Setup GIT & Integrate it to Jenkins

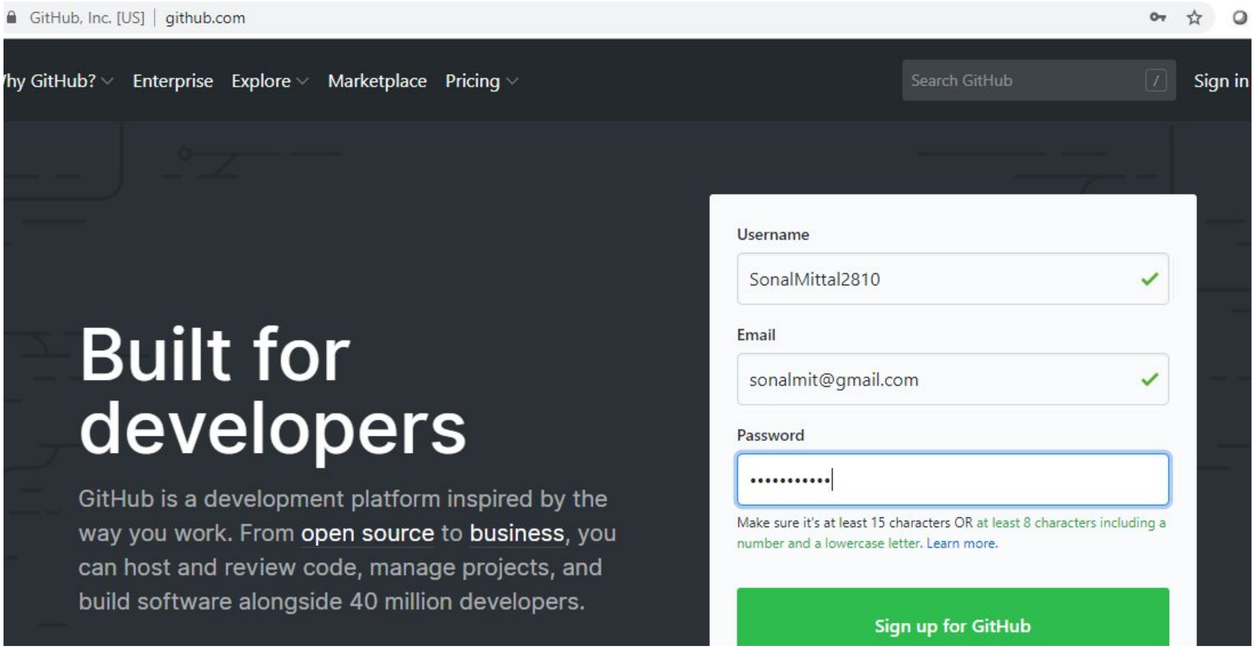
Welcome to the second tutorial of Git & Jenkins series. In the last tutorial we have already studied about how to setup jenkins. In this tutorial we will be studying about **how to setup a GIT** and how to **integrate GIT with Jenkins**. Please read the previous tutorial before you study this one.

What you will Learn:

Create GIT account:

Go to https://github.com/

Create a GIT account by signing-up (make a note of your username, password etc for later reference)



Built for developers

GitHub is a development platform inspired by the way you work. From open source to business, you can host and review code, manage projects, and build software alongside 40 million developers.

Username: SonalMittal2810

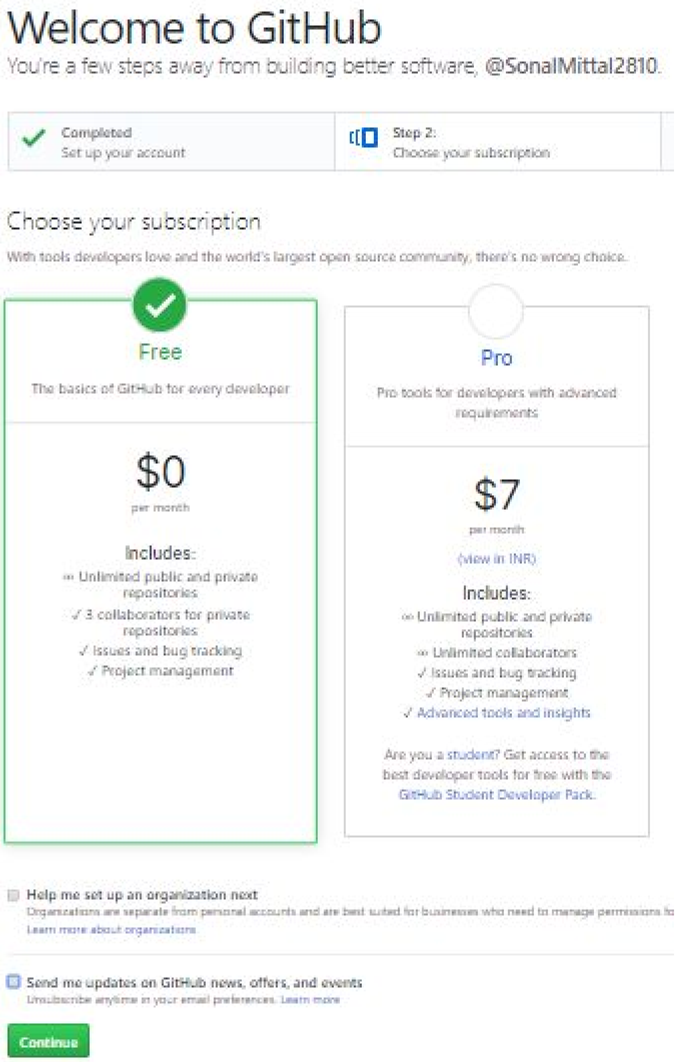
Email: sonalmit@gmail.com

Password: •••••••••••

Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. Learn more.

Figure 1

Once you sign-up, the below window comes up



Welcome to GitHub

You're a few steps away from building better software, @SonalMittal2810.

✓ Completed
Set up your account

Step 2:
Choose your subscription

Choose your subscription

With tools developers love and the world's largest open source community, there's no wrong choice.

● Free

The basics of GitHub for every developer

$0
per month

Includes:
∞ Unlimited public and private repositories
✓ 3 collaborators for private repositories
✓ Issues and bug tracking
✓ Project management

○ Pro

Pro tools for developers with advanced requirements

$7
per month
(view in INR)

Includes:
∞ Unlimited public and private repositories
∞ Unlimited collaborators
✓ Issues and bug tracking
✓ Project management
✓ Advanced tools and insights

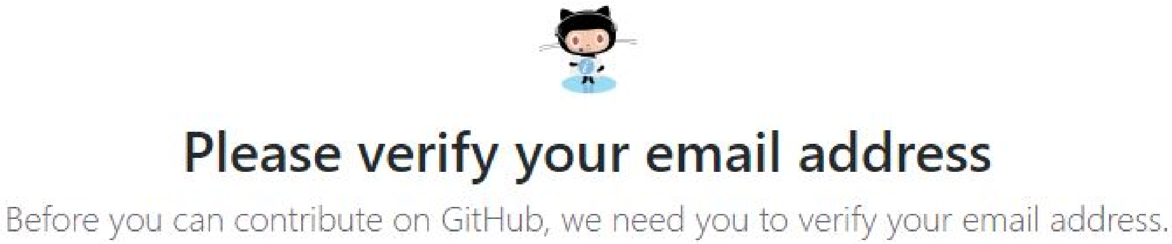
Are you a student? Get access to the best developer tools for free with the GitHub Student Developer Pack.

□ Help me set up an organization next
Organizations are separate from personal accounts and are best suited for businesses who need to manage permissions fo
Learn more about organizations

□ Send me updates on GitHub news, offers, and events
Unsubscribe anytime in your email preferences. Learn more

Figure 2

Click Continue (see Figure 2)
Verify your email address (see Figure 3)

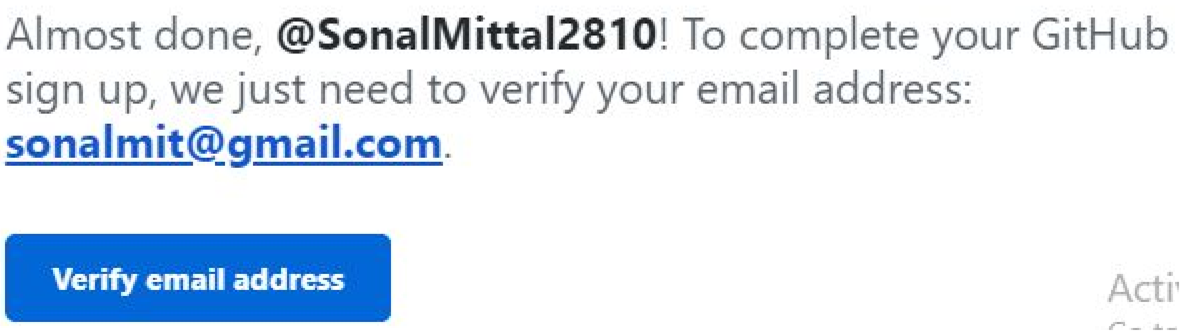


Please verify your email address

Before you can contribute on GitHub, we need you to verify your email address.

Figure 3

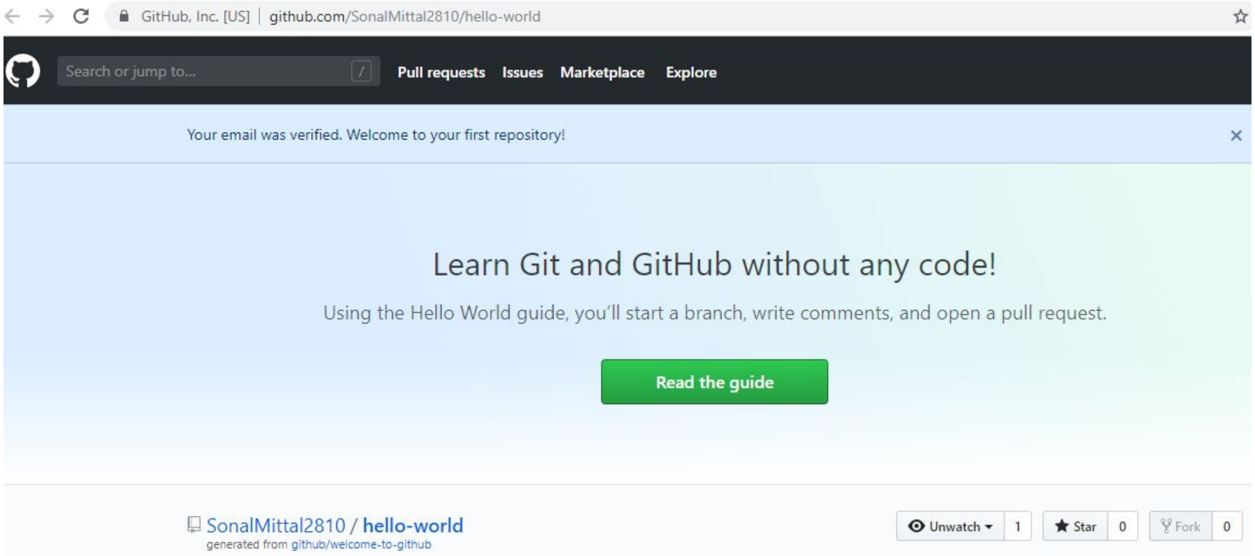
Go to your mailbox, open the email & click 'Verify email address' (see Figure 4)



Almost done, **@SonalMittal2810**! To complete your GitHub sign up, we just need to verify your email address: sonalmit@gmail.com.

Figure 4

After you verify your email address the below window comes up



GitHub, Inc. [US] | github.com/SonalMittal2810/hello-world
Search or jump to...
Pull requests
Issues
Marketplace
Explore

Your email was verified. Welcome to your first repository!

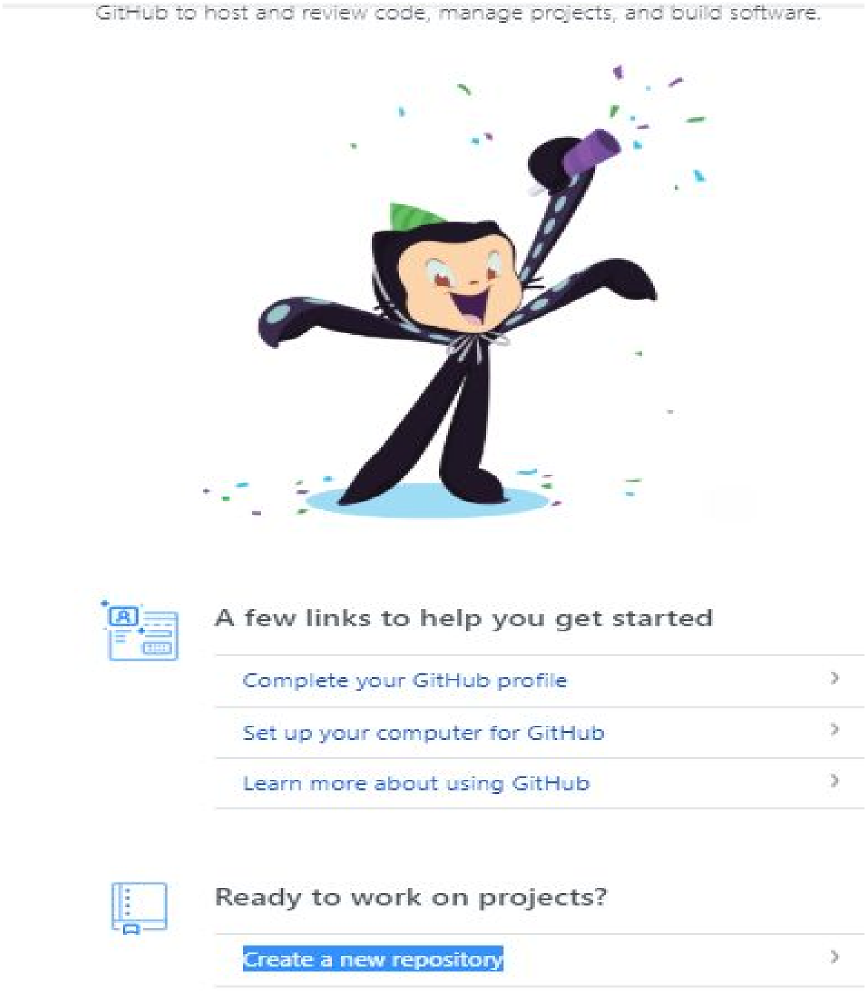
Learn Git and GitHub without any code!

Using the Hello World guide, you'll start a branch, write comments, and open a pull request.

Read the guide
SonalMittal2810 / hello-world
generated from github/welcome-to-github
Unwatch 1
Star 0
Fork 0

Figure 5

Once you do that, you will receive another email that has link to create a new repository (see Figure 6)



GitHub to host and review code, manage projects, and build software.

A few links to help you get started

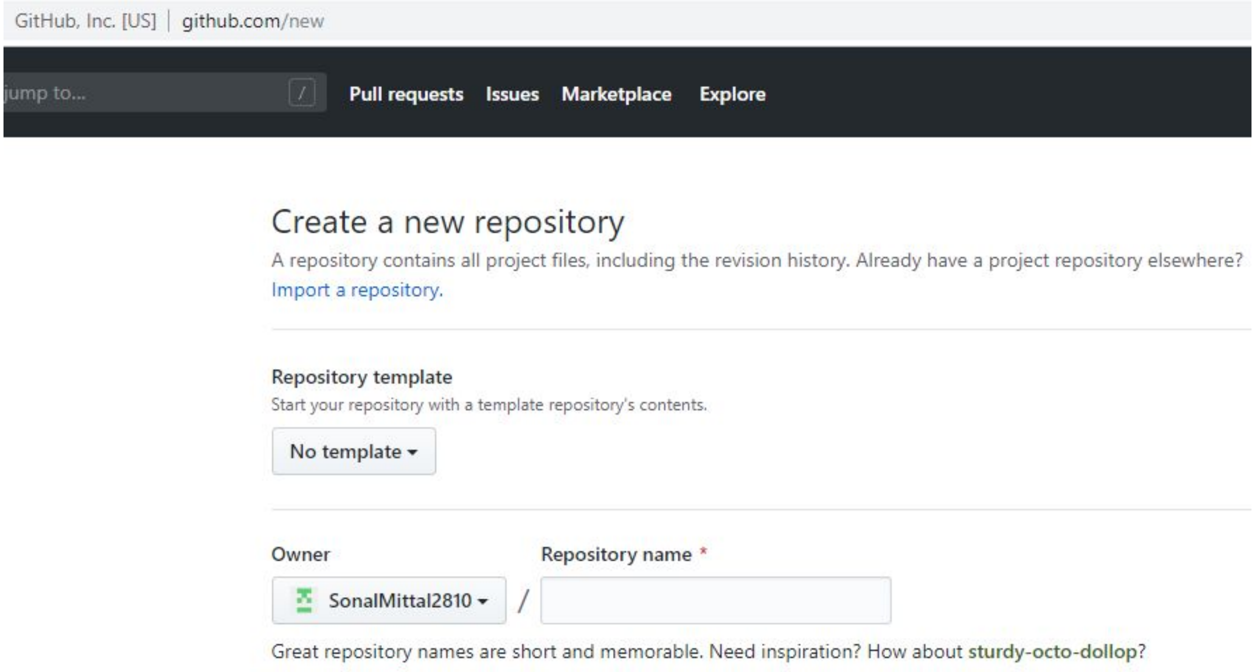
- Complete your GitHub profile
- Set up your computer for GitHub
- Learn more about using GitHub

Ready to work on projects?

- Create a new repository

Figure 6

Click the link ‘Create a new repository’ (see Figure 6), the below window comes up



Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.

Repository template

Start your repository with a template repository's contents.

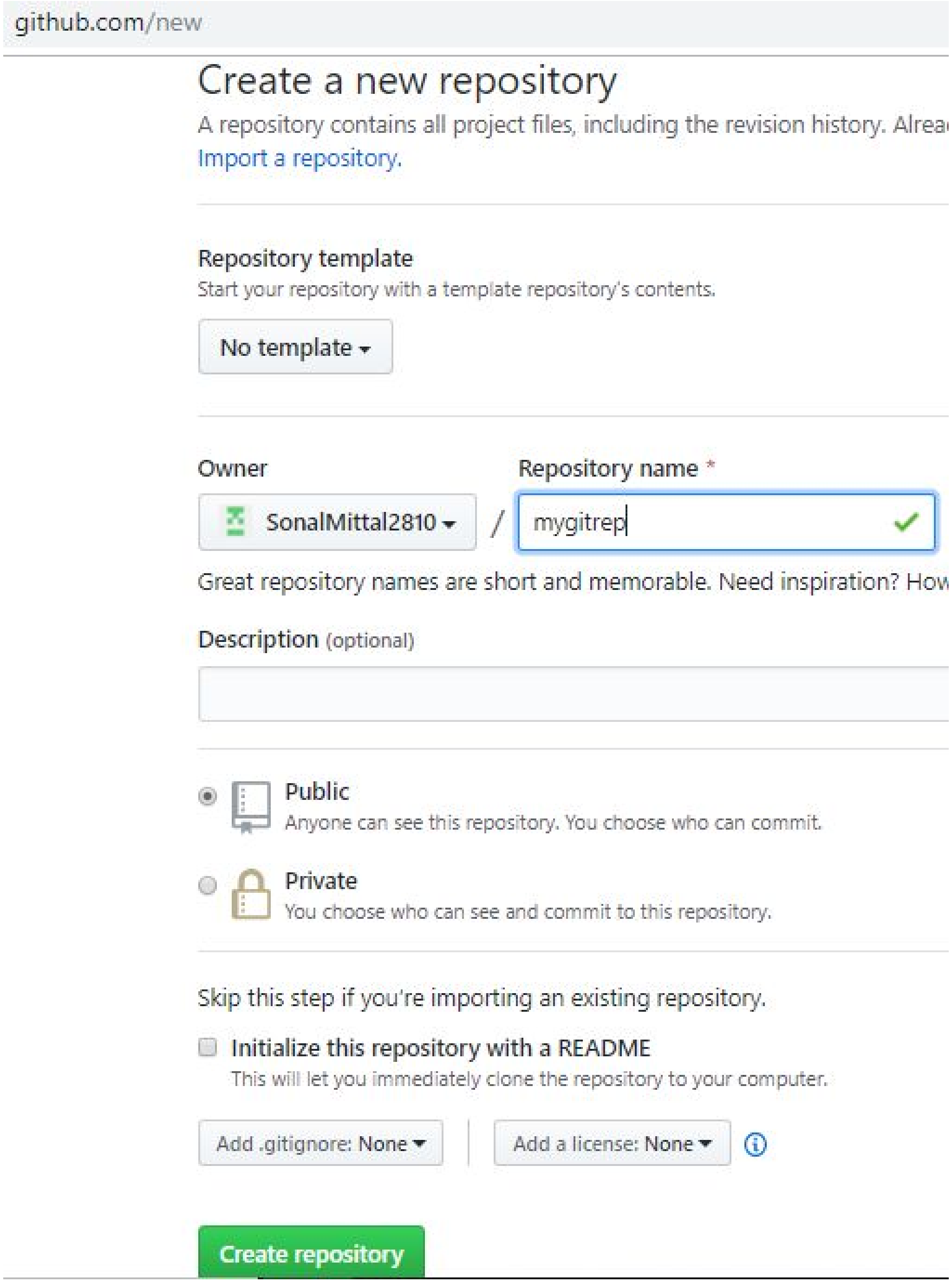
No template ▾

Owner: SonalMittal2810 ▾ / Repository name *

Great repository names are short and memorable. Need inspiration? How about sturdy-octo-dollop?

Figure 7

Create GIT repository:
Enter desired repository name



github.com/new

Create a new repository

A repository contains all project files, including the revision history. Alrea
Import a repository.

Repository template
Start your repository with a template repository's contents.

Owner: SonalMittal2810 ▾ / Repository name *: mygitrep ✓

Great repository names are short and memorable. Need inspiration? How

Description (optional)

● Public
Anyone can see this repository. You choose who can commit.

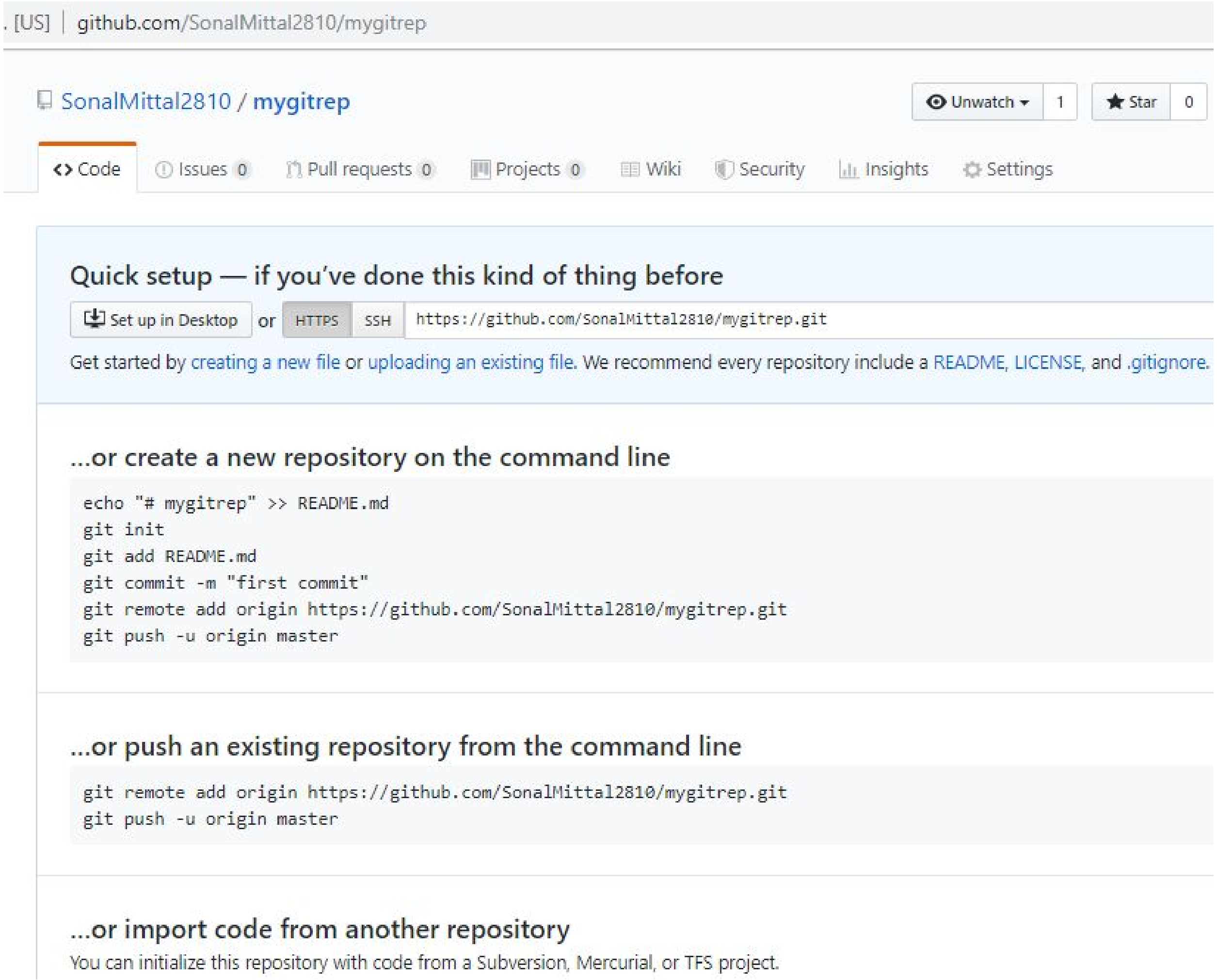
○ Private
You choose who can see and commit to this repository.

Skip this step if you're importing an existing repository.

□ Initialize this repository with a README
This will let you immediately clone the repository to your computer.

Figure 8

Click ‘Create repository’ (see Figure 8), the below page comes up


. [US] | github.com/SonalMittal2810/mygitrep
SonalMittal2810 / mygitrep
Unwatch 1
Star 0
<> Code
Issues 0
Pull requests 0
Projects 0
Wiki
Security
Insights
Settings
Set up in Desktop
or
HTTPS
SSH
https://github.com/SonalMittal2810/mygitrep.git

Quick setup — if you’ve done this kind of thing before

Get started by creating a new file or uploading an existing file. We recommend every repository include a README, LICENSE, and .gitignore.

...or create a new repository on the command line

```
echo "# mygitrep" >> README.md
git init
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/SonalMittal2810/mygitrep.git
git push -u origin master
```

...or push an existing repository from the command line

```
git remote add origin https://github.com/SonalMittal2810/mygitrep.git
git push -u origin master
```

...or import code from another repository

You can initialize this repository with code from a Subversion, Mercurial, or TFS project.

Figure 9

Download & Install GIT:

Go to the link https://git-scm.com/downloads and download/install git for windows on your local machine

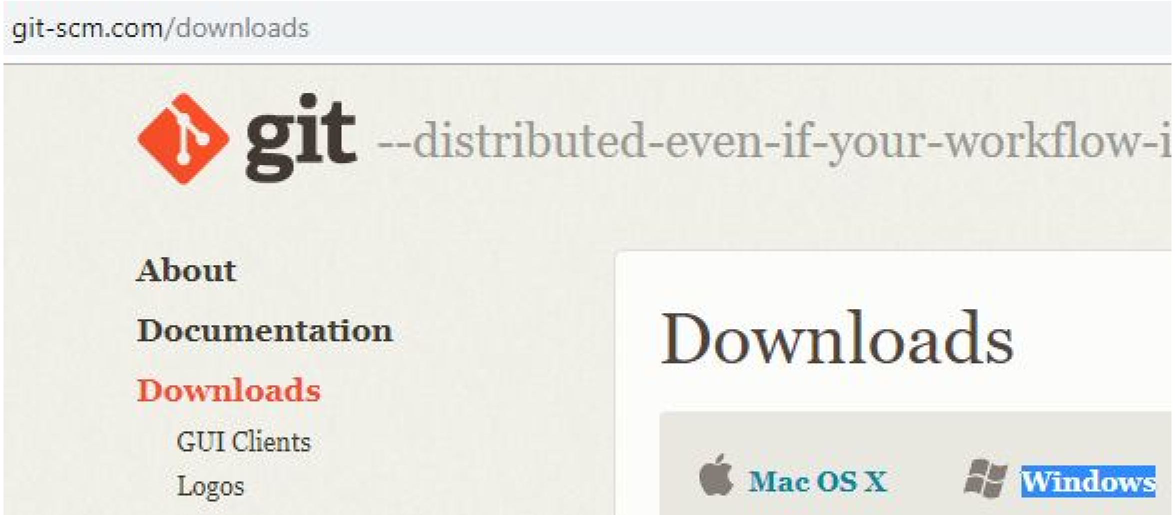
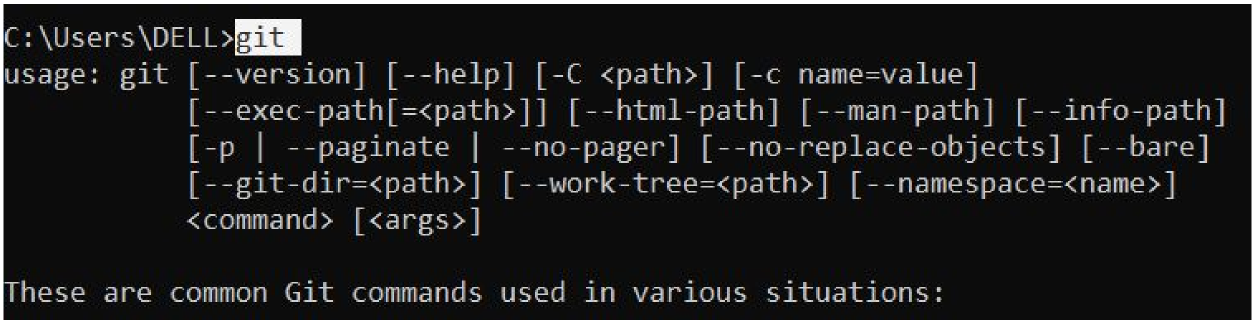


Figure 10

Open the command prompt & run the 'git' command, you should see the below output



```
C:\Users\DELL>git
usage: git [--version] [--help] [-C <path>] [-c name=value]
           [--exec-path[=<path>]] [--html-path] [--man-path] [--info-path]
           [-p | --paginate | --no-pager] [--no-replace-objects] [--bare]
           [--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
           <command> [<args>]

These are common Git commands used in various situations:
```

Figure 11

Create local git repository:
In your local machine, create a new folder & give it a desired name (see Figure 12).
We will be creating our project in this folder. We will than be uploading this project from our local machine to GIT repository on github that we just now created

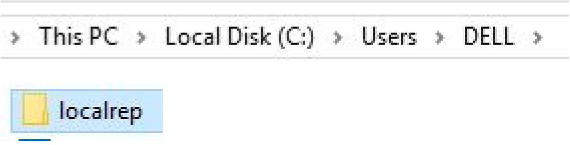


Figure 12

Go inside above folder & create Project1

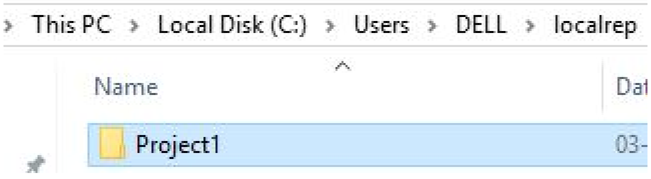


Figure 13

Go inside project1 & create a text file ‘Readme’

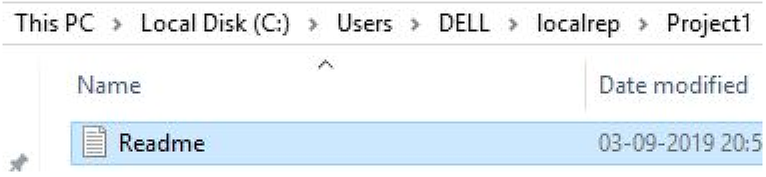
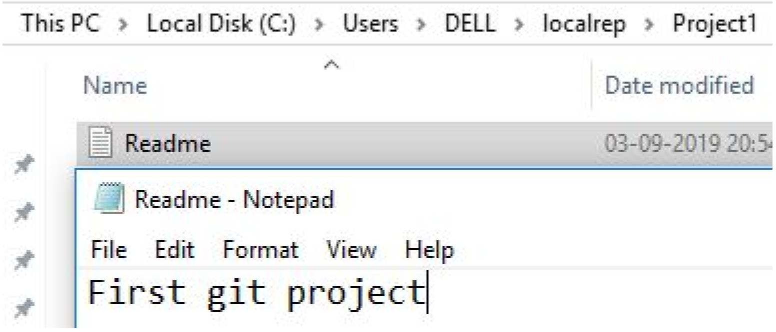

This PC › Local Disk (C:) › Users › DELL › localrep › Project1
Name
Date modified
Readme
03-09-2019 20:5

Figure 14

Open the text file & write something (see Figure 15)


This PC › Local Disk (C:) › Users › DELL › localrep › Project1
Name
Date modified
Readme
03-09-2019 20:5
Readme - Notepad
File Edit Format View Help

```
First git project
```

Figure 15

Close & save the above text file

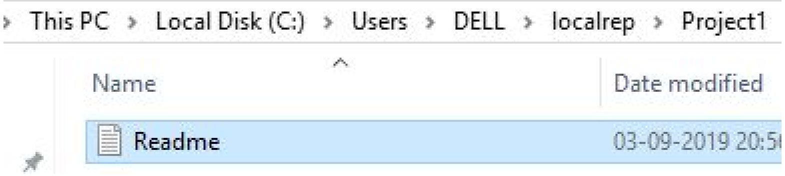

This PC › Local Disk (C:) › Users › DELL › localrep › Project1
Name
Date modified
Readme
03-09-2019 20:5

Figure 16

Initialize local GIT repository:
Go one directory up so that you see the Project1

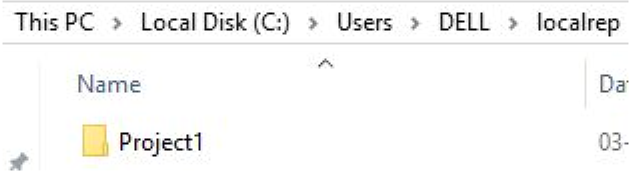
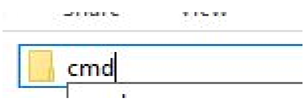


Figure 17

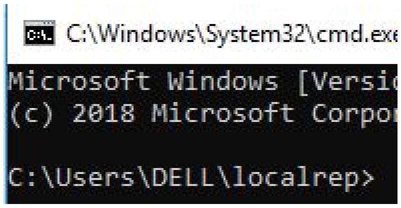
Type cmd in the title bar



cmd

Figure 18

Hit Enter, the command prompt would open that would show the path up to localrep

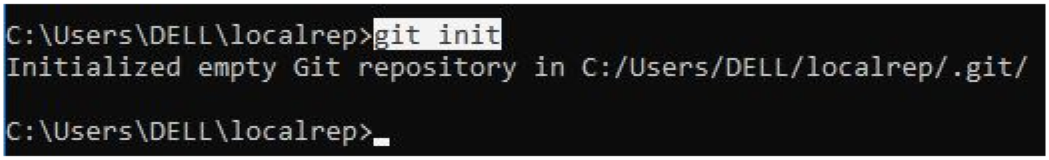


C:\Windows\System32\cmd.exe

```
Microsoft Windows [Versic
(c) 2018 Microsoft Corpor

C:\Users\DELL\localrep>
```

Figure 19

Type **git init** command & hit enter, you should see the message as shown below



```
C:\Users\DELL\localrep>git init
Initialized empty Git repository in C:/Users/DELL/localrep/.git/

C:\Users\DELL\localrep>_
```

Figure 20

Click 'View' from the top menu & select checkbox 'Hidden items' (see Figure 21)

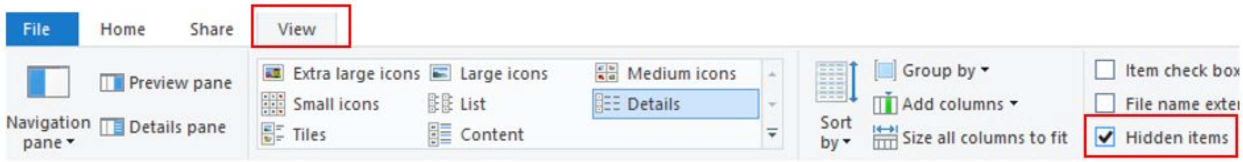


Figure 21

You would now see the hidden file .git

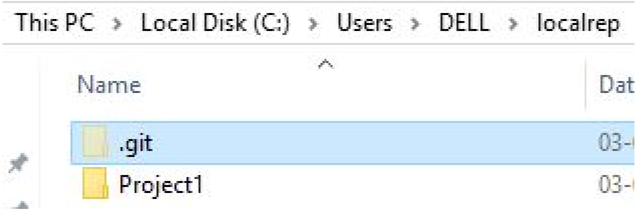
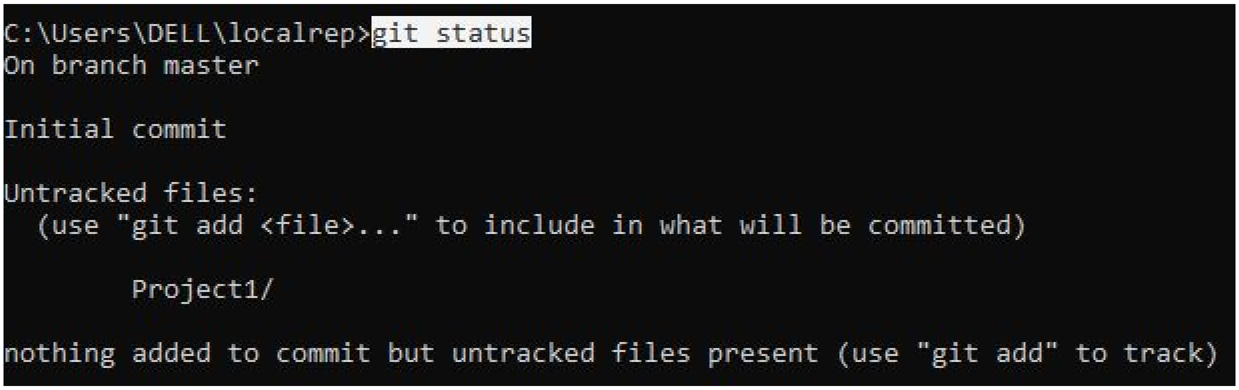


Figure 22

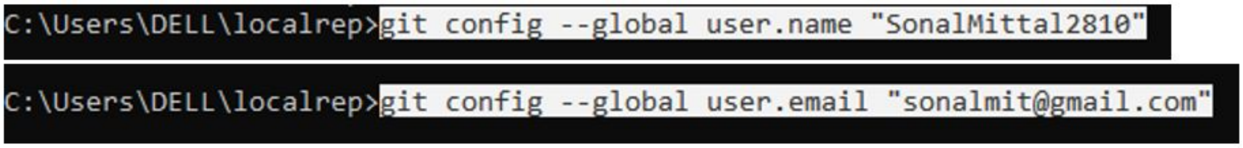
Now go to the command prompt, type **git status** and hit enter, you should see below message "nothing added to commit……..”



```
C:\Users\DELL\localrep>git status
On branch master

Initial commit

Untracked files:
  (use "git add <file>..." to include in what will be committed)

        Project1/

nothing added to commit but untracked files present (use "git add" to track)
```

Figure 23

Register username & email id with GIT:
See Figure 1 & note down the userid & email id that you had created while creating your GIT account. We will register this userid & email id with GIT by running the following 2 commands one by one (see Figure 24):
git config --global user.name "<your user id>"
git config --global user.email "<your email id>"



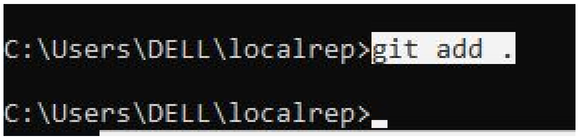
```
C:\Users\DELL\localrep>git config --global user.name "SonalMittal2810"
```

```
C:\Users\DELL\localrep>git config --global user.email "sonalmit@gmail.com"
```

Figure 24

So this registers your email id & username on the local git repository. It will connect to the GIT repository on Github to as well

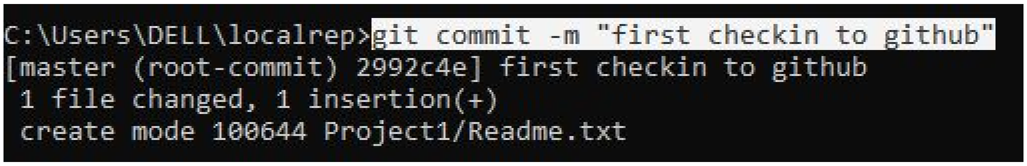
Add the project to local GIT repository:
See Figure 22. We will now add the Project1 to local GIT repository by typing the command **git add .** (dot means all the projects inside localrep folder)



```
C:\Users\DELL\localrep>git add .

C:\Users\DELL\localrep>_
```

Figure 25

Commit file to local GIT repository:
Now we will checkin the text file to local GIT repository (the file present inside the Project1 folder, see Figure 16), by running the command: *git commit -m "first checkin to github"*



```
C:\Users\DELL\localrep>git commit -m "first checkin to github"
[master (root-commit) 2992c4e] first checkin to github
 1 file changed, 1 insertion(+)
 create mode 100644 Project1/Readme.txt
```

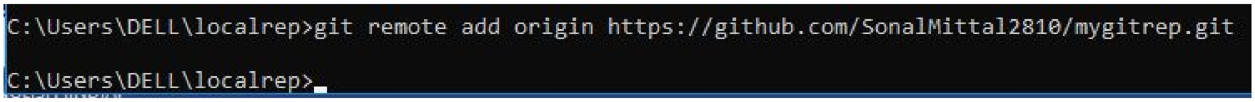
Figure 26

Connect local GIT repository to remote repository on github:

Note that, so far, we have added the Project1 folder & checked-in the Readme file ONLY to our local GIT repository (see Figure 10), these are NOT yet on internet (github).

Now, how will our local machine GIT repository know the remote GIT repository that we created on github? To do that, type & run the below command:

git remote add origin https://github.com/<yourGITusername>/<yourGITrepository>.git

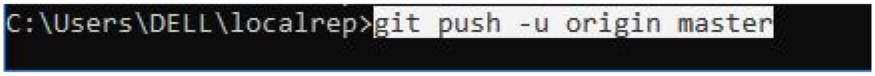


```
C:\Users\DELL\localrep>git remote add origin https://github.com/SonalMittal2810/mygitrep.git

C:\Users\DELL\localrep>_
```

Figure 27

Upload local project to github:

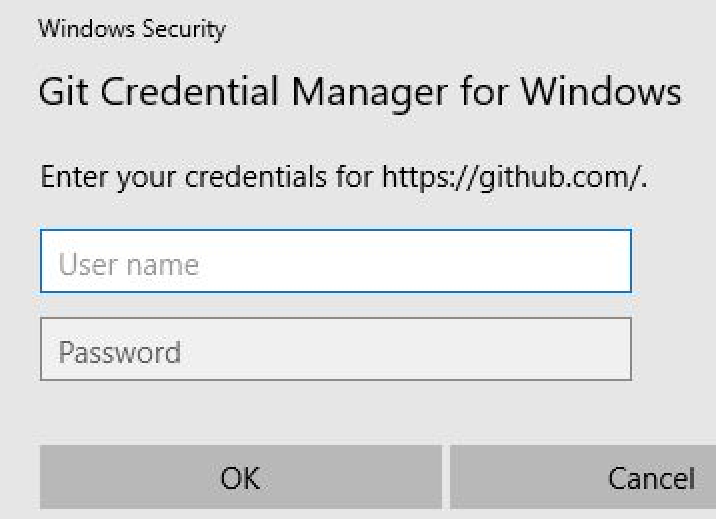
Type the command *git push –u origin master* and run



```
C:\Users\DELL\localrep>git push -u origin master
```

Figure 28

As soon as you run the above command, the below window would come up



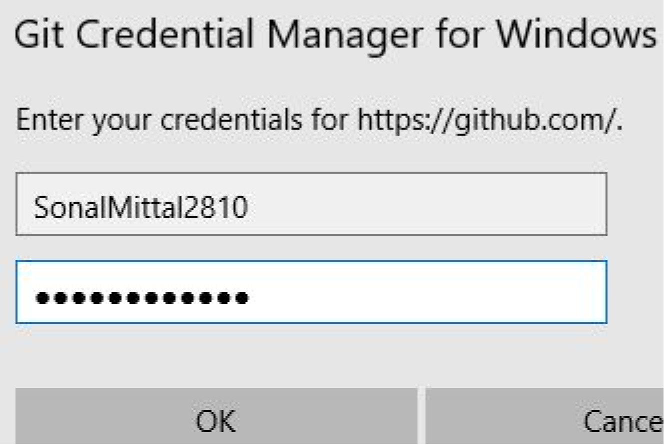
Windows Security

Git Credential Manager for Windows

Enter your credentials for https://github.com/.

Figure 29

Enter your git username & password



Git Credential Manager for Windows

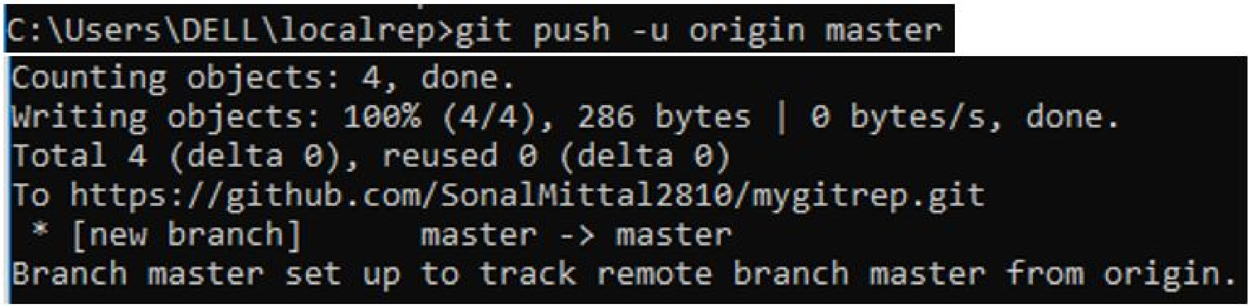
Enter your credentials for https://github.com/.

SonalMittal2810

●●●●●●●●●●●●●

Figure 30

Click OK, you should get the below message

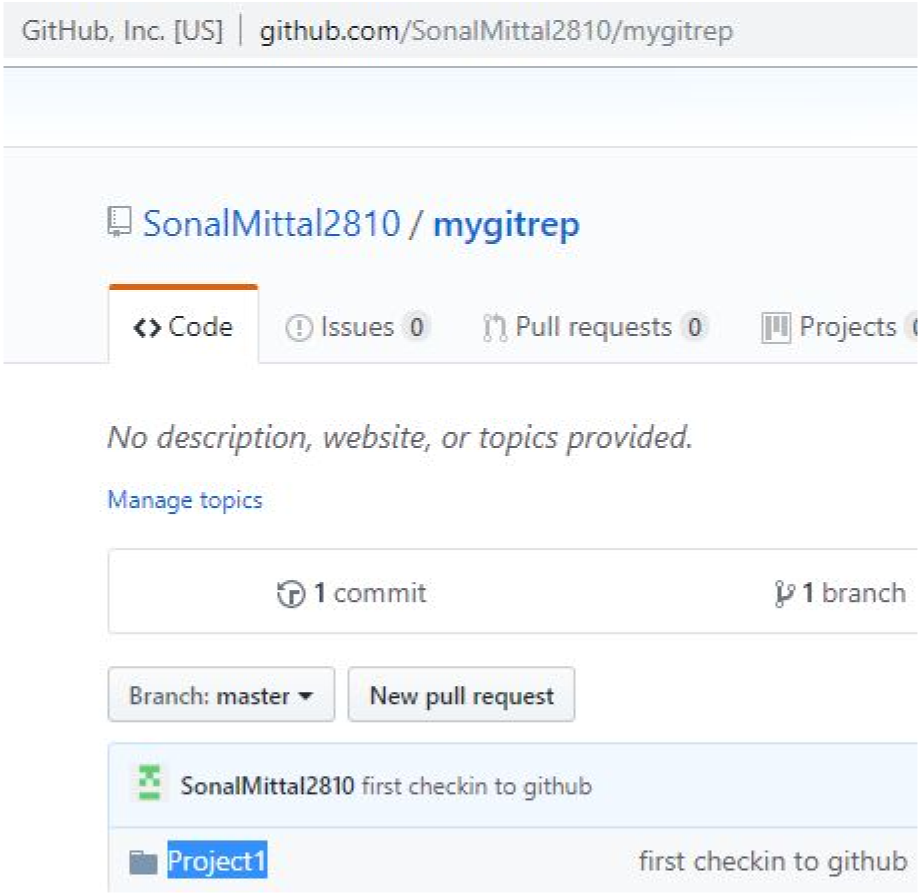


```
C:\Users\DELL\localrep>git push -u origin master
Counting objects: 4, done.
Writing objects: 100% (4/4), 286 bytes | 0 bytes/s, done.
Total 4 (delta 0), reused 0 (delta 0)
To https://github.com/SonalMittal2810/mygitrep.git
 * [new branch]      master -> master
Branch master set up to track remote branch master from origin.
```

Figure 31

Refresh the url https://github.com/SonalMittal2810/mygitrep

You should now see the Project1 on github



GitHub, Inc. [US] | github.com/SonalMittal2810/mygitrep

SonalMittal2810 / mygitrep

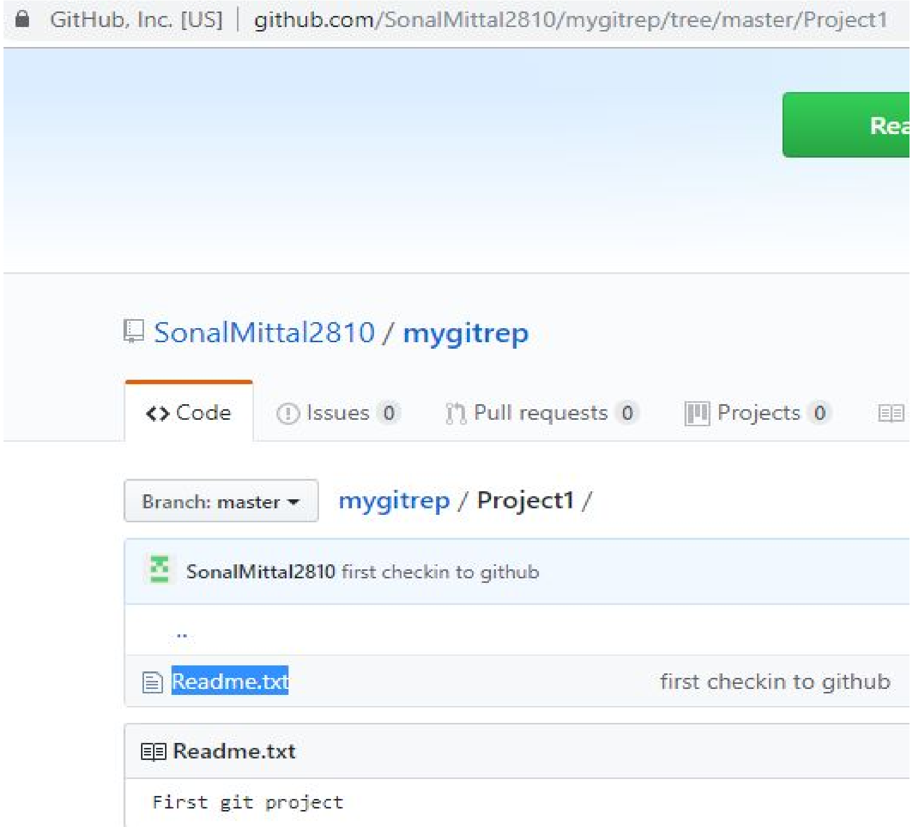
No description, website, or topics provided.

SonalMittal2810 first checkin to github

Project1 first checkin to github

Figure 32

Click Project1, you can see the Readme.txt file as well (see Figure 33)



GitHub, Inc. [US] | github.com/SonalMittal2810/mygitrep/tree/master/Project1

SonalMittal2810 / mygitrep

mygitrep / Project1 /

SonalMittal2810 first checkin to github

..

Readme.txt first checkin to github

Readme.txt

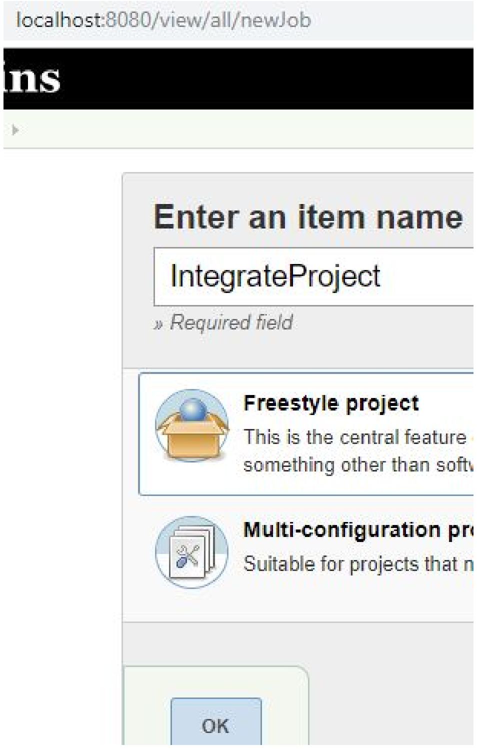
```
First git project
```

Figure 33

This is how you upload the local project to github!

Integrate Jenkins to github:
Start jenkins through the command prompt (read previous article here if you would like to know how to start jenkins)

Create a new freestyle project in jenkins



localhost:8080/view/all/newJob

Enter an item name

IntegrateProject

» Required field

Freestyle project

This is the central feature

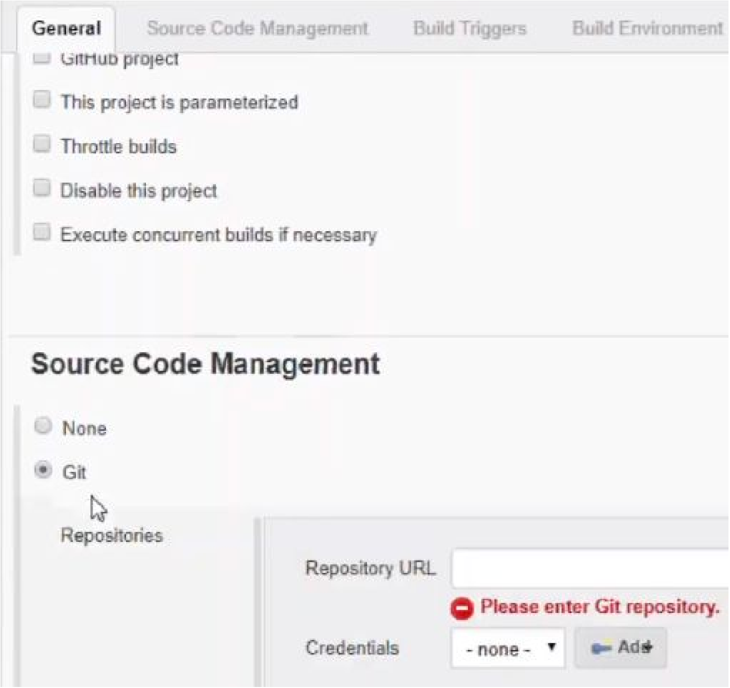
something other than soft

Multi-configuration pr

Suitable for projects that n

Figure 34

Select radio button ‘Git’ in source code management section



□ GitHub project

□ This project is parameterized

□ Throttle builds

□ Disable this project

□ Execute concurrent builds if necessary

Source Code Management

○ None

● Git

Repositories

Repository URL

Please enter Git repository.

Credentials - none -

Figure 35

Go to github project repository, click ‘Clone or download’ small arrow, copy the repository url

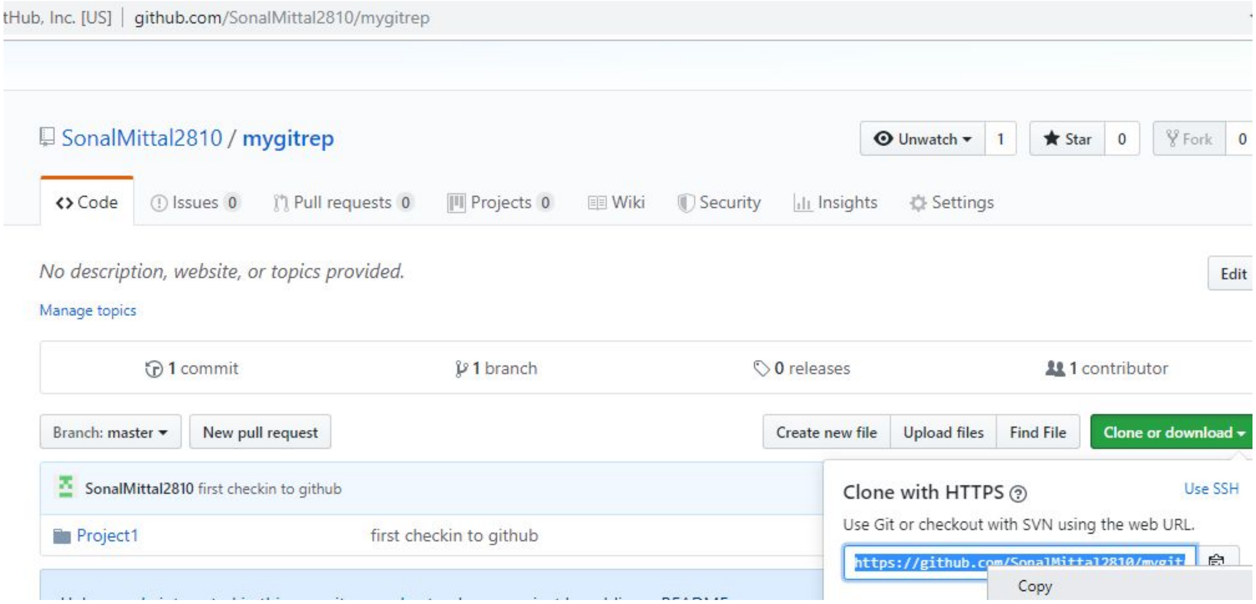


Figure 36

Paste this repository url in ‘Repository URL’ field

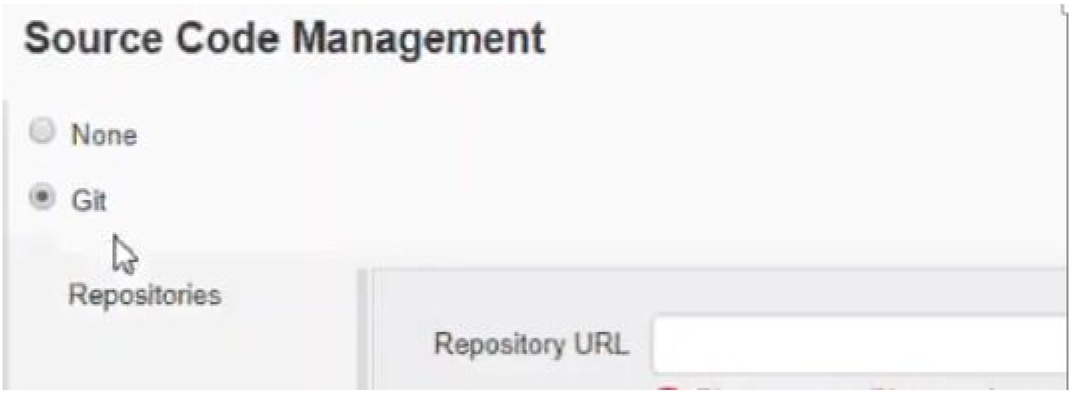
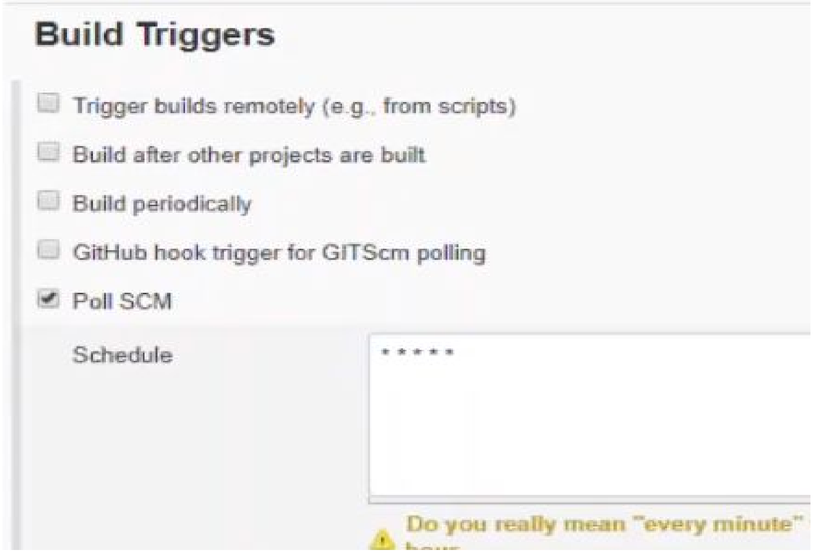


Figure 37

In the ‘Build Triggers’ section, select the checkbox ‘Poll SCM’ (SCM is GIT over here), enter schedule as * * * * * to poll every one minute, see Figure 38



Build Triggers

- □ Trigger builds remotely (e.g., from scripts)
- □ Build after other projects are built
- □ Build periodically
- □ GitHub hook trigger for GITScm polling
- ☑ Poll SCM

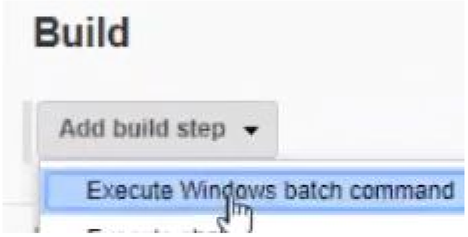
Schedule

```
* * * * *
```

⚠ Do you really mean "every minute"

Figure 38

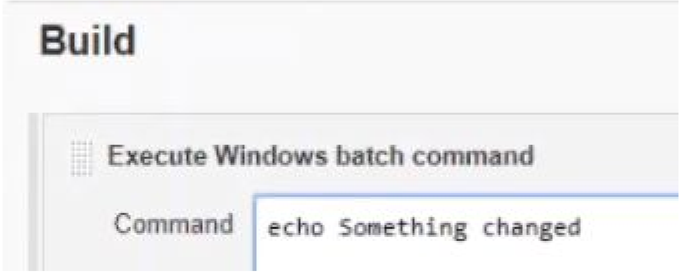
In the Build' section, select 'Execute Windows batch command'



Build

Figure 39

Enter a command: *echo something changed*



Build

Execute Windows batch command

Command

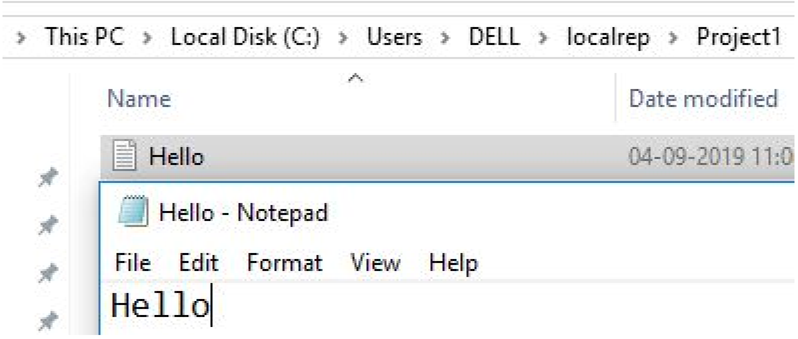
```
echo Something changed
```

Figure 40

So as soon as something will change on github, Jenkins will detect it & it will run the build. In the build it will print 'something changed'.

Click 'Save' to save the project in the Jenkins.

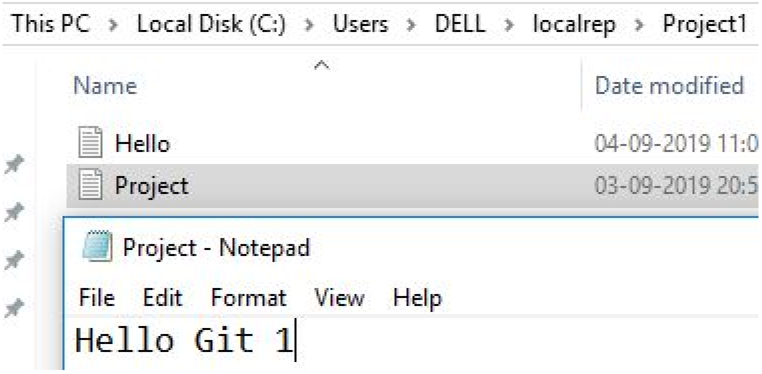
Go to your local GIT repository Project1 folder & create another text file 'Hello' & type anything in it, save the file


This PC > Local Disk (C:) > Users > DELL > localrep > Project1
Name
Date modified
Hello
04-09-2019 11:0
Hello - Notepad
File Edit Format View Help

Hello

Figure 41

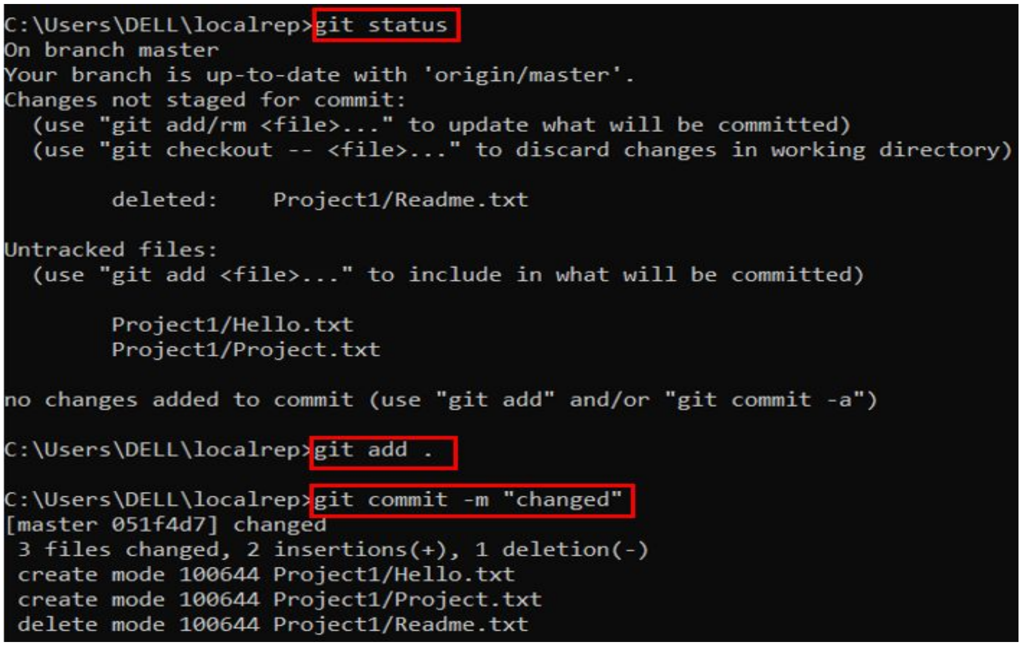
Create another file ‘Project’ & type anything, save it


This PC > Local Disk (C:) > Users > DELL > localrep > Project1
Name
Date modified
Hello
04-09-2019 11:0
Project
03-09-2019 20:5
Project - Notepad
File Edit Format View Help

Hello Git 1

Figure 42

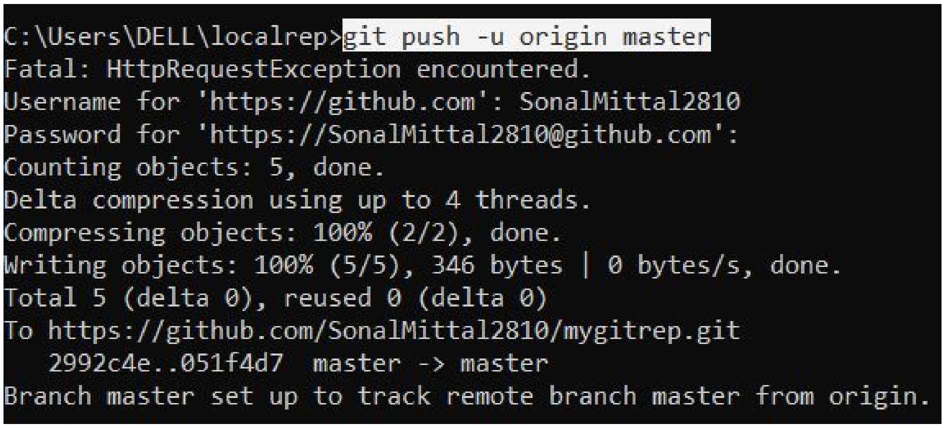
Go to command prompt & cd to your local rep. Run the 3 git commands (see Figure 43)



```
C:\Users\DELL\localrep>git status
On branch master
Your branch is up-to-date with 'origin/master'.
Changes not staged for commit:
  (use "git add/rm <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        deleted:    Project1/Readme.txt

Untracked files:
  (use "git add <file>..." to include in what will be committed)

        Project1/Hello.txt
        Project1/Project.txt

no changes added to commit (use "git add" and/or "git commit -a")

C:\Users\DELL\localrep>git add .

C:\Users\DELL\localrep>git commit -m "changed"
[master 051f4d7] changed
 3 files changed, 2 insertions(+), 1 deletion(-)
 create mode 100644 Project1/Hello.txt
 create mode 100644 Project1/Project.txt
 delete mode 100644 Project1/Readme.txt
```

Figure 43

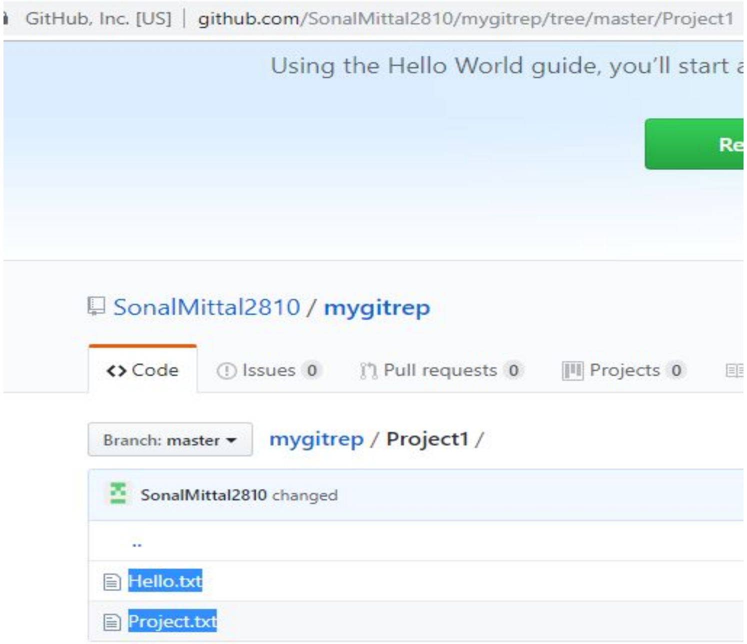
Next, run the below git command



```
C:\Users\DELL\localrep>git push -u origin master
Fatal: HttpRequestException encountered.
Username for 'https://github.com': SonalMittal2810
Password for 'https://SonalMittal2810@github.com':
Counting objects: 5, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (5/5), 346 bytes | 0 bytes/s, done.
Total 5 (delta 0), reused 0 (delta 0)
To https://github.com/SonalMittal2810/mygitrep.git
   2992c4e..051f4d7  master -> master
Branch master set up to track remote branch master from origin.
```

Figure 44

Refresh github, you now see the 2 files added



GitHub, Inc. [US] | github.com/SonalMittal2810/mygitrep/tree/master/Project1

Using the Hello World guide, you'll start a

Figure 45

In Jenkins, you see the build started automatically

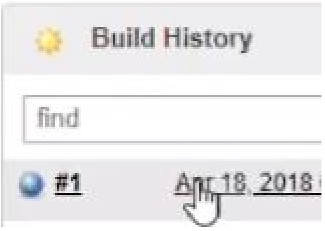
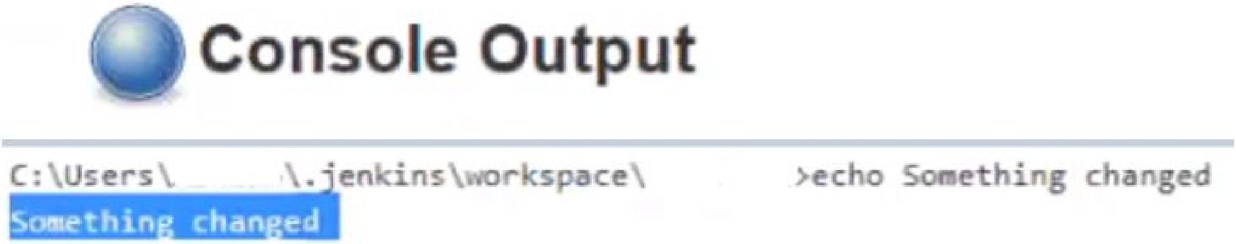


Figure 46

Thus the project is build automatically, you can see ‘something changed’ getting printed in console output



```
C:\Users\      \.jenkins\workspace\          >echo Something changed
Something changed
```

Figure 47

Conclusion

So in this tutorial we have seen how to setup GIT from scratch & how to integrate Jenkins with GIT. We also saw that Jenkins automatically polled github & build the project. This completes our Git-Jenkins-Integration series. Thank you for reading!