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Subject: Open Source Software for Science, Business and Management.

Repository creation, adding files into repository:

I used this comment to create new repository

Taken from: <https://github.com/syedsultan/syedimranimam>

```
echo "# syedimranimam" >> README.md
git init
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/syedsultan/syedimranimam.git
git push -u origin master
```

First, I install Git on both machines. I can install Git from the packages already available via the repos or your distros, or you can do it manually.

```
sudo apt-get install git-core
```

Then add a user for Git.

```
sudo useradd git
passwd git
```

In order to ease access to the server let's set-up a password-less ssh login. First create ssh keys on your local machine:

```
ssh-keygen -t rsa
```

It will ask you to provide the location for storing the key, just hit Enter to use the default location. The second question will be to provide it with a pass phrase which will be needed to access the remote server.

It generates two keys - a public key and a private key. Note down the location of the public key which you will need in the next step.

Now i have to copy these keys to the server so that the two machines can talk to each other. Run the following command on your local machine:

```
cat ~/.ssh/id_rsa.pub | ssh git@remote-server "mkdir -p ~/.ssh && cat  
>> ~/.ssh/authorized_keys"
```

Now ssh into the server and create a project directory for Git. You can use the desired path for the repo.

```
git@server:~ $ mkdir -p /home/imran/project-1.git
```

Then change to this directory:

```
cd /home/imran/project-1.git
```

Then create an empty repo:

```
git init --bare  
Initialized empty Git repository in /home/imran/project-1.git
```

We now need to create a Git repo on the local machine.

```
mkdir -p /home/imran/git/project
```

And change to this directory:

```
cd /home/imran/git/project
```

Now create the files that you need for the project in this directory. Stay in this directory and initiate git:

```
git init  
Initialized empty Git repository in /home/imran/git/project
```

Now add files to the repo:

```
git add .
```

Add a file or make changes you have to run the add command above. You also need to write a commit message with every change in a file. The commit message basically tells what changes were made.

```
git commit -m "message" -a  
[master (root-commit) 57331ee] message  
2 files changed, 2 insertions(+)  
create mode 100644 GoT.txt
```

```
create mode 100644 writing.txt
```

An example:

```
git commit -m "message" imran.txt
[master e517b10] message
1 file changed, 1 insertion(+)
```

Until now we have been working on the local server. Now we have to push these changes to the server so the work is accessible over the Internet and you can collaborate with other team members.

```
git remote add origin ssh://git@remote-server/repo-<wbr> a="">path-on
-server..git
```

Now you can push or pull changes between the server and local machine using the 'push' or 'pull' option:

```
git push origin master
```

If there are other team members who want to work with the project they need to clone the repo on the server to their local machine:

```
git clone git@remote-server:/home/imran/project.git
```

Here */home/imran/project.git* is the project path on the remote server, exchange the values for your own server.

Then change directory on the local machine (exchange *project* with the name of project on your server):

```
cd /project
```

Now they can edit files, write commit change messages and then push them to the server:

```
git commit -m 'corrections in imran.txt story' -a
And then push changes:
git push origin master
```