



DevOps

Version Control Assignment 1

Name: Suhani Bhatia

SapId: 500105647

Roll No.: R2142220364

Program: B.Tech[CSE]

Batch: CCVT -B2

Submission to:

Prof: Prateek Raj Gautam

Introduction:

Version Control Systems (VCS) are essential for managing code changes in software development. They help teams collaborate efficiently by tracking modifications, managing different versions, and ensuring data integrity. This assignment focuses on two popular version control systems: **Subversion (SVN)** and **Mercurial (Hg)**.

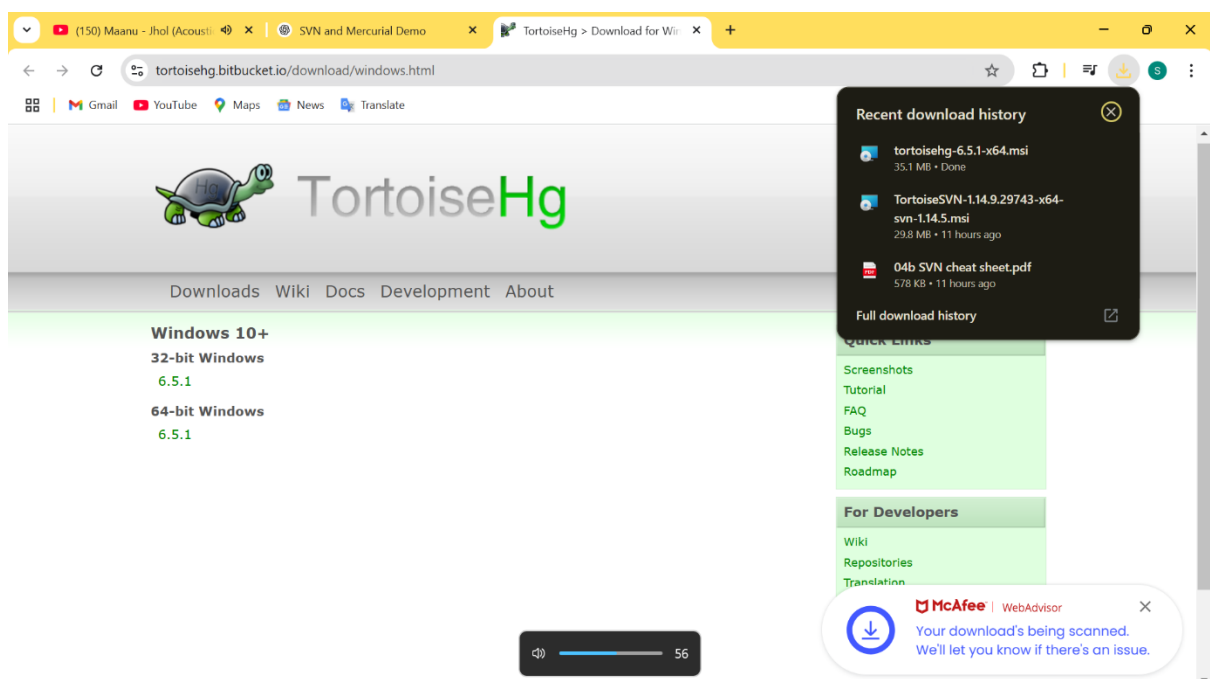
Subversion (SVN) is a **centralized version control system** (CVCS) where all changes are tracked in a single central repository. It is widely used for enterprise projects that require a structured workflow and controlled access.

Mercurial (Hg) is a **distributed version control system** (DVCS) that allows every user to have a complete copy of the repository. It is known for its simplicity, speed, and efficiency in managing large-scale projects.

This assignment provides a hands-on demonstration of **installing, setting up, and using SVN and Mercurial** on Windows, covering essential commands, workflows, and a comparison between both systems.

2. Installing Subversion and Mercurial

Before using SVN and Mercurial, you need to install them on your system.



After installation, verify them by running:

```
Windows PowerShell
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\bhati> svn --version
svn, version 1.14.5 (r1922182)
  compiled Nov 30 2024, 08:20:48 on x86-microsoft-windows

Copyright (C) 2024 The Apache Software Foundation.
This software consists of contributions made by many people;
see the NOTICE file for more information.
Subversion is open source software, see http://subversion.apache.org/

The following repository access (RA) modules are available:

* ra_svn : Module for accessing a repository using the svn network protocol.
  - with Cyrus SASL authentication
  - handles 'svn' scheme
* ra_local : Module for accessing a repository on local disk.
  - handles 'file' scheme
* ra_serf : Module for accessing a repository via WebDAV protocol using serf.
  - using serf 1.3.10 (compiled with 1.3.10)
  - handles 'http' scheme
  - handles 'https' scheme

The following authentication credential caches are available:

* Wincrypt cache in C:\Users\bhati\AppData\Roaming\Subversion

PS C:\Users\bhati> hg --version
Mercurial Distributed SCM (version 6.5.1)
(see https://mercurial-scm.org for more information)

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warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```

Step 2: Setting Up SVN

-Create a New Repository

```
Windows PowerShell

PS C:\Users\bhati> svn --version
svn, version 1.14.5 (r1922182)
  compiled Nov 30 2024, 08:20:48 on x86-microsoft-windows

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warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
PS C:\Users\bhati> svnadmin create my_svn_repo
PS C:\Users\bhati>
```

-Checkout a Repository

```
PS C:\Users\bhati\my_project\my_repo> svn checkout file:///path/to/my_svn_repo my_local_copy
svn: E170013: Unable to connect to a repository at URL 'file:///path/to/my_svn_repo'
svn: E180001: Unable to open repository 'file:///path/to/my_svn_repo'
PS C:\Users\bhati\my_project\my_repo> svnadmin create C:\svn_repo
PS C:\Users\bhati\my_project\my_repo> svn checkout file:///C:/svn_repo C:\Users\bhati\my_project\my_repo
Checked out revision 0.
PS C:\Users\bhati\my_project\my_repo> |
```

-Basic SVN Workflow

```
Windows PowerShell
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PS C:\Users\bhati> cd C:\Users\bhati\my_project\my_repo\my_local_copy
PS C:\Users\bhati\my_project\my_repo\my_local_copy> echo "Hello SVN" > file.txt
PS C:\Users\bhati\my_project\my_repo\my_local_copy> svn add file.txt
svn: E150000: Can't find parent directory's node while trying to add 'C:\Users\bhati\my_project\my_repo\my_local_copy\file.txt'
svn: E155010: The node 'C:\Users\bhati\my_project\my_repo\my_local_copy' was not found.
PS C:\Users\bhati\my_project\my_repo\my_local_copy> svn commit -m "Added file.txt"
svn: E200009: Commit failed (details follow):
svn: E200009: 'C:\Users\bhati\my_project\my_repo\my_local_copy' is not under version control
PS C:\Users\bhati\my_project\my_repo\my_local_copy> cd C:\Users\bhati\my_project\my_repo
PS C:\Users\bhati\my_project\my_repo> echo "Hello SVN" > file.txt
PS C:\Users\bhati\my_project\my_repo> svn add file.txt
A (bin) file.txt
PS C:\Users\bhati\my_project\my_repo> svn commit -m "Initial commit"
Adding (bin) file.txt
Transmitting file data .done
Committing transaction...
Committed revision 1.
PS C:\Users\bhati\my_project\my_repo>
```

Step 3: Setting Up Mercurial

-Initialize a Mercurial Repository

```
Committed revision 1.
PS C:\Users\bhati\my_project\my_repo> hg init my_hg_repo
PS C:\Users\bhati\my_project\my_repo> cd my_hg_repo
PS C:\Users\bhati\my_project\my_repo\my_hg_repo>
```

-Add and Commit Files

```
Windows PowerShell
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PS C:\Users\bhati> cd C:\Users\bhati\my_project\my_repo\my_local_copy
PS C:\Users\bhati\my_project\my_repo\my_local_copy> echo "Hello SVN" > file.txt
PS C:\Users\bhati\my_project\my_repo\my_local_copy> svn add file.txt
svn: E150000: Can't find parent directory's node while trying to add 'C:\Users\bhati\my_project\my_repo\my_local_copy\file.txt'
svn: E150010: The node 'C:\Users\bhati\my_project\my_repo\my_local_copy' was not found.
PS C:\Users\bhati\my_project\my_repo\my_local_copy> svn commit -m "Added file.txt"
svn: E200009: Commit failed (details follow):
svn: E200009: 'C:\Users\bhati\my_project\my_repo\my_local_copy' is not under version control
PS C:\Users\bhati\my_project\my_repo\my_local_copy> cd C:\Users\bhati\my_project\my_repo
PS C:\Users\bhati\my_project\my_repo> echo "Hello SVN" > file.txt
PS C:\Users\bhati\my_project\my_repo> svn add file.txt
A (bin) file.txt
PS C:\Users\bhati\my_project\my_repo> svn commit -m "Initial commit"
Adding (bin) file.txt
Transmitting file data .done
Committing transaction...
Committed revision 1.
PS C:\Users\bhati\my_project\my_repo> hg init my_hg_repo
PS C:\Users\bhati\my_project\my_repo> cd my_hg_repo
PS C:\Users\bhati\my_project\my_repo\my_hg_repo> echo "Hello Mercurial" > file.txt
PS C:\Users\bhati\my_project\my_repo\my_hg_repo> hg add file.txt
PS C:\Users\bhati\my_project\my_repo\my_hg_repo> hg commit -m "Initial commit"
PS C:\Users\bhati\my_project\my_repo\my_hg_repo> |
```

-Self-host Mercurial

```
date:      Sat Feb 15 23:54:28 2025 +0530
summary:   Initial commit

PS C:\Users\bhati\my_project\my_repo\my_hg_repo> hg serve --port 8000
PS C:\Users\bhati\my_project\my_repo\my_hg_repo> cd my_project
cd : Cannot find path 'C:\Users\bhati\my_project\my_repo\my_hg_repo\my_project' because it does not exist.
At line:1 char:1
+ cd my_project
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (C:\Users\bhati\...repo\my_project:String) [Set-Location], ItemNotFoundException
+ FullyQualifiedErrorId : PathNotFound,Microsoft.PowerShell.Commands.SetLocationCommand

PS C:\Users\bhati\my_project\my_repo\my_hg_repo> cd my_project
cd : Cannot find path 'C:\Users\bhati\my_project\my_repo\my_hg_repo\my_project' because it does not exist.
At line:1 char:1
+ cd my_project
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (C:\Users\bhati\...repo\my_project:String) [Set-Location], ItemNotFoundException
+ FullyQualifiedErrorId : PathNotFound,Microsoft.PowerShell.Commands.SetLocationCommand

PS C:\Users\bhati\my_project\my_repo\my_hg_repo> cd my_dev
cd : Cannot find path 'C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev' because it does not exist.
At line:1 char:1
+ cd my_dev
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (C:\Users\bhati\...hg_repo\my_dev:String) [Set-Location], ItemNotFoundException
+ FullyQualifiedErrorId : PathNotFound,Microsoft.PowerShell.Commands.SetLocationCommand

PS C:\Users\bhati\my_project\my_repo\my_hg_repo> cd my_dev
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev> hg init my_dev
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev> cd my_dev
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev> git init
Initialized empty Git repository in C:/Users/bhati/my_project/my_repo/my_hg_repo/my_dev/my_dev/.git/
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev> git clone https://github.com/bhatiasuhani/SVN-Mercurial-Demo.git
Cloning into 'SVN-Mercurial-Demo'...
```

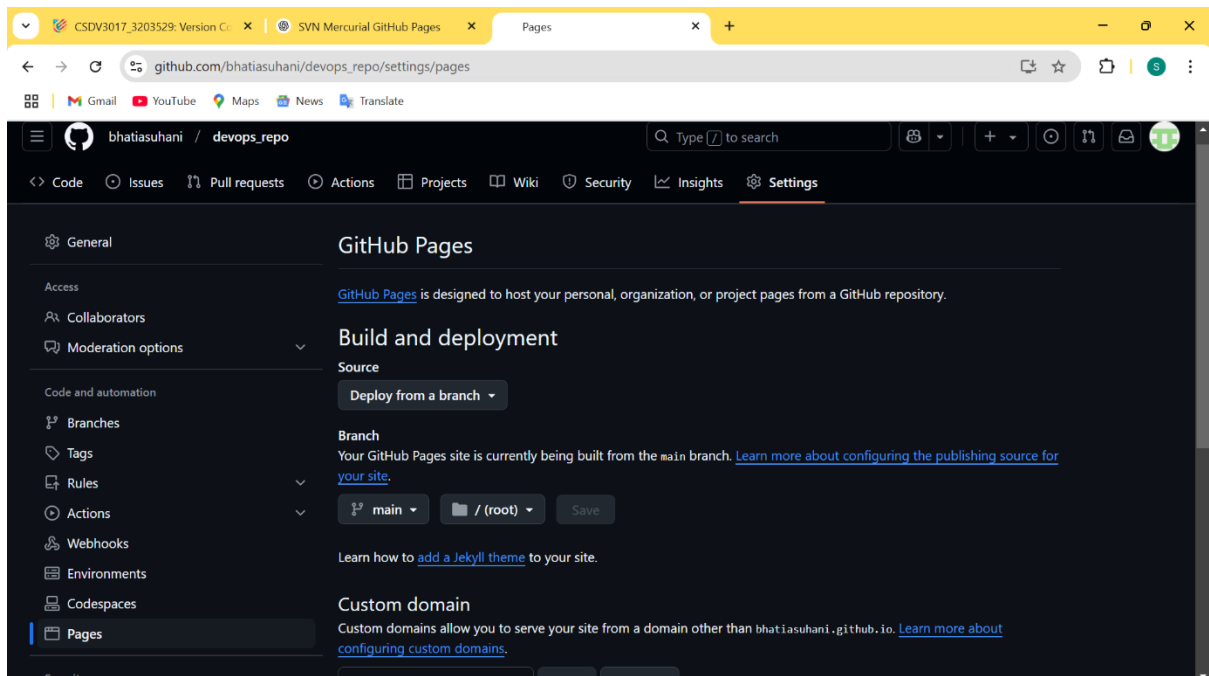
3. Creating a GitHub Repo & Hosting on GitHub Pages

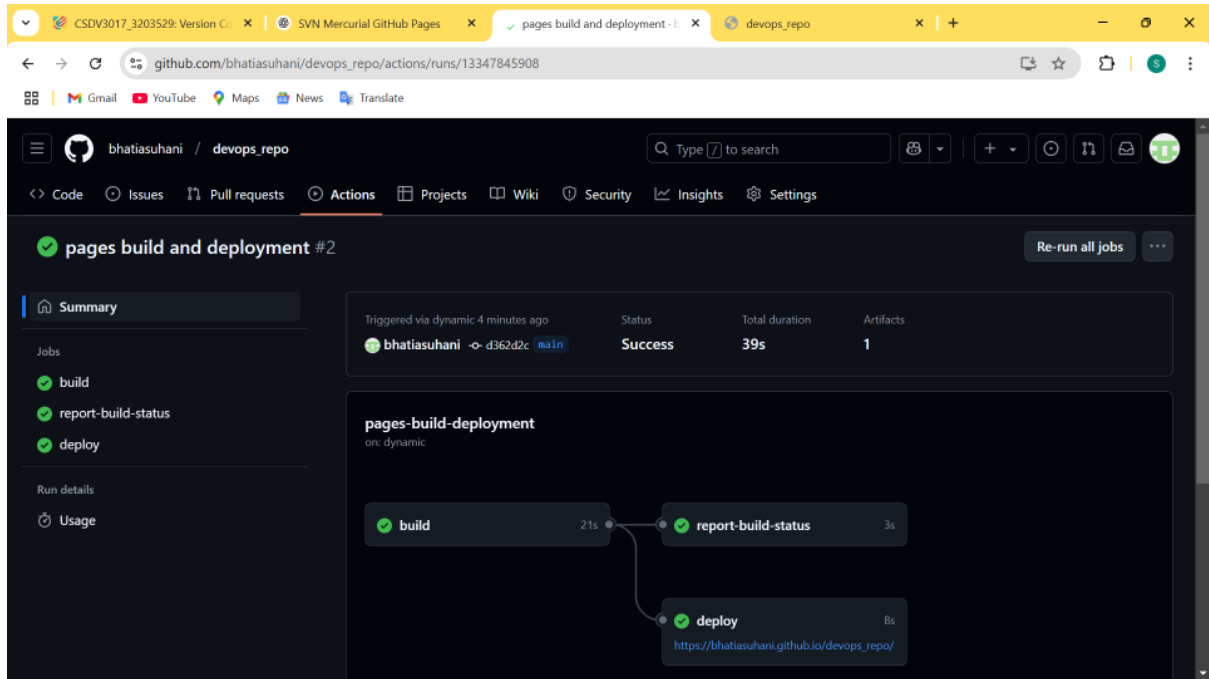
```
Windows PowerShell
Cloning into 'SVN-Mercurial-Demo'...
remote: Repository not found.
fatal: repository 'https://github.com/bhatiasuhani/SVN-Mercurial-Demo.git/' not found
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev> https://github.com/bhatiasuhani/devops_repo.git
https://github.com/bhatiasuhani/devops_repo.git : The term 'https://github.com/bhatiasuhani/devops_repo.git' is not recognized as
the name of a cmdlet, function, script file, or operable program. Check the spelling of the name, or if a path was included, verify
that the path is correct and try again.
At line:1 char:1
+ https://github.com/bhatiasuhani/devops_repo.git
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (https://github....devops_repo.git:String) [], CommandNotFoundException
+ FullyQualifiedErrorId : CommandNotFoundException

PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev> git https://github.com/bhatiasuhani/devops_repo.git
git: 'https://github.com/bhatiasuhani/devops_repo.git' is not a git command. See 'git --help'.
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev> git clone https://github.com/bhatiasuhani/devops_repo.git
Cloning into 'devops_repo'...
warning: You appear to have cloned an empty repository.
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev> cd devops_repo
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev\devops_repo> echo "# SVN & Mercurial Demo" > README.md
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev\devops_repo> git add .
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev\devops_repo> git commit -m "Initial commit"
[main (root-commit) 65c81b1] Initial commit
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 README.md
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev\devops_repo> git push origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 12 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 261 bytes | 43.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/bhatiasuhani/devops_repo.git
 * [new branch]      main -> main
PS C:\Users\bhati\my_project\my_repo\my_hg_repo\my_dev\my_dev\devops_repo> |
```

Step 3: Enable GitHub Pages

- Go to Repo → Settings → Pages
- Set the source to **main** branch and save.





Copy the URL shown there.

https://bhatiasuhani.github.io/devops_repo/

Your GitHub Pages site will be available at:

