

**MODEL DEPLOYMENT** ASSIGNMENTS

*Topic:*

Deployment of a Machine Learning Model.

 [*www.meritshot.com*](http://www.meritshot.com/)

[support@meritshot.com](mailto:support@meritshot.com)

# Objective:

The objective of this assignment is to deploy a machine learning classifier for the IRIS dataset. You will create a deployment pipeline that takes a trained classifier and exposes it as a web service, allowing users to make predictions on new instances of the IRIS dataset.

# Tasks:

Model Training:

 Select a machine learning classifier suitable for the IRIS dataset, such as a decision tree, random forest, or support vector machine (SVM).

 Split the dataset into training and testing sets.

 Train the selected classifier on the training set.

 Evaluate the trained classifier's performance on the testing set, using appropriate evaluation metrics like accuracy, precision, recall, etc.

Model Serialization:

 Serialize the trained classifier using a suitable format, such as pickle or joblib. This step will allow us to save the trained model's state for future use.

Web Service Development:

 Choose a web framework or library for building the web service. Some popular options include Flask, Django, or FastAPI.

 Create a web service that exposes a prediction endpoint.

# Tasks:

 Implement the necessary code to load the serialized model from Step 3 and use it to make predictions on new instances of the IRIS dataset.

 Test the web service locally to ensure it is functioning correctly.

Deployment:

 Select a cloud platform (e.g., AWS, Google Cloud, Azure) or a suitable hosting service for deploying your web service.

 Deploy your web service on the chosen platform.

 Verify that the deployed web service is accessible and can make predictions by sending sample requests and receiving responses.

Documentation and Presentation:

 Create a document or a presentation summarizing the steps taken to deploy the machine learning classifier for the IRIS dataset.

 Discuss any challenges faced during the deployment process and how you addressed them.

 Reflect on the importance of deploying machine learning models and the potential real-world applications of the deployed IRIS classifier.

 Test the Results of your Classifier, Also add Conditions so that the User cannot Input Vague Inputs while using the Classifier.

# Dataset:

The Dataset is about the length and breadth of the sepals and petals to classify the Type of Flower.

**Dataset Link:** [https://docs.google.com/spreadsheets/d/1CQFgYbUlQ](https://drive.google.com/file/d/155j4xd0VkhfL0Rl3zQ_zteXRHQJgnuU8/view?usp=sharing) [0eJFCON8dwrQNrkpXIlRsBgm-](https://drive.google.com/file/d/155j4xd0VkhfL0Rl3zQ_zteXRHQJgnuU8/view?usp=sharing) [CWeR5nPSQ/edit#gid=0](https://drive.google.com/file/d/155j4xd0VkhfL0Rl3zQ_zteXRHQJgnuU8/view?usp=sharing)

# Submission:

 Submit your code files and any additional resources used for deployment.

 Include the documentation or presentation summarizing the deployment process and the web service's functionality.

 Provide any necessary instructions for running or testing your code.