Jenkins pipeline

* a set of Jenkins plugins that support doing continuous delivery in Jenkins.
* an automated process built on these tools. It takes source code through a “pipeline” from the source code creation all the way to production deployment.

How do you Create a Jenkins Pipeline?

* a pipeline is implemented in a file that is kept in source control along with the rest of the application code. This file is called a Jenkinsfile.
* To create a Pipeline, simply create a file called Jenkinsfile and add it to your source control repo.
* When creating the Jenkins project, choose the “Pipeline” or “Multibranch Pipeline” project type.

What Goes in a Jenkinsfile?

* Pipelines has a domain-specific-language (DSL) that is used to define the pipeline logic.
* two styles of Pipeline syntax you can use (you must choose one or the other):
  + Scripted – A bit more like procedural code
  + Declarative – Syntax describes the Pipeline logic

Pipeline Stages

* Pipeline Stages are large pieces of the CD process.
* Pipeline Steps are the individual tasks that make up each stage.
* For example:
* Execute a command
* Copy files to a server
* Restart a service
* Wait for input from a human
* Steps are implemented through special declarative keywords in the Jenkinsfile DSL. Jenkins plugins can add new steps.

Continuous Delivery

* means ensuring that you are always able to deploy any version of your code. It is necessary in Continuous Deployment, where you are actually deploying your code frequently.
* In order to support Continuous Delivery / Deployment with a Jenkins Pipeline, we need use the Pipeline to automate the deployment process.

Automated Deployment in a Pipeline

* Here’s how we can automate deployments in a Pipeline:
  + Define Stages for stages of the CD process that involve deploying:
    - For example, if we have a staging server and a production server, we could implement stages called “Deploy to Staging” and “Deploy to Production”
  + In each deployment stage, define Steps that perform the tasks necessary to carry out the deployment:
    - For example, copy files to a server, restart a service, etc
  + We can also prompt a user for approval before performing the actual production deployment