

****Step 1: Create a Machine Learning Model****

In your Jupyter Notebook cell, you can create and save a model as follows:

```
```python
import pickle

from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier

Load the iris dataset (as an example)
data = load_iris()
X, y = data.data, data.target

Split the dataset into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

Create and train a simple Random Forest classifier (as an example)
model = RandomForestClassifier(n_estimators=100, random_state=42)
model.fit(X_train, y_train)

Save the model to a file using Pickle
with open('model.pkl', 'wb') as model_file:
 pickle.dump(model, model_file)
```
```

This code will create and save a Random Forest classifier model as `model.pkl` in the same directory where your Jupyter Notebook is located.

****Step 2: Create a Flask Web Application****

Next, you need to create a Flask web application. Here's the directory structure you should have:

```
...
```

```
my_flask_app/  
├─ app.py  
├─ templates/  
|   └─ index.html  
└─ model.pkl  
...
```

In your Jupyter Notebook cell, you can create a simple Flask application as follows:

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

app = Flask(__name__)

Load the Pickle model
with open('model.pkl', 'rb') as model_file:
 model = pickle.load(model_file)

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

@app.route('/predict', methods=['POST'])
```

```

def predict():
 try:
 # Get input data from the HTML form
 feature1 = float(request.form.get('feature1'))
 feature2 = float(request.form.get('feature2'))

 # Make a prediction using the model
 prediction = model.predict([[feature1, feature2]])[0]

 # Pass the prediction to the HTML template
 return render_template('index.html', prediction=prediction)

 except Exception as e:
 return render_template('index.html', error_message=str(e))

if __name__ == '__main__':
 app.run(debug=True)

```

### **\*\*Step 3: Create the HTML Template (templates/index.html)\*\***

In the `templates` directory, create an HTML template file named `index.html` as follows:

```

<<<html
<!DOCTYPE html>
<html>
<head>
 <title>Machine Learning App</title>
</head>

```

```

<body>

 <h1>Machine Learning App</h1>

 <form method="POST" action="/predict">

 <label for="feature1">Feature 1:</label>

 <input type="text" id="feature1" name="feature1" required>

 <label for="feature2">Feature 2:</label>

 <input type="text" id="feature2" name="feature2" required>

 <input type="submit" value="Predict">

 </form>

 {% if error_message %}

 <h2>Error:</h2>

 <p>{{ error_message }}</p>

 {% endif %}

 {% if prediction %}

 <h2>Prediction:</h2>

 <p>{{ prediction }}</p>

 {% endif %}

</body>

</html>

'''

```

## **\*\*Step 4: Run the Flask Application\*\***

Navigate to the `flask\_pkl\_app` directory in your terminal where the `app.py` file is located and run the Flask app:

```
'''
```

```
python app.py
```

```
'''
```

Now, your Flask application is running, and you can access it in your web browser at ``http://localhost:5000``.

This setup includes exception handling in the Flask app, which will display any errors on the web page if there are any issues during the prediction process.