Computer Science & Information Systems

**DevOps – Lab Tutorial1- M3**

**(M3: Source Code Management)-**

This lab sheet needs to be administered along with Module 3: GIT

1. Objective:

In this lab tutorial we will get overview of GIT and learn basic GIT operation.

Primary use of GIT is for "Source Code Management" in Software Development; however this solution is well applied to track changes to set of ordinary files too.

So in other way we can call GIT as "Distributed Version Control System".

This tutorial will help to create and manage repository by performing actions like initialize GIT, Push and Pull activity within local and remote repository.

1. Pre-requisite:

* Study of Module3



* GIT installations
* GitHub Account Registration
* [View the tutorial given below.](https://docs.github.com/en/get-started/learning-to-code/getting-started-with-git)

[Getting started with Git - GitHub Docs](https://docs.github.com/en/get-started/learning-to-code/getting-started-with-git)

1. Steps to be Performed:

**GitHub Account registration:**

* Step 1: Sign-up for github account at <https://github.com>

*Note: [Use your preferred email address]*

**Creation of Project / Repository**

* Step1: Name the Project
* Step2: Add description to the Project
* Step3: Select the Project to be a Public
* Step4: Check the Box for initialize an empty repository and clone on your local machine
* Step5: Observe the created repository – Check readme.md file
* Step6: Upload Code files to the repository

**GIT Operations**

* Step1: Edit any file
* Step2: Propose changes to the file with GIT Branching Options
* Step3: Verify changes to the file on Local Repository
* Step4: Commit changes to the pull request with different merge options
* Step5: Open GitHub Desktop and Pull the changes from remote
* Step6: Verify files on Local Repository for changes

1. Outputs/Results:

As an output of this lab tutorial students will gain the knowledge learning of GIT basics and branching & merging operations. Also will help to understand local and remote server repository.

This tutorial will help on building a GIT repository and one can perform Add, Commit, Branch and Merge Functionality of GIT.

1. Observations:

The students will understand the GIT basic operational commands and observe the process through GitHub Desktop application and GIT bash command line.

1. References:

* <https://git-scm.com/>
* https://www.atlassian.com/git/tutorials/comparing-workflows
* Refer Chapter 2 and 14 of Continuous Delivery: Reliable Software Releases through Build, Test, and Deployment Automation by Jez Humble, David Farley. Publisher: Addison Wesley, 2011