St. Francis Institute of Technology, Mumbai-400 103
Department Of Information Technology

A.Y. 2024-2025
Class: TE-ITA/B, Semester: V

Subject: **DevOps Lab**

**Experiment – 7: a. To build pipeline of jobs in Jenkins, create a pipeline
script to test and deploy an application.
b. To automatically build a job in Jenkins using webhooks
(Topic Beyond Syllabus)**

1. **Aim:** To build pipeline of jobs in Jenkins, create a pipeline script to test and deploy an application
2. **Objectives:** Aim of this experiment is that, the students will be able
   - To build pipeline of jobs in Jenkins, create a pipeline script to test and deploy an application
3. **Outcomes:** After study of this experiment, the students will be able
   - To understand the importance of Jenkins to Build and deploy Software Applications on server environment.
4. **Prerequisite:** Knowledge of software engineering concept of integration and deployment
5. **Requirements:** Jenkins, JDK, python, Personal Computer, Windows operating system, browser, Internet Connection, Microsoft Word.
6. **Pre-Experiment Exercise:**
   Brief Theory: Refer shared material
7. **Laboratory Exercise**
   A. **Procedure:**
      a. **Answer the following:**
         - What is Jenkins pipeline?
         - What are the different ways to write a Jenkins pipeline?
      b. **Execute following (Refer the shared material) and attach screenshots:**
         - Create and build pipeline project with Git
         - Create and build pipeline project with pipeline script
         - Create and automatically build a pipeline project using webhooks

8. **Post-Experiments Exercise**
   A. **Extended Theory:**
      Nil
   B. **Questions:**
      - Explain the types of agents in a Jenkinsfile?
      - What are webhooks?
   C. **Conclusion:**
      - Write what was performed in the experiment.
      - Write the significance of the topic studied in the experiment.
   D. **References:**
      https://jenkins.io/doc/
      https://www.jenkins.io/doc/book/pipeline/syntax/
      https://www.edureka.co/blog/jenkins-pipeline-tutorial-continuous-delivery

https://www.slideshare.net/abediaz/introduction-to-jenkins
https://www.slideshare.net/jph98/jenkins-ci-presentation