Name – Uday Surothiya

SAP – 500107424

Batch – 1

ASSIGNMENT – 1

Aim - Demonstrate usage of Subversion, Mercurial with commands, explaination, and screenshots/screen recordings.

Subversion (SVN)

Apache Subversion (often referred to as SVN) is a version control system that allows you to manage and track changes to

your files and directories over time. Below is a step-by-step guide to install and use Subversion.

Step 1 Install Apache Subversion

Step 2 Install Subversion using nix

```
uday@UDAY:~$ nix-shell -p subversion subversionClient tkrev
these 18 paths will be fetched (19.80 MiB download, 106.60 MiB unpacked):
  /nix/store/a2rd9c2alpshcwywmg3dyy65l75z5cvv-apr-1.7.5
  /nix/store/kxvzpki3bnnvbfrw0fhwzlscg3jx53jm-apr-util-1.6.3
  /nix/store/hyf3lzcg99nya87sjjynrmy8cqsra4d4-cyrus-sasl-2.1.28
  /nix/store/ncl5v0klng806w2gkgjmzxvgywjh04kv-db-5.3.28
  /nix/store/r72kpxpgqllixl9ida2b1qqpmmwqhixs-libsodium-1.0.20
  /nix/store/1254mlvwv7sxhk7ak0md48pr1jcmrdks-libtool-2.5.4-lib
  /nix/store/l8g9s6nr2ggjk14k9vbqd75mrizgl9p1-openldap-2.6.9
  /nix/store/lnbi98k11qgx5niss9yswkjk5czrkyiw-perl-5.40.0
  /nix/store/jg6xqqq67y5r0xrl9yryks9q639sd756-serf-1.3.10
  /nix/store/px12v45rkl1i9lyss79bfrz0f1kxlfr7-subversion-1.14.5
  /nix/store/64y41ndwai6yc630648n776g1ihla000-subversion-1.14.5-dev
  /nix/store/aqaiffy88ldpwmyc0x64i47krx381sxm-subversion-client-1.14.5
  /nix/store/smz9yl9j963gnvxy4npy0bfgxmysfzsh-subversion-client-1.14.5-dev
  /nix/store/9k3b99fq4kf5fd9yard9m2i1a6mspmff-tcl-8.6.15
  /nix/store/72xws52x5j4dj6yxv1a869xf7hxwkcbx-tk-8.6.15
```

Step 3 Create a Local Repository

1. Create a directory for your repository:
    Cmd => mkdir ~/svn_repo

2. Initialize the repository:

        Cmd => Svn admin create ~/svn_repo/my_project

Start SVN Server (Optional)

If you want remote access to the repository:

1. Start the SVN server (using svnserve)

svnserve -d -r ~/svn_repo

This starts the server in daemon mode, making repositories available at

svn : // /my_project

```
uday@UDAY:~$ sudo svnserve -d -r /var/svn/repos
svnserve: E000098: Can't bind server socket: Address already in use
uday@UDAY:~$ ps aux | grep svnserve
uday        5375  0.0  0.0  16552  1412 ?        Ss   13:19   0:00 svnserve -d -
r /home/uday/svn_repo
uday        7732  0.0  0.0   9212  2432 pts/0    S+   14:22   0:00 grep --color=
auto svnserve
uday@UDAY:~$
```

3. Basic SVN Commands

Checkout a Repository

To get a working copy of the repository:

```
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment$ svn checkout file:///home/
uday/svn_repo/my_project
Checked out revision 0.
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment$ ls
my_project
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment$
```

Add Files to the Repository

1. Navigate to your working directory:

cd my_project

2. Add new files:

svn add file .txt

3. Commit the changes:

svn commit -m "Added file .txt"

```
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/my_project$ nano file.txt
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/my_project$ cat file.txt
hii!
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/my_project$ svn add file.tx
t
A         file.txt
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/my_project$
```

```
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/my_project$ svn commit -m "
Added file.txt"
Adding         file.txt
Transmitting file data .done
Committing transaction...
Committed revision 1.
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/my_project$
```

Update Your Copy

To sync with the latest changes in the repository:

Check Status

To see the status of your working copy:

Delete Files

1. Remove a file from the repository:

svn delete file. txt

2. Commit the changes:

svn commit -m "Deleted file .txt"

4. Access Control (Optional)

Edit

svnserve. conf

1. Open the configuration file:

nano ~/svn repo/my_project/conf/svnserve.conf

2. Enable authentication by setting:

```
### Visit http://subversion.apache.org/ for more information.

[general]
### The anon-access and auth-access options control access to the
### repository for unauthenticated (a.k.a. anonymous) users and
### authenticated users, respectively.
### Valid values are "write", "read", and "none".
### Setting the value to "none" prohibits both reading and writing;
### "read" allows read-only access, and "write" allows complete
### read/write access to the repository.
### The sample settings below are the defaults and specify that anonymous
### users have read-only access to the repository, while authenticated
### users have read and write access to the repository.
 anon-access = read
 auth-access = write
 password-db = passwd
### The password-db option controls the location of the password
### database file.  Unless you specify a path starting with a /,
### the file's location is relative to the directory containing
### this configuration file.
### If SASL is enabled (see below), this file will NOT be used.

^G Help        ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit        ^R Read File ^\ Replace   ^U Paste     ^J Justify   ^/ Go To Line
```

3. Edit the passwd

```
uday@UDAY:~$ sudo nano /var/svn/repos/myrepo/conf/passwd
uday@UDAY:~$
```

```
[users]
# harry = harryssecret
# sally = sallyssecret
alice = alicepassword
bob = bobpassword
```

Step 5: Start svnserve

Start the svnserve daemon:

sudo svnserve -d -r /var/svn/repos

The –d flag runs it in daemon mode, and specifies the root directory for repositories.

Task 1: Check Out a Repository

To check out the repository to your local machine:

svn checkout svn://localhost/myrepo --username alice

Task 2: Add Files to the Repository

Create a new file and add it to the repository:

Task 3: Update Your Working Copy

To update your working copy with the latest changes:

svn update

Task 4: View Repository Status

Check the status of your working copy:

svn status

Task 5: View Change History

View the commit history of the repository:

svn log

1. Creating trunk on the Server Side

If you have direct access to the SVN server (e.g., via SSH or file system access), you can create the

directly in the repository.

Steps:

1. Access the SVN Repository Directory:

• Navigate to the directory where your SVN repository is stored on the server. For example:

cd /path/to/svn/repositories/myrepo

directory has been created:

MERCURIAL Commands

Command	Description
`hg init`	Initialize a new Mercurial repository in the current directory.
`hg clone`	Clone a remote repository to your local machine.
`hg status`	Show the status of files in the working directory (tracked, untracked, etc.).
`hg add`	Start tracking a file in the repository.
`hg commit -m "message"`	Commit changes to the repository with a message.
`hg push`	Push local changes to a remote repository.
`hg pull`	Fetch changes from a remote repository.
`hg update`	Update the working directory to a specific commit or branch.
`hg log`	View the commit history.
`hg diff`	Show differences between the working directory and the last commit.
`hg branch`	Create or switch to a branch.
`hg merge`	Merge changes from another branch.

3. Example

1. Initialize a Repository:

2. Add Files:

3. Commit Changes:

```
uday@UDAY:~$ sudo apt-get install mercurial
[sudo] password for uday:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  mercurial-common
Suggested packages:
  kdiff3 | kdiff3-qt | kompare | meld | tkcvs | mgdiff qct python3-mysqldb
  python3-openssl python3-pygments wish
The following NEW packages will be installed:
  mercurial mercurial-common
0 upgraded, 2 newly installed, 0 to remove and 6 not upgraded.
Need to get 3,226 kB of archives.
After this operation, 15.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 mercurial-common
all 6.1.1-1ubuntu1 [2,906 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 mercurial amd64 6
.1.1-1ubuntu1 [320 kB]
Fetched 3,226 kB in 7s (461 kB/s)
Selecting previously unselected package mercurial-common.
(Reading database ... 226779 files and directories currently installed.)
Preparing to unpack .../mercurial-common_6.1.1-1ubuntu1_all.deb ...
Unpacking mercurial-common (6.1.1-1ubuntu1) ...
Selecting previously unselected package mercurial.
Preparing to unpack .../mercurial_6.1.1-1ubuntu1_amd64.deb ...
Unpacking mercurial (6.1.1-1ubuntu1) ...
Setting up mercurial-common (6.1.1-1ubuntu1) ...
Setting up mercurial (6.1.1-1ubuntu1) ...

Creating config file /etc/mercurial/hgrc.d/hgext.rc with new version
Processing triggers for man-db (2.10.2-1) ...
uday@UDAY:~$
```

```
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg init
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ nano file.t
xt
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg status
? file.txt
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg add file
.txt
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg status
A file.txt
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg commit -
m "file added"
abort: no username supplied
(use 'hg config --edit' to set your username)
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg config -
-edit

Select an editor.  To change later, run 'select-editor'.
  1. /bin/nano        <---- easiest
  2. /usr/bin/vim.tiny
  3. /usr/bin/code
  4. /bin/ed

Choose 1-4 [1]: 1
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg commit -
m "file added"
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg log
changeset:   0:1cb99b1d66db
tag:         tip
user:        uday
date:        Sun Feb 16 18:17:35 2025 +0530
summary:     file added
```

```
  GNU nano 6.2                      /home/uday/.hgrc *
# example user config (see 'hg help config' for more info)
[ui]
# name and email, e.g.
# username = Jane Doe <jdoe@example.com>
username = uday

# We recommend enabling tweakdefaults to get slight improvements to
# the UI over time. Make sure to set HGPLAIN in the environment when
# writing scripts!
# tweakdefaults = True

# uncomment to disable color in command output
# (see 'hg help color' for details)
# color = never

# uncomment to disable command output pagination
# (see 'hg help pager' for details)
# paginate = never

[extensions]
                              [ Read 26 lines ]
^G Help       ^O Write Out ^W Where Is  ^K Cut        ^T Execute   ^C Location
^X Exit       ^R Read File ^\ Replace   ^U Paste      ^J Justify   ^/ Go To Line
```

As username was not defined we had to assign it first

Now here we create and merge branch

```
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg branch
main
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg branches
main                           1:7afc01a32517
default                        0:1cb99b1d66db (inactive)
```

Here we check difference between branches

```
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg branches
main                           1:7afc01a32517
default                        0:1cb99b1d66db (inactive)
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg branch
temp
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ nano file1.
txt
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg add file
1.txt
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg commit -
m "message"
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg branches
temp                           2:c19e1755235c
main                           1:7afc01a32517
default                        0:1cb99b1d66db (inactive)
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ ls
file1.txt  file.txt
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg diff -r
temp:main
diff -r c19e1755235c -r 7afc01a32517 file1.txt
--- a/file1.txt Sun Feb 16 18:32:09 2025 +0530
+++ b/file1.txt Sun Feb 16 18:22:39 2025 +0530
@@ -1,1 +1,1 @@
-asjfn
+d
```

Here we finally merge them into one and the other branch is now inactive

```
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg update m
ain
0 files updated, 0 files merged, 0 files removed, 0 files unresolved
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg merge te
mp
abort: merging with a working directory ancestor has no effect
uday@UDAY:~/Desktop/college-ubuntu/devops/assignment/mercurial/repo$ hg branches
main                           3:635a8d8fd7d8
temp                           2:c19e1755235c (inactive)
default                        0:1cb99b1d66db (inactive)
```