**Kubeflow**

Kubeflow is an open-source platform designed to simplify the deployment and management of machine learning (ML) workflows on Kubernetes. It allows data scientists and machine learning engineers to build, train, and deploy machine learning models seamlessly. Kubeflow leverages Kubernetes for scalability, making it suitable for both small-scale and large-scale ML workloads.

Key components of Kubeflow:

1. **Pipelines**: Automates and manages ML workflows.
2. **KFServing**: Handles model deployment and inference.
3. **Training Operators**: Support distributed training using popular frameworks like TensorFlow, PyTorch, and MXNet.
4. **Kubeflow Pipelines**: A system for managing the end-to-end ML lifecycle.
5. **Katib**: A hyperparameter tuning service to optimize ML models.

**Run a Basic Pipeline**

1. **Upload a Sample Pipeline**:
   * Download a Kubeflow pipeline YAML (e.g., from [Kubeflow samples](https://github.com/kubeflow/pipelines/tree/master/samples)).
   * Use the Kubeflow dashboard to upload the pipeline:
     1. Go to the "Pipelines" section.
     2. Click "Upload pipeline."
     3. Choose the downloaded YAML file.
2. **Create an Experiment**:
   * In the "Experiments" section, create a new experiment.
3. **Run the Pipeline**:
   * Select the uploaded pipeline, set parameters if required, and launch the experiment.
   * Monitor the pipeline execution from the dashboard.