OUTPUT

app_ibm.py > predict

```python
from flask import Flask, render_template, request
import requests


# NOTE: you must manually set API_KEY below using information retrieved from your IBM Cloud account.
API_KEY = "dtEJtUBwh-4FQHs46Ph-mq8d9VTPBNvgIfLIAMPDUMe8"
token_response = requests.post('https://iam.cloud.ibm.com/identity/token', data={"apikey":
 API_KEY, "grant_type": 'urn:ibm:params:oauth:grant-type:apikey'})
mltoken = token_response.json()["access_token"]

header = {'Content-Type': 'application/json', 'Authorization': 'Bearer ' + mltoken}


app = Flask(__name__)

@app.route("/")
def hello_world():
    return render_template('index.html')

@app.route("/predict", methods= ['POST'])
def predict():
    id = request.form['id']
    cycle = request.form['cycle']
    setting1 = request.form['setting1']
    setting2 = request.form['setting2']
    setting3 = request.form['setting3']

    s1 = request.form['s1']
    s2 = request.form['s2']
    s3 = request.form['s3']
```

```
model_details
```


```
{'entity': {'hybrid_pipeline_software_specs': [],
  'label_column': 'l0',
  'software_spec': {'id': '12b83a17-24d8-5082-900f-0ab31fbfd3cb',
   'name': 'runtime-22.1-py3.9'},
  'training_data_references': [{'connection': {'access_key_id': 'not_applicable',
     'endpoint_url': 'not_applicable',
     'secret_access_key': 'not_applicable'},
    'id': '1',
    'location': {},
    'schema': {'fields': [{'name': 'f0', 'type': 'float'},
      {'name': 'f1', 'type': 'float'},
      {'name': 'f2', 'type': 'float'},
      {'name': 'f3', 'type': 'float'},
      {'name': 'f4', 'type': 'float'},
      {'name': 'f5', 'type': 'float'},
      {'name': 'f6', 'type': 'float'},
      {'name': 'f7', 'type': 'float'},
      {'name': 'f8', 'type': 'float'},
      {'name': 'f9', 'type': 'float'},
      {'name': 'f10', 'type': 'float'},
      {'name': 'f11', 'type': 'float'},
      {'name': 'f12', 'type': 'float'},
      {'name': 'f13', 'type': 'float'},
      {'name': 'f14', 'type': 'float'},
      {'name': 'f15', 'type': 'float'},
      {'name': 'f16', 'type': 'float'},
      {'name': 'f17', 'type': 'float'},
      {'name': 'f18', 'type': 'float'},
      {'name': 'f19', 'type': 'float'},
      {'name': 'f20', 'type': 'float'},
      {'name': 'f21', 'type': 'float'},
      {'name': 'f22', 'type': 'float'},
      {'name': 'f23', 'type': 'float'},
      {'name': 'f24', 'type': 'float'},
      {'name': 'f25', 'type': 'float'}],
```


Machine Learning Approach For Predictive Maintenance Aircraft Engine Using IBM Watson Studio

About Project:

Engine failure is highly risky and needs a lot of time for repair. Unexpected failure leads to loss of money and time. Predicting the failure prior, will save time, effort, money and sometimes even lives. The failure can be detected by installing the sensors and keeping a track of the values. The failure detection and predictive maintenance can be for any device, out of which we will be dealing with the engine failure for a threshold number of days. The project aims to predict the failure of an engine by using Machine Learning to save loss of time & money thus improving productivity.

Maintenance Required!! Expected a failure within 30 days.

ID

Number of Cycles per minute