Lab Exercise 5- Generate and Use SSH Key with Git and GitHub

NAME-Manish kumar

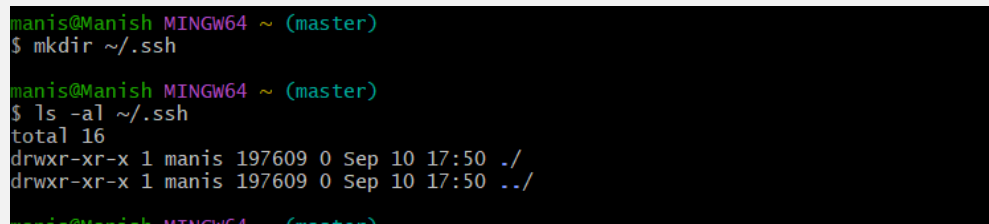**Batch- 2(DevOps)**

SAP ID-500119723

Objective:

To learn how to generate an SSH key, add it to GitHub, and use it to securely connect and push

code without repeatedly entering a password.

Step 1 – Check for Existing SSH Keys

Run:

```
ls -al ~/.ssh
```


Look for files like id_rsa and id_rsa.pub. If they exist, you may already have an SSH key.

Step 2 – Generate a New SSH Key

Run:

ssh-keygen -t rsa -b 4096 -C your_email@example.com

```
manis@Manish MINGW64 ~ (master)
$ ssh-keygen -t rsa -b 4096 -C manishkumar133144@gmail.com
Generating public/private rsa key pair.
Enter file in which to save the key (/c/Users/manis/.ssh/id_rsa):
Enter passphrase for "/c/Users/manis/.ssh/id_rsa" (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /c/Users/manis/.ssh/id_rsa
Your public key has been saved in /c/Users/manis/.ssh/id_rsa.pub
The key fingerprint is:
```

- **-t rsa** → key type

- **-b 4096** → key length

- **-C** → comment (your GitHub email)

Step 3 – Start the SSH Agent

eval "$(ssh-agent -s)"

```
manis@Manish MINGW64 ~ (master)
$ eval "$(ssh-agent -s)"
Agent pid 1415
```

Step 4 – Add SSH Key to the Agent

ssh-add ~/.ssh/id_rsa

```
manis@Manish MINGW64 ~ (master)
$ ssh-add ~/.ssh/id_rsa
Identity added: /c/Users/manis/.ssh/id_rsa (manishkumar133144@gmail.com)
```


Step 5 – Add SSH Key to GitHub

1. Copy the public key:

```
cat ~/.ssh/id_rsa.pub
```

```
manis@Manish MINGW64 ~ (master)
$ cat ~/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAACAQCYZwlyUVQhmUWO/hVD9O/dxPiBM19qWqPNdsObYK3oDHHWhKQvA49qu7xIal3cOOT
sad1pfm5WnknCb9i4ozVu40Jdg/5mJnQZaEejWq+r7qkUfMQTLGdYRfErdy10RVBe95ZCGSK4iuDOqiyP9zS857Ux4PhEOQgAYuCSxC
g23bfjXQdpLAO/k3U6vxgus133aWspCEYbXb+TxhdnoEQbEWhOMiez1+wfQL4vg1P+SjA3byUhPdRuCQc4ptYyVS40NO3iUDlfxFaME
```

2. Log in to GitHub → **Settings** → **SSH and GPG Keys** → **New SSH key**.

3. Paste the key and save.
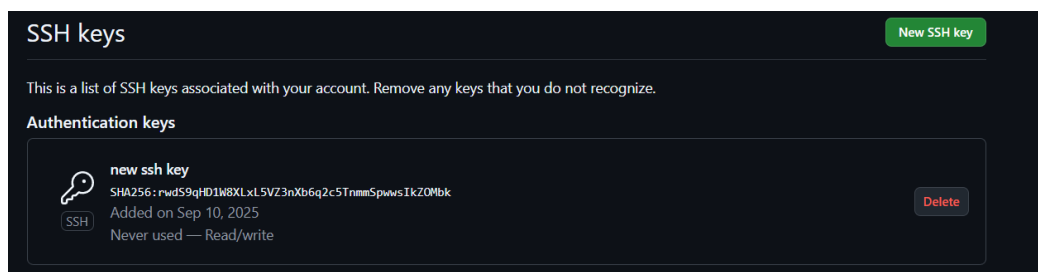
Step 6 – Test SSH Connection

```
ssh -T git@github.com
```

```
manis@Manish MINGW64 ~ (master)
$ ssh -T git@github.com
The authenticity of host 'github.com (20.207.73.82)' can't be established.
ED25519 key fingerprint is SHA256:+DiY3wvvV6TuJJhbpZisF/zLDA0zPMSvHdkr4UvCOqU.
This key is not known by any other names.
```

Step 7 – Use SSH to Clone a Repository

```
git clone git@github.com:<username>/<repository>.git
```

Now you can pull and push without entering your username/password.

```
manis@Manish MINGW64 ~ (master)
$ git clone  https://github.com/manish133144/devops-lab.git
Cloning into 'devops-lab'...
warning: You appear to have cloned an empty repository.

manis@Manish MINGW64 ~ (master)
```