

*DEPARTMENT OF INFORMATION TECHNOLOGY* Experiment No6

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| **Semester** | Semester VIII | | |
| **Subject** | DevOps Lab | | |
| **Subject Professor In-charge** | Prof. Yash Shah | | |
| **Laboratory** | L11B | | |
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| **Experiment Number** | 6 | |
| **Experiment Title** | To carry out pipelining through Jenkins | |
| **Resources / Apparatus Required** | Hardware:  Compatible Computer System | Java Development Kit (JDK) v.11 |
| **Objectives** | Explore and implement pipelines and GUI pipelines on Jenkins | |

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| **Theory** | **What is jenkins?**  Jenkins is an open source Continuous Integration server capable of orchestrating a chain of actions that help to achieve the Continuous Integration process (and not only) in an automated fashion.  Jenkins is a widely used application around the world that has around 300k installations and growing day by day.  **Need of Jenkins:**  The reason Jenkins became so popular is that of its monitoring of repeated tasks which arise during the development of a project. For example, if your team is developing a project, Jenkins will continuously test your project builds and show you the errors in early stages of your development.  By using Jenkins, software companies can accelerate their software development process, as Jenkins can automate build and test at a rapid rate. Jenkins supports the complete development lifecycle of software from building, testing, documenting the software, deploying and other stages of a software development lifecycle.  **Installation steps:**   1. **Double-click on unzipped jenkins.msi. You can also Jenkin using a WAR (Web application ARchive) but that is not recommended.**   IMG_256   1. In the Jenkin Setup screen, click Next.   IMG_256   1. Choose the location where you want to have the Jenkins instance installed (default location is C:\Program Files (x86)\Jenkins), then click on ****Next**** button.   IMG_256   1. Click on the Install button.   IMG_256   1. Once install is complete, click Finish. 2. After completing the Jenkins installation process, a browser tab will pop-up asking for the initial Administrator password. To access Jenkins, you need to go to browse the following path in your web browser.   http://localhost:8080  If you can access the above URL, then it confirms that Jenkins is successfully installed in your system.  IMG_256   1. The initial Administrator password should be found under the Jenkins installation path (set at Step 4 in Jenkins Installation).   For default installation location to C:\Program Files (x86)\Jenkins, a file called ****initialAdminPassword**** can be found under C:\Program Files (x86)\Jenkins\secrets.  However, If a custom path for Jenkins installation was selected, then you should check that location for ****initialAdminPassword**** file.  IMG_256   1. Open the highlighted file and copy the content of the ****initialAdminPassword****file.   IMG_256   1. Paste the password it into browser's pop-up tab ([http://localhost:8080/login?form=%2F](http://localhost:8080/login?form=/)) and click on Continue button.   IMG_256   1. Click on the "Install suggested plugins button" so Jenkins will retrieve and install the essential plugins   IMG_256   1. Jenkins will start to download and install all the necessary plugins needed to create new Jenkins Jobs. |
| **Output** | Implementation of the following pipeline:  Screenshot (350)   1. Create 8 new projects by clicking on New Item on the Dashboard   Screenshot (351)   1. In order to create Pipeline from first module, click on Configure, and add ‘Build other projects’ in Post-Build Actions   Screenshot (352)   1. Similarly, Post-Build actions for Module 2, 3, 4 and 5 respectively.   Screenshot (353)  Screenshot (354)    Screenshot (356)   1. Build now Module 1 and Build Pipeline view      1. Select Initial job   Screenshot (360)   1. Run Pipeline   Screenshot (361)  Screenshot (362) |
| **Conclusion** | Thus, we have implemented pipelining using jenkins and created pipeline GUI to jenkins. |