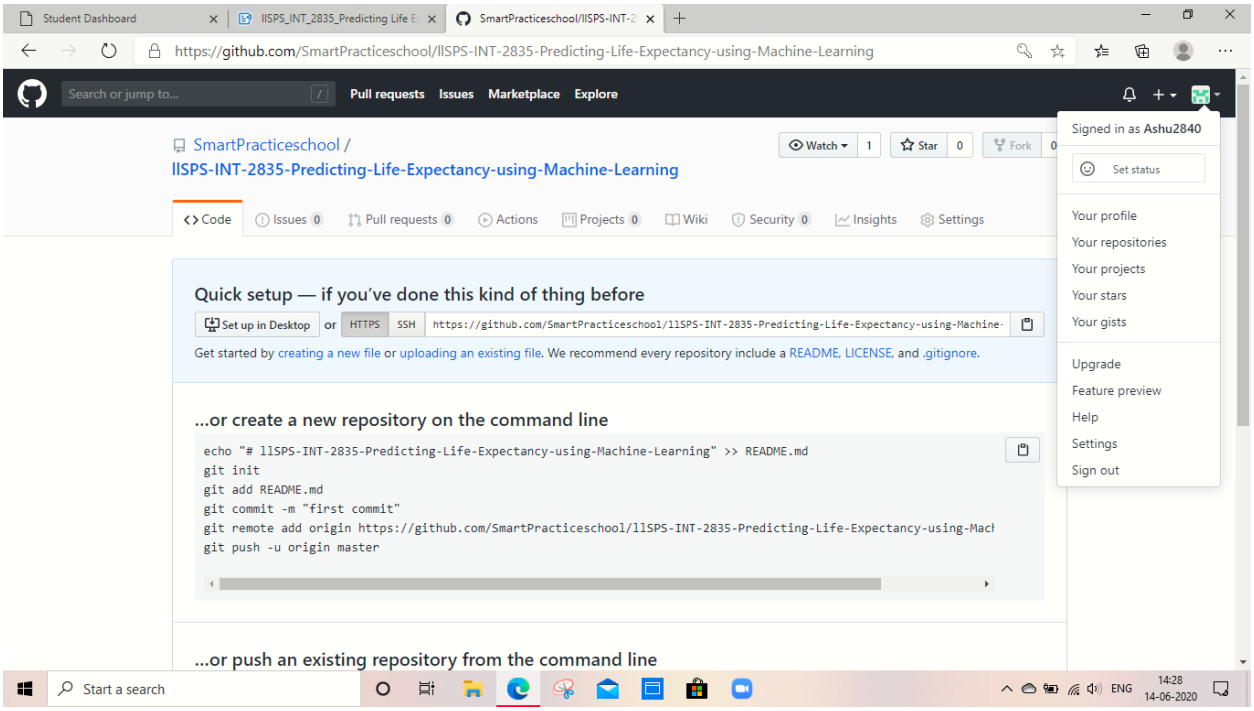
Project Deliverables:

- Project Documentation.
- A Machine Learning model that will predict life expectancy.
- IBM Watson Studio Auto AI generated model.
- Node red flow diagram

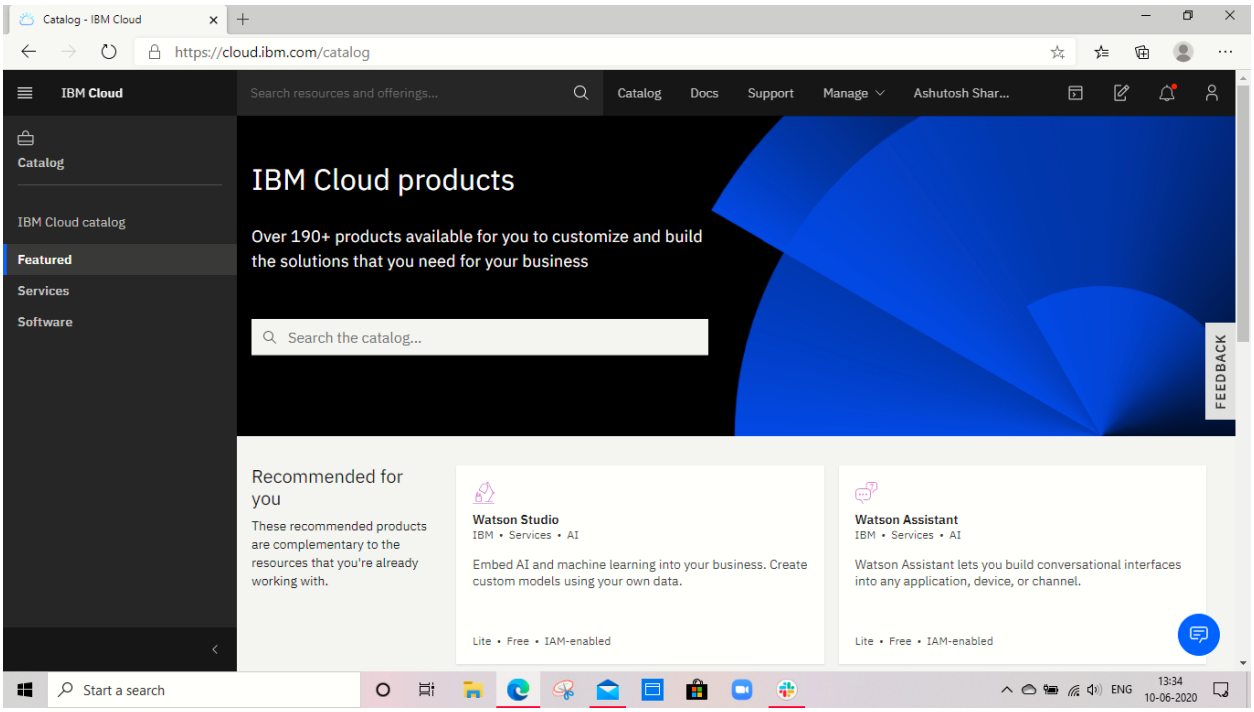
Project Team:
This is a solo project under SmartBridge by Ashutosh Sharma

Project Schedule:
This project is scheduled for 30 days. That means we need to build a web application with integration to all these services & deploy all the services on IBM Cloud Platform within 30 days of span i.e., June 9th to July 7th 2020

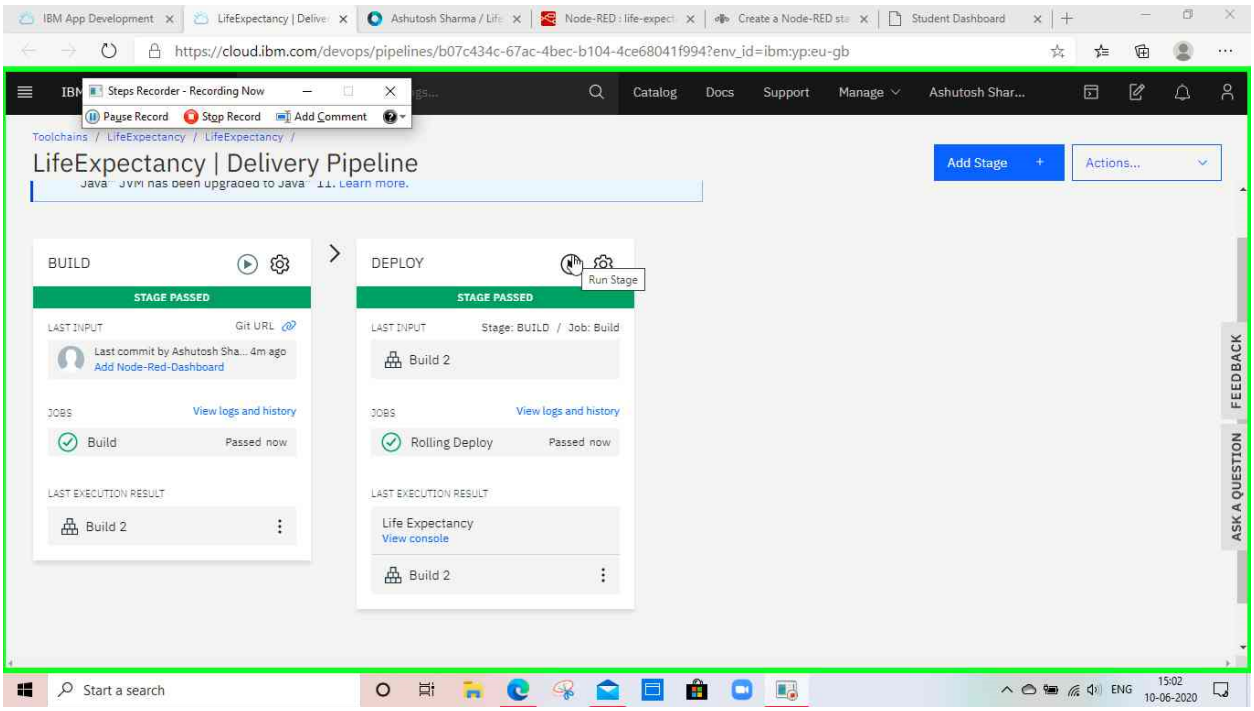
GitHubAccount Screenshot



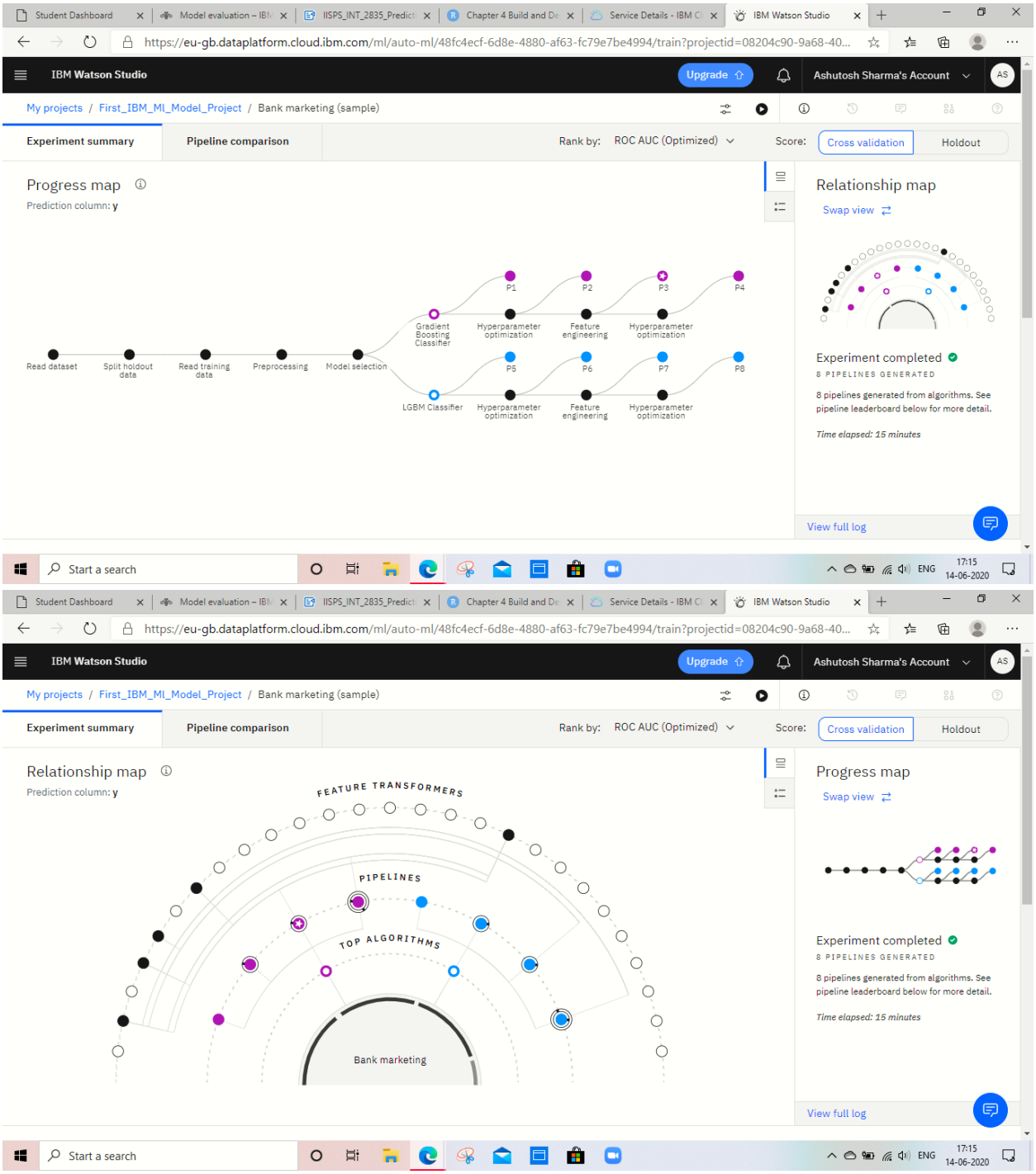
IBM Account Screenshot

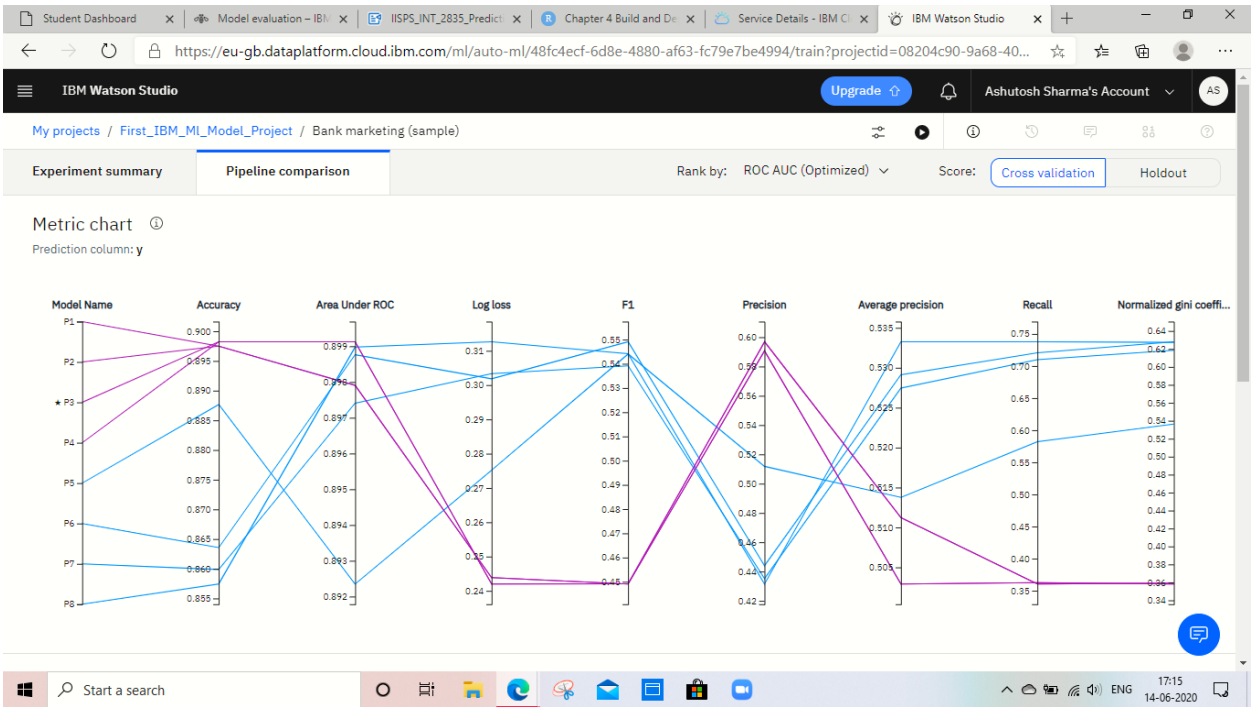


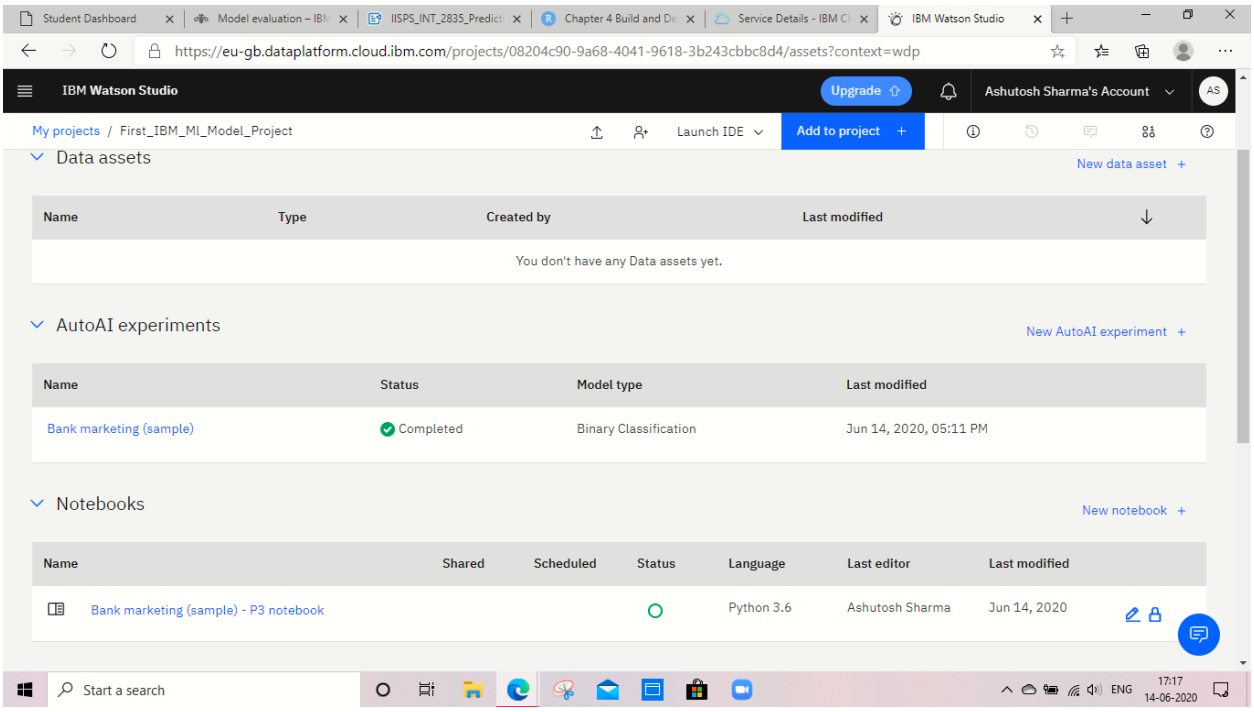
Node-Red Starter Application Screenshot

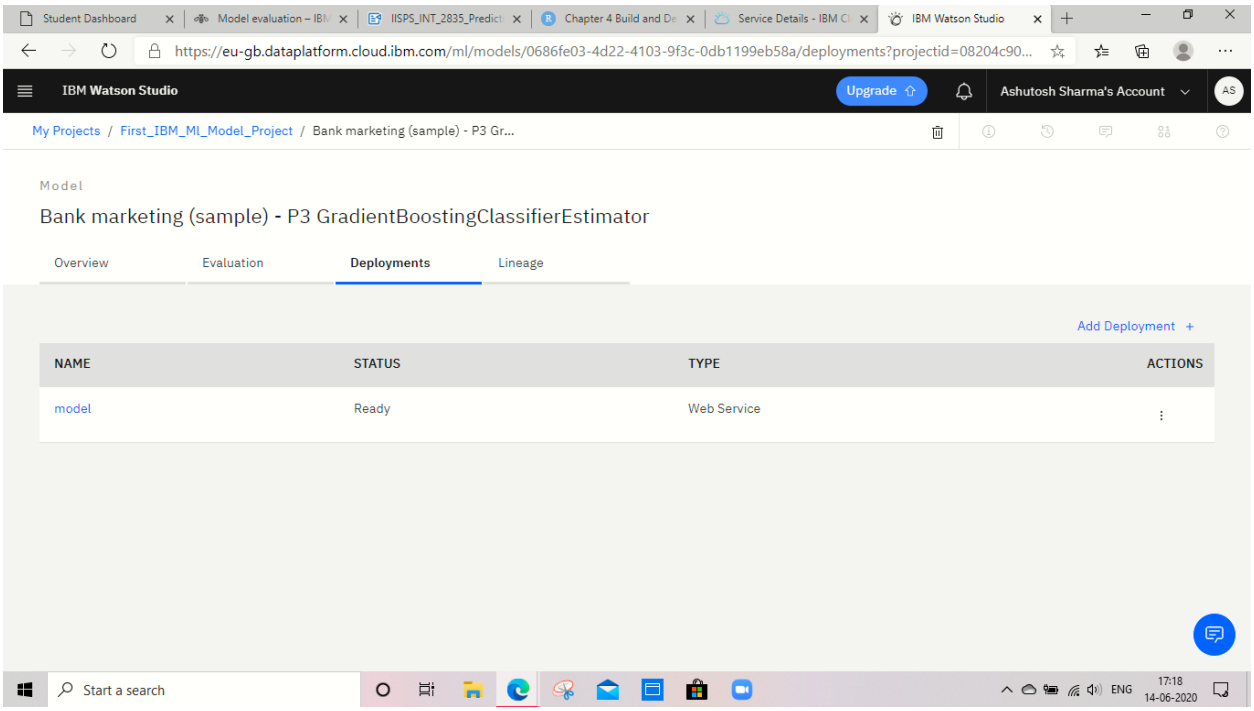


IBM Model in Waston Studio using Machine Learning And AutoAI Model Screenshot



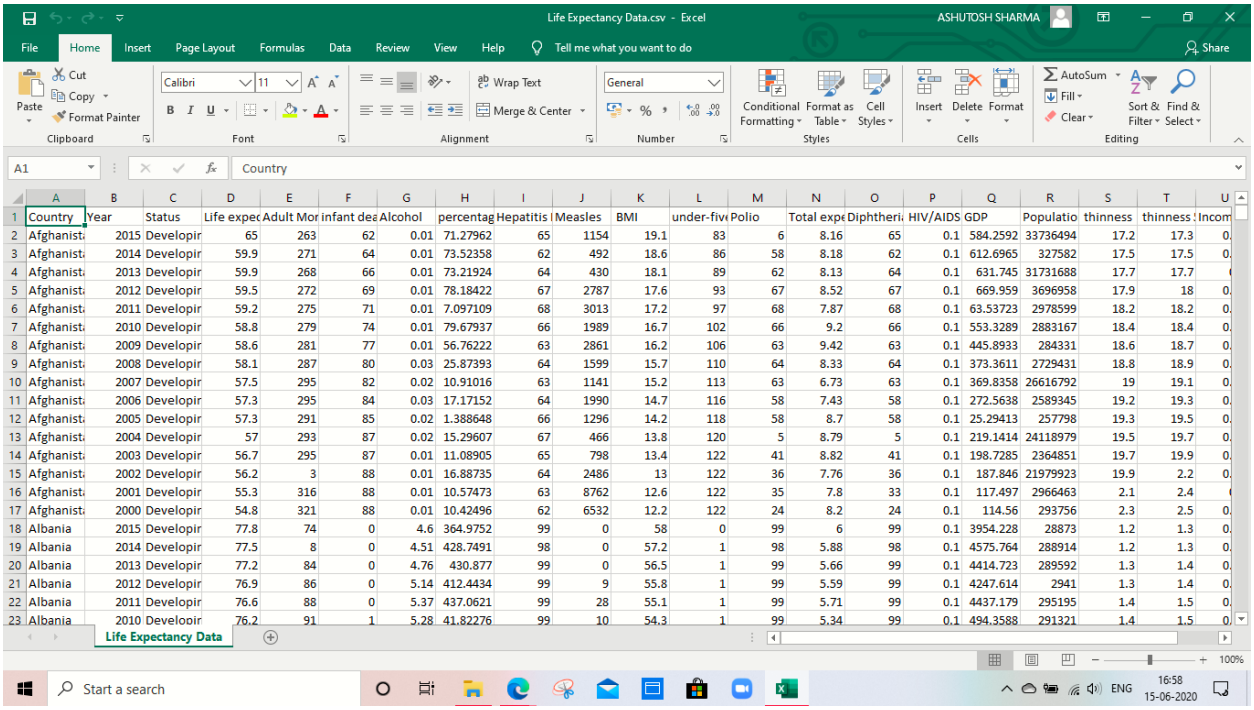

IBM Watson Studio
Upgrade
Ashutosh Sharma's Account
My projects / First_IBM_MI_Model_Project / Bank marketing (sample)
Experiment summary
Pipeline comparison
Rank by: ROC AUC (Optimized)
Score: Cross validation Holdout
Metric chart
Prediction column: y
Model Name
Accuracy
Area Under ROC
Log loss
F1
Precision
Average precision
Recall
Normalized gini coeffi...
P1
P2
P3
P4
P5
P6
P7
P8


IBM Watson Studio
Upgrade
Ashutosh Sharma's Account
My projects / First_IBM_MI_Model_Project
Launch IDE
Add to project
Data assets
New data asset
Name
Type
Created by
Last modified
You don't have any Data assets yet.
AutoAI experiments
New AutoAI experiment
Name
Status
Model type
Last modified
Bank marketing (sample)
Completed
Binary Classification
Jun 14, 2020, 05:11 PM
Notebooks
New notebook
Name
Shared
Scheduled
Status
Language
Last editor
Last modified
Bank marketing (sample) - P3 notebook
Python 3.6
Ashutosh Sharma
Jun 14, 2020

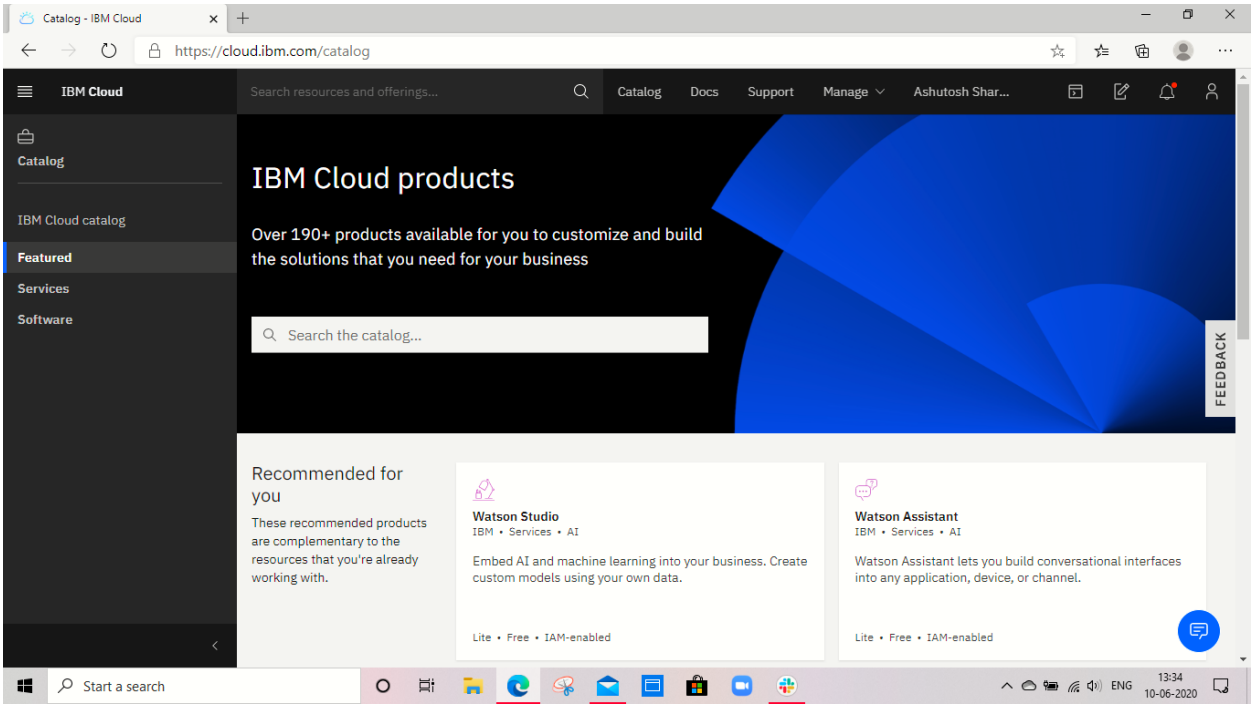

Student Dashboard
Model evaluation – IBM
IISPS_INT_2835_Predict
Chapter 4 Build and De
Service Details - IBM Cl
IBM Watson Studio
https://eu-gb.dataplatform.cloud.ibm.com/ml/models/0686fe03-4d22-4103-9f3c-0db1199eb58a/deployments?projectid=08204c90...
IBM Watson Studio
Upgrade
Ashutosh Sharma's Account
AS
My Projects / First_IBM_MI_Model_Project / Bank marketing (sample) - P3 Gr...
Model
Bank marketing (sample) - P3 GradientBoostingClassifierEstimator
Overview
Evaluation
Deployments
Lineage
Add Deployment +
NAME
STATUS
TYPE
ACTIONS
model
Ready
Web Service
Start a search
ENG
17:18
14-06-2020

Predicting Life Expectancy

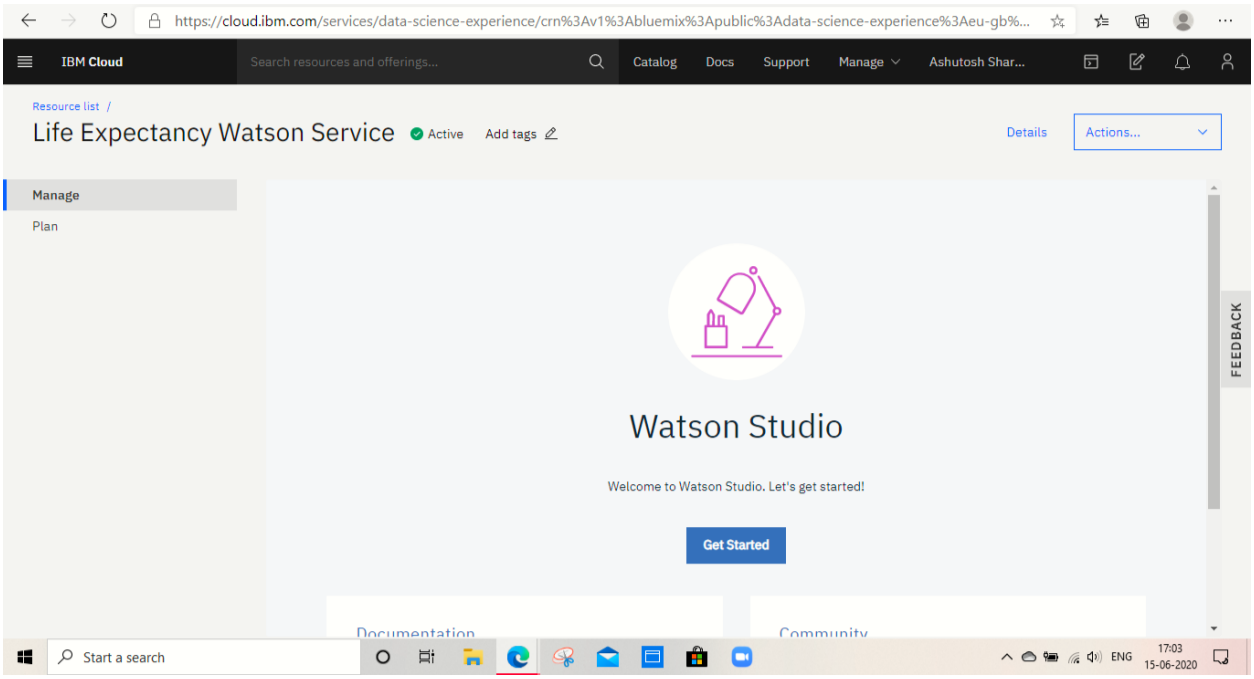
Collect the data set for project:-



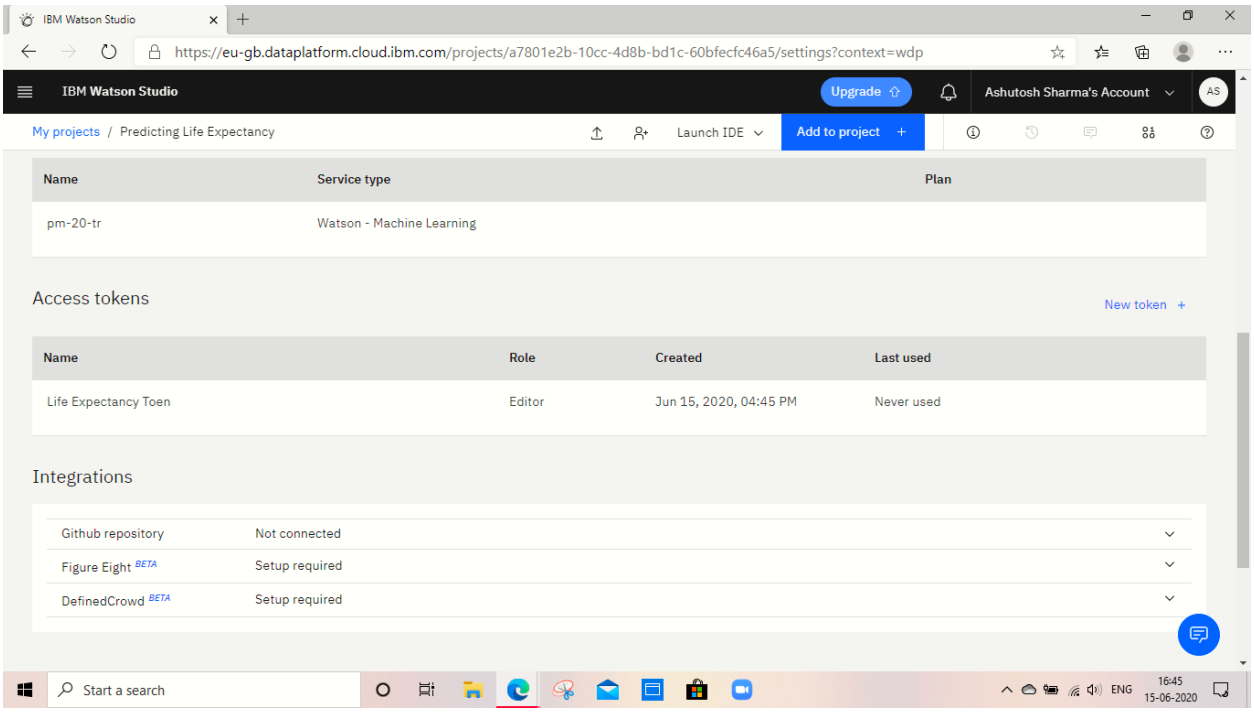
Create IBM Service:-



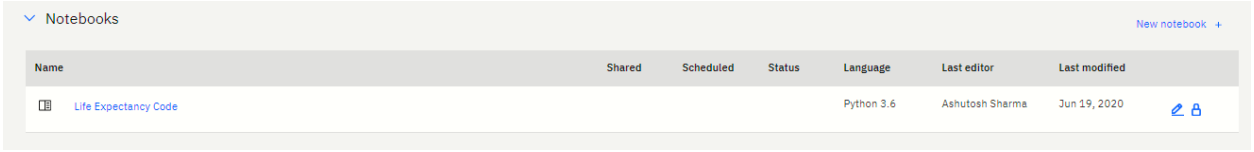
Create Waston Studio:-

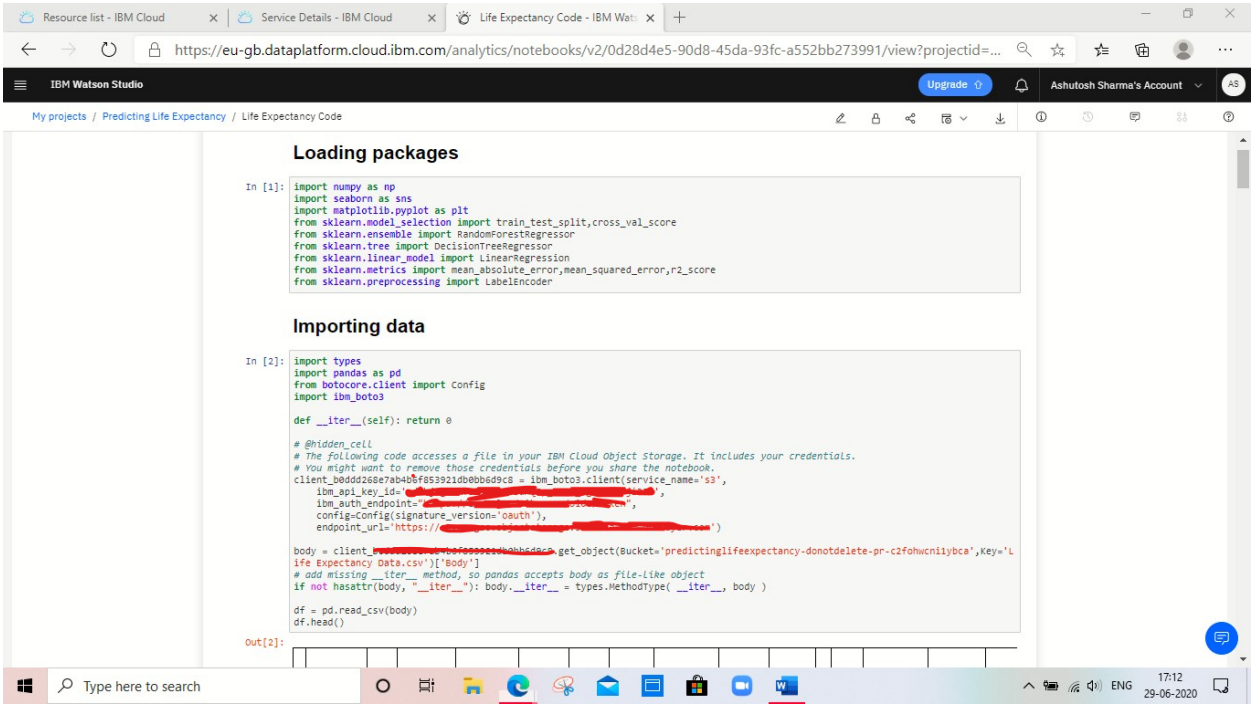


Configure Waston Studio and Creating Machine Learning Service:-



Creating Jupyter Notebook and Importing Data In It:-





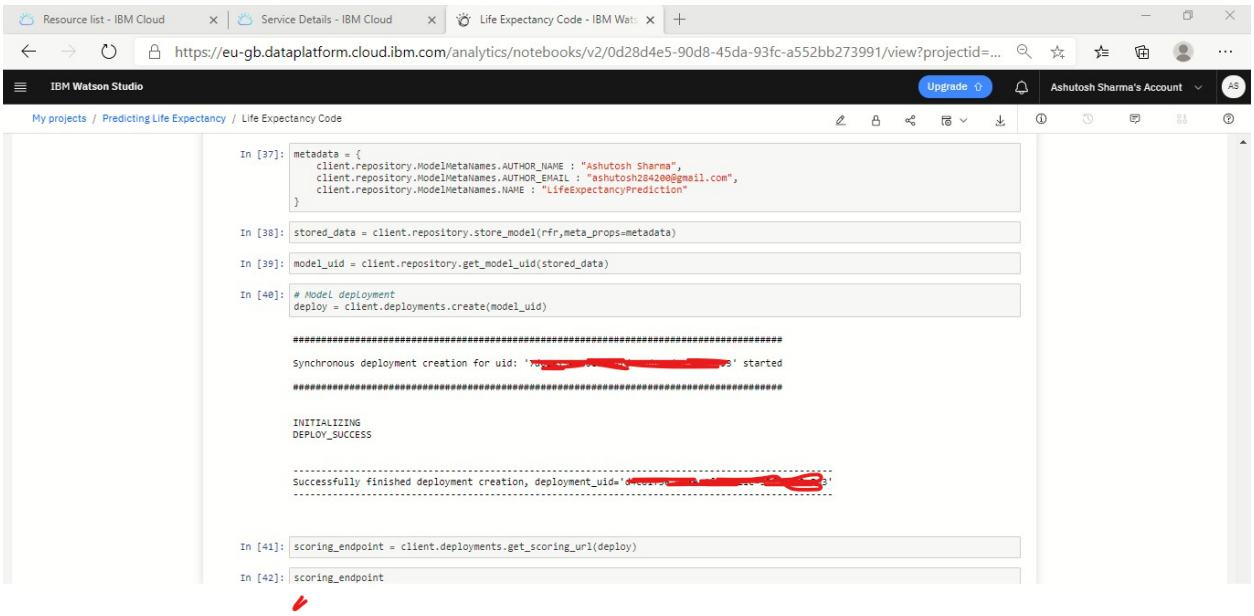

```
df = pd.read_csv(body)
df.head()
```

Out[2]:

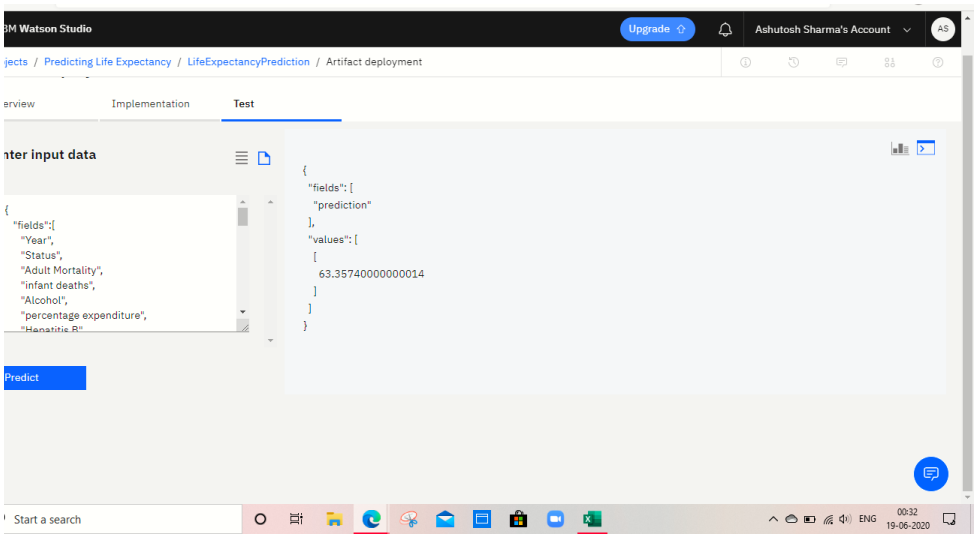
	Country	Year	Status	Life expectancy	Adult Mortality	infant deaths	Alcohol	percentage expenditure	Hepatitis B	Measles	...	Polio	Total expenditure	Diphtheria	HIV/A
0	Afghanistan	2015	Developing	65.0	263.0	62	0.01	71.279624	65.0	1154	...	6.0	8.16	65.0	0.1
1	Afghanistan	2014	Developing	59.9	271.0	64	0.01	73.523582	62.0	492	...	58.0	8.18	62.0	0.1
2	Afghanistan	2013	Developing	59.9	268.0	66	0.01	73.219243	64.0	430	...	62.0	8.13	64.0	0.1
3	Afghanistan	2012	Developing	59.5	272.0	69	0.01	78.184215	67.0	2787	...	67.0	8.52	67.0	0.1
4	Afghanistan	2011	Developing	59.2	275.0	71	0.01	7.097109	68.0	3013	...	68.0	7.87	68.0	0.1

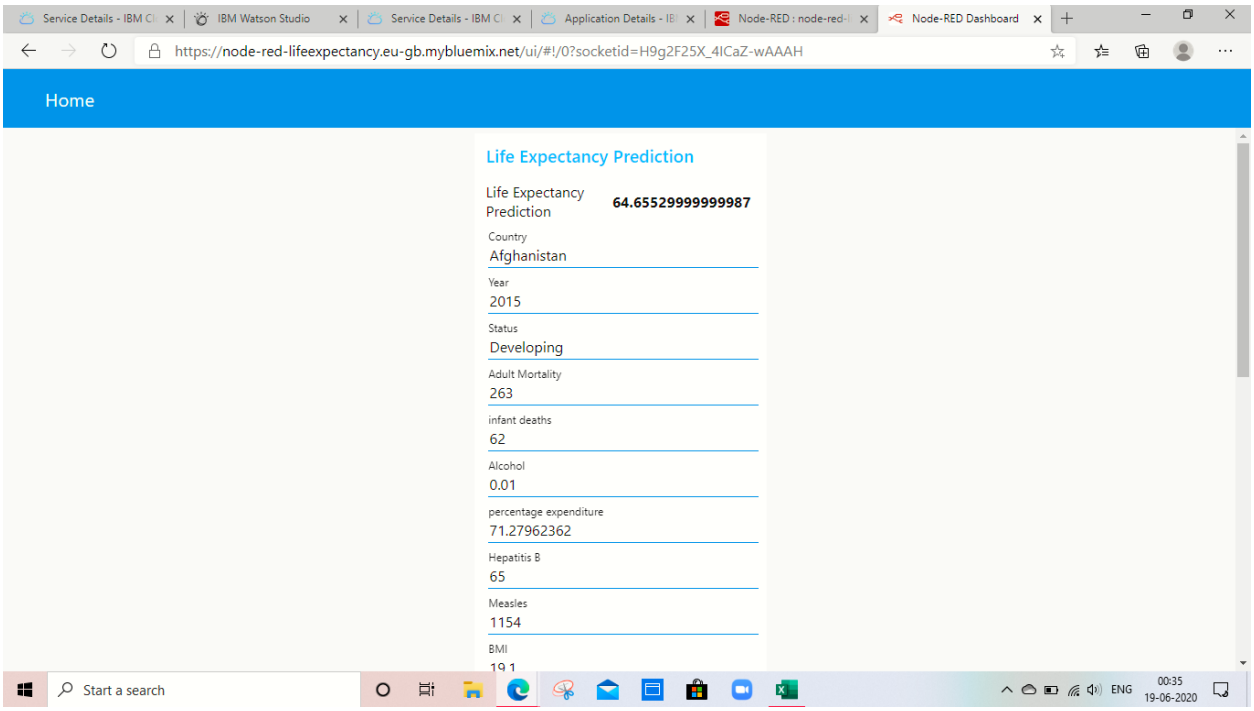
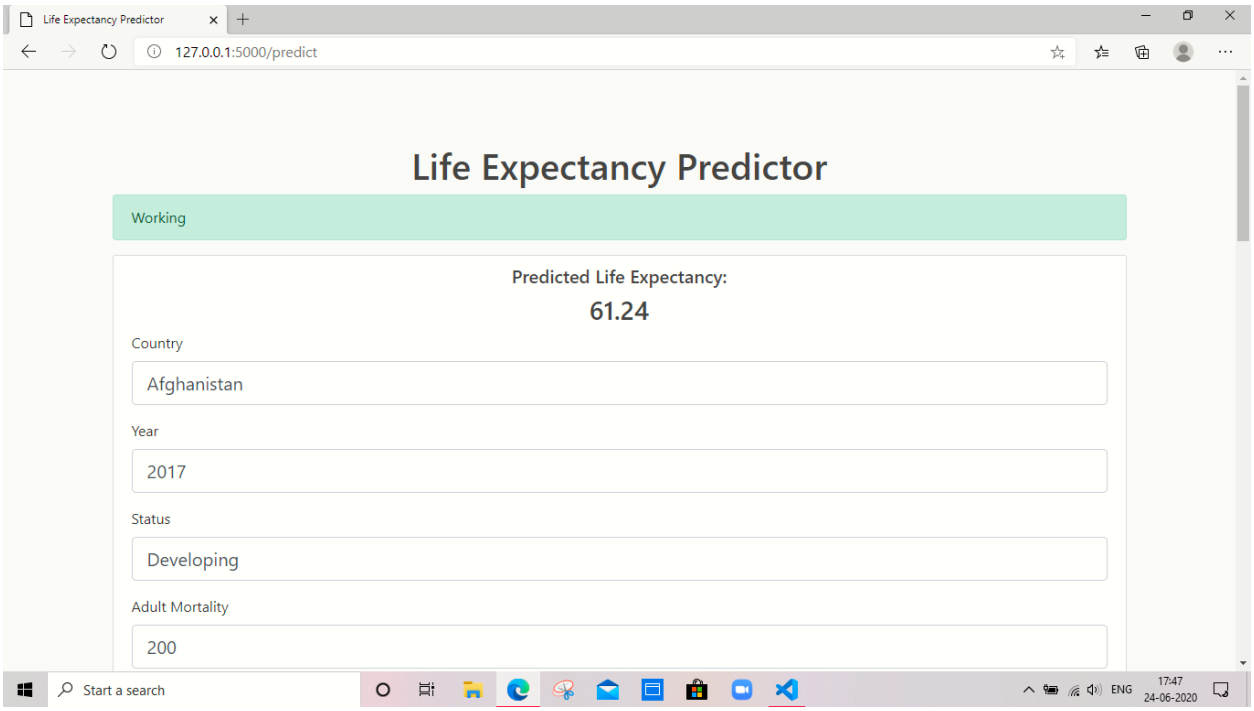
5 rows × 22 columns

Build A Machine Learning Model And Create Endpoints For Node-RED Integration



Build Node-RED Flow To Integrate ML Services





Flask APP Development