**Dharmsinh Desai University**

**MCA SEM-II**

**DATA STRUCTURE WITH C**

**Assignment Submission**

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***Documentation of GIT AND GITHUB***

* **What is GIT ?**

--> **Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency**

**--> Git is a distributed peer-peer version control system. Each node in the network is a peer, storing entire repositories which can also act as a multi-node distributed back-ups.**

**--> There is no specific concept of a central server although nodes can be head-less or 'bare', taking on a role similar to the central server in centralized version control systems.**

* **Advantages :-**

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| **1.**Free and open source |
| **2.**Fast and small |
| **3.**Implicit backup |
| **4.**Security |
| **5.**No need of powerful hardware |
| **6.**Easier branching |

* ***Basic Workflow of Git***

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| **Step 1 :** | **You modify a file from the working directory.** |
| **Step 2 :** | **You add these files to the staging area.** |
| **Step 3 :** | **You perform commit operation that moves the files from the staging area. After push operation, it stores the changes permanently to the Git repository.** |

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* **What is GITHUB ?**

**-->** GitHub is a web-based Git repository hosting service, which offers all of the distributed revision control and source code management (SCM) functionality of Git as well as adding its own features.

--> Github provides access control and several collaboration features such as wikis, task management, and bug tracking and feature requests for every project.

--> You do not need GitHub to use Git.

--> GitHub (and any other local, remote or hosted system) can all be peers in the same distributed versioned repositories within a single project.

**-->Github allows you to:**

* Share your repositories with others.
* Access other user's repositories.
* Store remote copies of your repositories (github servers) as backup of your local copies.
* Advantages :-

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| 1. It makes it easy to contribute to your open source projects |
| 2. Documentation |
| 3. Showcase your work |
| 1. Markdown |
| 1. GitHub is a repository |
| 1. Track changes in your code across versions |
| 1. Integration options |

**--->Workflow of GitHub:-**

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* **Difference Between Git and GitHub :-**

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| **diff** |

--> Github document the changes and reflect them in an organized manner to avoid any chaos between any of the files uploaded.

--> Therefore using GitHub centralized repository, it avoids all the confusion and working on the same code becomes very easy.

**Basic Commands of Git**

1. **git config --global user.name “hardilundavia”**

--> this command is used for connecting git to github username

1. **--global**

--> it is used for global repositaries

--> private is for private repositaries

1. **git config --global user.email [hardil.undavia@gmail.com](mailto:hardil.undavia@gmail.com)**

--> this command is used for configuration of email on github

1. **git clone <http://github.com/hardilundavia/datastructuree.git>**

--> : git clone is create working copy of local repository

1. **git add test.txt**

--> add one or more files to staging index

1. **git status**

--> list the files you have changed

1. **git commit -m “comments” test.txt**

--> commit changes to head(-m for comments line)

1. **git push -u origin master**

--> send changes to the master branch of your remote repository

***Steps for accessing github repository by git commands***

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