

DEVOPS PROFESSIONAL CERTIFICATION PROGRAM

Lab – 2: SCM - Git & Gitlab

- Create local and Remote Repository
- Push local repository to remote repository
- Clone source copy from remote repository and push modified copy
- Track source file(s) locally - Access previous commit by ref/tag

Explore

- Branch - Merge, Rebase & Cherry-pick
- Difference between Merge, Rebase and cherry-pick
- rewrite & rollback
- delete tags / branch
- gitignore, provide access to others



- **Creating Local Repository**

- Distinguish Working Directory & Local Repository
- Differentiate Staging & Commit
- Track versions

```

osgdev@TG-DevOps-OS115: ~/lab2/L2R
osgdev@TG-DevOps-OS115:~$ mkdir lab2
osgdev@TG-DevOps-OS115:~$ cd lab2
osgdev@TG-DevOps-OS115:~/lab2$ mkdir L2R
osgdev@TG-DevOps-OS115:~/lab2$ cd L2R
osgdev@TG-DevOps-OS115:~/lab2/L2R$ git init
Initialized empty Git repository in /home/osgdev/lab2/L2R/.git/
osgdev@TG-DevOps-OS115:~/lab2/L2R$ ls -a
.  ..  .git
osgdev@TG-DevOps-OS115:~/lab2/L2R$ gedit Welcome.java
osgdev@TG-DevOps-OS115:~/lab2/L2R$ ls
Welcome.java
osgdev@TG-DevOps-OS115:~/lab2/L2R$ ls -a
.  ..  .git  Welcome.java
osgdev@TG-DevOps-OS115:~/lab2/L2R$ cat Welcome.java
class Welcome{
    public static void main(String[] args){
        System.out.println("Welcome to DevOps Certification Program");
    }
}

osgdev@TG-DevOps-OS115:~/lab2/L2R$ git status
On branch master

Initial commit

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

        Welcome.java

nothing added to commit but untracked files present (use "git add" to track)
osgdev@TG-DevOps-OS115:~/lab2/L2R$ git add Welcome.java
osgdev@TG-DevOps-OS115:~/lab2/L2R$ git status
On branch master

Initial commit

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)

        new file:   Welcome.java

osgdev@TG-DevOps-OS115:~/lab2/L2R$ git commit -m "initial Code"
[master (root-commit) 60a82ee] initial Code
Committer: avitepa <osgdev@TG-DevOps-OS115.wipro.com>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

1 file changed, 7 insertions(+)
create mode 100644 Welcome.java

```

```

osgdev@TG-DevOps-0S115:~/Lab2/L2R$ git log
commit 60a82ee4cb9495946221c825b70f17ae6283e744
Author: avitepa <osgdev@TG-DevOps-0S115.wipro.com>
Date:   Wed Jul 11 13:46:58 2018 +0530

    initial Code
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ gedit Welcome.java
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ cat Welcome.java
class Welcome{
    public static void main(String[] args){
        System.out.println("Welcome to DevOps Certification Program");
        System.out.println("### Initial Code Modified ###");
    }
}

osgdev@TG-DevOps-0S115:~/Lab2/L2R$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   Welcome.java

no changes added to commit (use "git add" and/or "git commit -a")
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ git commit -a -m "Modified Code-1"
[master 5713339] Modified Code-1
Committer: avitepa <osgdev@TG-DevOps-0S115.wipro.com>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

1 file changed, 2 insertions(+)
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ git status
On branch master
nothing to commit, working directory clean
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ git log
commit 5713339ed08f304b99a479140b94ce00e4b0974c
Author: avitepa <osgdev@TG-DevOps-0S115.wipro.com>
Date:   Wed Jul 11 13:51:50 2018 +0530

    Modified Code-1

commit 60a82ee4cb9495946221c825b70f17ae6283e744
Author: avitepa <osgdev@TG-DevOps-0S115.wipro.com>
Date:   Wed Jul 11 13:46:58 2018 +0530

    initial Code
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ █

```

```
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ git log
commit 5713339ed08f304b99a479140b94ce00e4b0974c
Author: avitepa <osgdev@TG-DevOps-0S115.wipro.com>
Date:   Wed Jul 11 13:51:50 2018 +0530

    Modified Code-1

commit 60a82ee4cb9495946221c825b70f17ae6283e744
Author: avitepa <osgdev@TG-DevOps-0S115.wipro.com>
Date:   Wed Jul 11 13:46:58 2018 +0530

    initial Code
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ cat Welcome.java
class Welcome{
    public static void main(String[] args){
        System.out.println("Welcome to DevOps Certification Program");
        System.out.println("### Initial Code Modified ###");
    }
}

osgdev@TG-DevOps-0S115:~/Lab2/L2R$ git checkout 60a82e
Note: checking out '60a82e'.

You are in 'detached HEAD' state. You can look around, make experimental
changes and commit them, and you can discard any commits you make in this
state without impacting any branches by performing another checkout.

If you want to create a new branch to retain commits you create, you may
do so (now or later) by using -b with the checkout command again. Example:

    git checkout -b <new-branch-name>

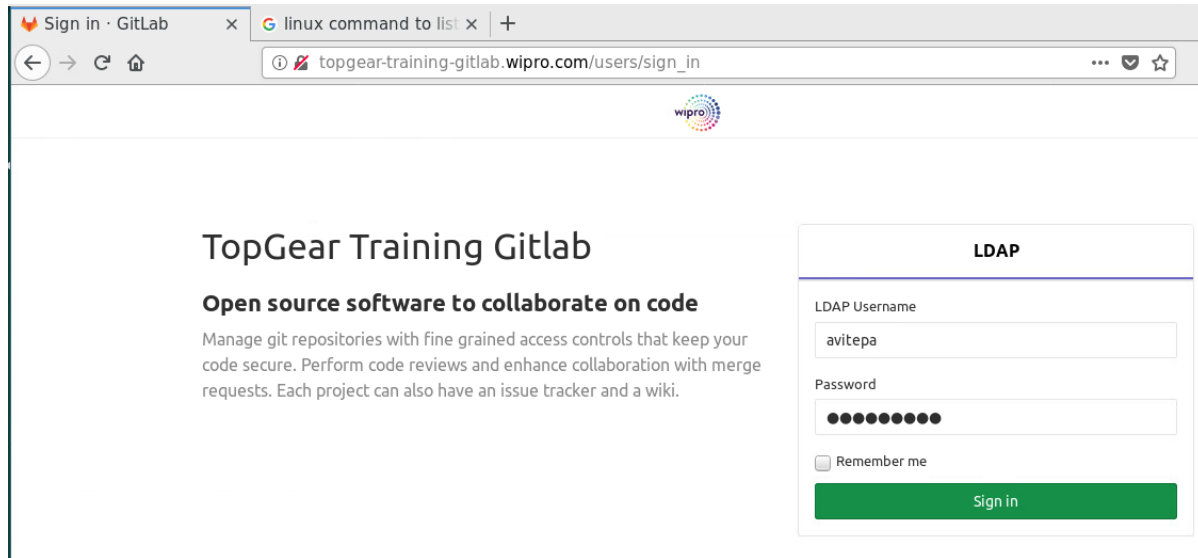
HEAD is now at 60a82ee... initial Code
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ cat Welcome.java
class Welcome{
    public static void main(String[] args){
        System.out.println("Welcome to DevOps Certification Program");
    }
}

osgdev@TG-DevOps-0S115:~/Lab2/L2R$ git ckeckout 571333
git: 'ckeckout' is not a git command. See 'git --help'.

Did you mean this?
    checkout
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ git checkout 571333
Previous HEAD position was 60a82ee... initial Code
HEAD is now at 5713339... Modified Code-1
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ cat Welcome.java
class Welcome{
    public static void main(String[] args){
        System.out.println("Welcome to DevOps Certification Program");
        System.out.println("### Initial Code Modified ###");
    }
}

osgdev@TG-DevOps-0S115:~/Lab2/L2R$
```

- Login and Create new Project



Sign in · GitLab

linux command to list x +

topgear-training-gitlab.wipro.com/users/sign_in

TopGear Training Gitlab

Open source software to collaborate on code

Manage git repositories with fine grained access controls that keep your code secure. Perform code reviews and enhance collaboration with merge requests. Each project can also have an issue tracker and a wiki.

LDAP

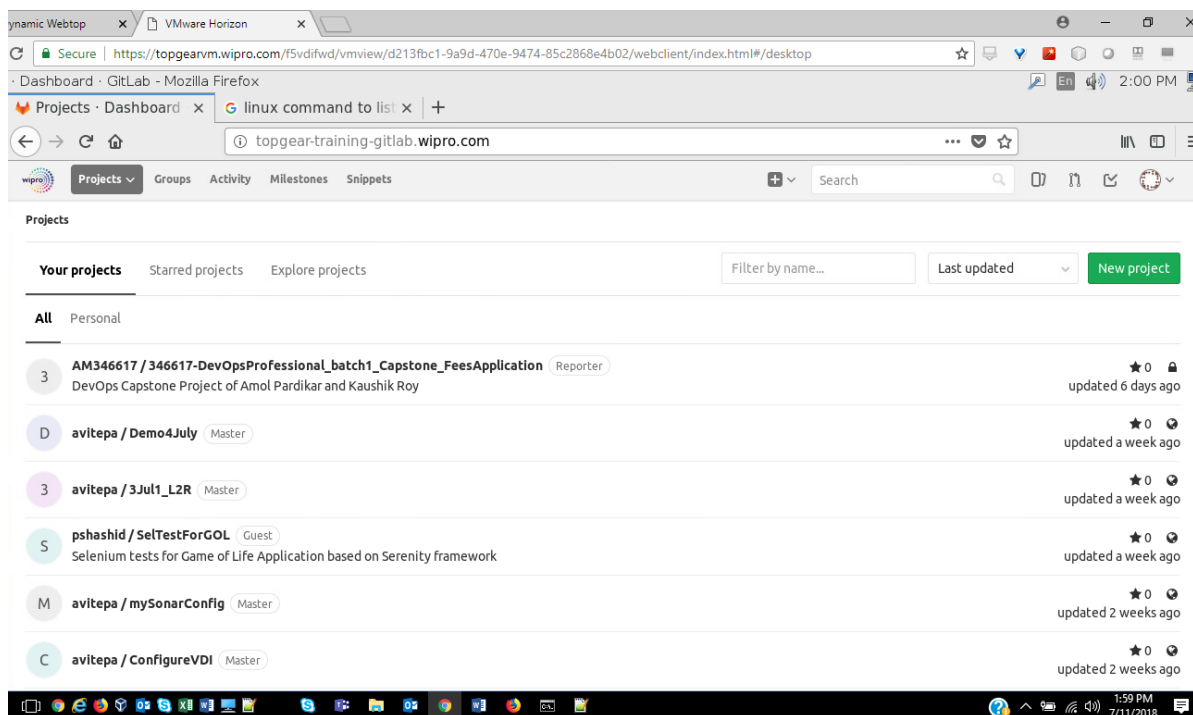
LDAP Username

avitepa

Password

Remember me

Sign in



dynamic Webtop x VMware Horizon x

Secure | https://topgearvm.wipro.com/f5vdfwd/vmview/d213fbc1-9a9d-470e-9474-85c2868e4b02/webclient/index.html#/desktop

Dashboard · GitLab · Mozilla Firefox

Projects · Dashboard x linux command to list x +

topgear-training-gitlab.wipro.com

Projects Groups Activity Milestones Snippets

Projects

Your projects Starred projects Explore projects

Filter by name... Last updated New project

All Personal

AM346617 / 346617-DevOpsProfessional_batch1_Capstone_FeesApplication Reporter

DevOps Capstone Project of Amol Pardikar and Kaushik Roy

updated 6 days ago

avitepa / Demo4July Master

updated a week ago

avitepa / 3Jul1_L2R Master

updated a week ago

pshashid / SelTestForGOL Guest

Selenium tests for Game of Life Application based on Serenity framework

updated a week ago

avitepa / mySonarConfig Master

updated 2 weeks ago

avitepa / ConfigureVDI Master

updated 2 weeks ago

1:59 PM 7/11/2018

New project

A project is where you house your files (repository), plan your work (issues), and publish your documentation (wiki), among other things.

All features are enabled for blank projects, from templates, or when importing, but you can disable them afterward in the project settings.

Open source software to collaborate on code

Manage git repositories with fine grained access controls that keep your code secure. Perform code reviews and enhance collaboration with merge requests. Each project can also have an issue tracker and a wiki.

Tip: You can also create a project from the command line. [Show command](#)

Blank project Create from template Import project

Project path
http://topgear-training-gitlab.wipro.com/AVITEPA/

Project name
L2R

Project description (optional)
Description format

Visibility Level

- ☒ Private
Project access must be granted explicitly to each user.
- ☐ Internal
The project can be accessed by any logged in user.
- ☐ Public
The project can be accessed without any authentication.

Create project Cancel

avitepa / L2R · GitLab

topgear-training-gitlab.wipro.com/AVITEPA/L2R

Projects Groups Activity Milestones Snippets

This project Search

L L2R

Overview

Details

Activity

Cycle Analytics

Issues 0

Merge Requests 0

CI / CD

Wiki

avitepa > L2R > Details

Project 'L2R' was successfully created.

L

L2R

Star 0 HTTP http://topgear-training-gitlab.wipro.com/AVITEPA/L2R

Create new...

The repository for this project is empty

If you already have files you can push them using the command line instructions below

dynamic Webtop VMware Horizon

Secure https://topgearvm.wipro.com/f5vdifwd/vmview/d213fbc1-9a9d-470e-9474-85c2868e4b02/webclient/index.html#/desktop

L2R · GitLab · Mozilla Firefox

avitepa / L2R · GitLab

linux command to list

topgear-training-gitlab.wipro.com/AVITEPA/L2R

Projects Groups Activity Milestones Snippets

This project Search

L L2R

Overview

Details

Activity

Cycle Analytics

Existing folder

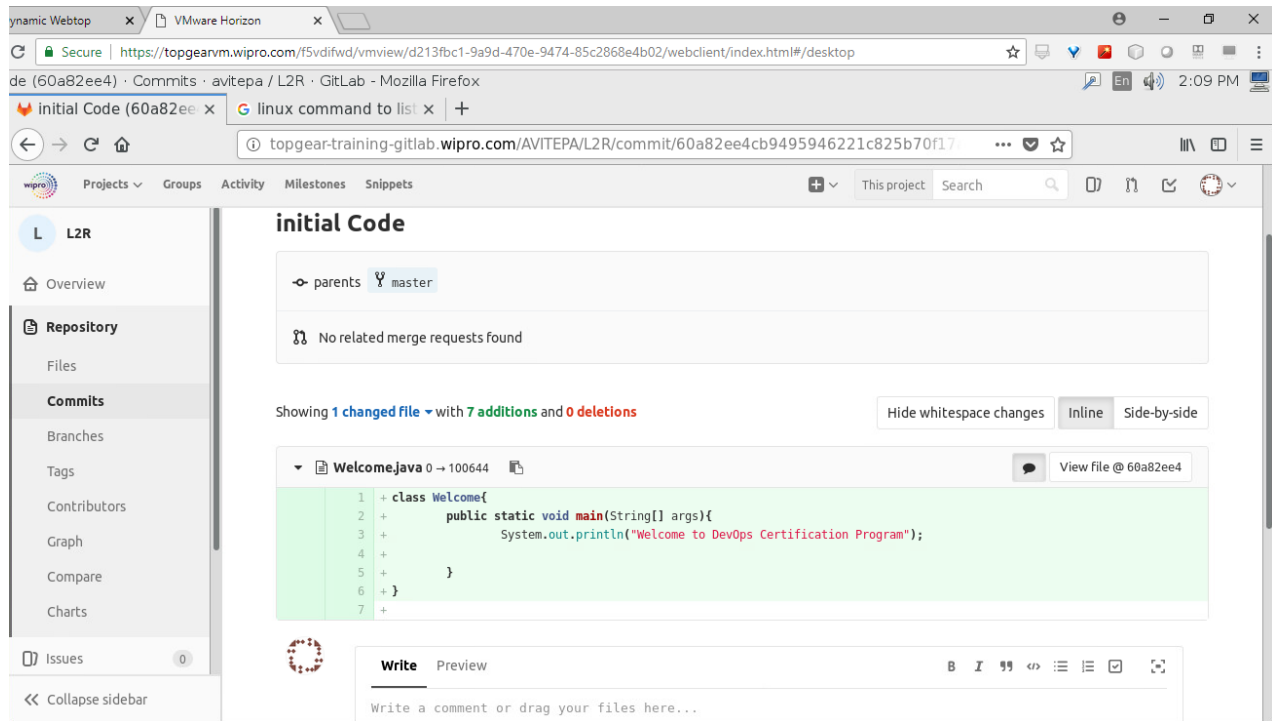
```
git clone http://topgear-training-gitlab.wipro.com/AVITEPA/L2R.git
cd L2R
touch README.md
git add README.md
git commit -m "add README"
git push -u origin master
```

- Push local repository details to Remote/Central Repository

```
osgdev@TG-DevOps-OS115: ~/lab2/L2R
osgdev@TG-DevOps-OS115:~/lab2/L2R$ git remote add origin http://topgear-training-gitlab.wipro.com/AVITEPA/L2R.git
osgdev@TG-DevOps-OS115:~/lab2/L2R$ git push -u origin master
Username for 'http://topgear-training-gitlab.wipro.com': avitepa
Password for 'http://avitepa@topgear-training-gitlab.wipro.com':
Counting objects: 6, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (6/6), 616 bytes | 0 bytes/s, done.
Total 6 (delta 1), reused 0 (delta 0)
To http://topgear-training-gitlab.wipro.com/AVITEPA/L2R.git
 * [new branch]      master -> master
Branch master set up to track remote branch master from origin.
osgdev@TG-DevOps-OS115:~/lab2/L2R$
```

The screenshot shows the GitLab web interface for the project 'topgear-training-gitlab.wipro.com/AVITEPA/L2R'. The left sidebar contains navigation links: Overview, Details, Activity, Cycle Analytics, Repository, Issues (0), Merge Requests (0), CI/CD, and Wiki. The main content area displays the 'master' branch selected, with a 'L2R / +' dropdown and buttons for 'History', 'Find file', and a refresh icon. Below this, a commit titled 'Modified Code-1' by 'avitepa' is shown, authored 16 minutes ago, with commit hash '5713339e'. A table below the commit lists the files: 'Welcome.java' and 'Modified Code-1', both updated 16 minutes ago.

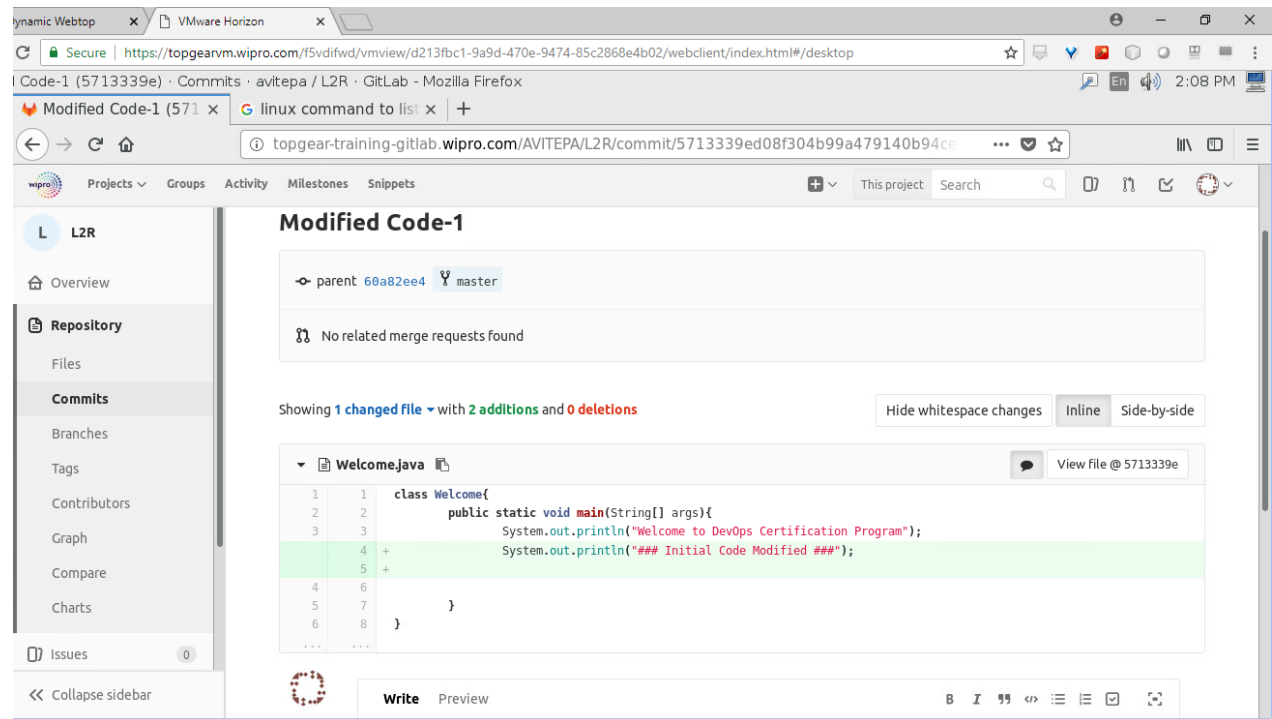
The screenshot shows the 'Commits' page for the 'master' branch in the project 'topgear-training-gitlab.wipro.com/AVITEPA/L2R'. The left sidebar is the same as the previous screenshot. The main content area shows the commit history for the 'master' branch, with a 'Filter by commit message' input field and a refresh icon. Below this, a list of commits is shown, starting with '11 Jul, 2018 2 commits'. The first commit is 'Modified Code-1' by 'avitepa', authored 16 minutes ago, with commit hash '5713339e'. The second commit is 'Initial Code' by 'avitepa', authored 21 minutes ago, with commit hash '60a82ee4'. Both commits have a 'Browse Files' button next to them.



The screenshot shows the GitLab web interface for a project named 'topgear-training-gitlab'. The left sidebar contains navigation links: Overview, Repository (Files, Commits, Branches, Tags, Contributors, Graph, Compare, Charts), and Issues (0). The main content area is titled 'initial Code' and shows the commit history. The selected commit is '60a82ee4' with the message 'Initial Code (60a82ee4)'. The commit details show 'Showing 1 changed file with 7 additions and 0 deletions'. The file 'Welcome.java' is shown with the following code:

```
1 + class Welcome{
2 +     public static void main(String[] args){
3 +         System.out.println("Welcome to DevOps Certification Program");
4 +     }
5 + }
6 +
7 +
```

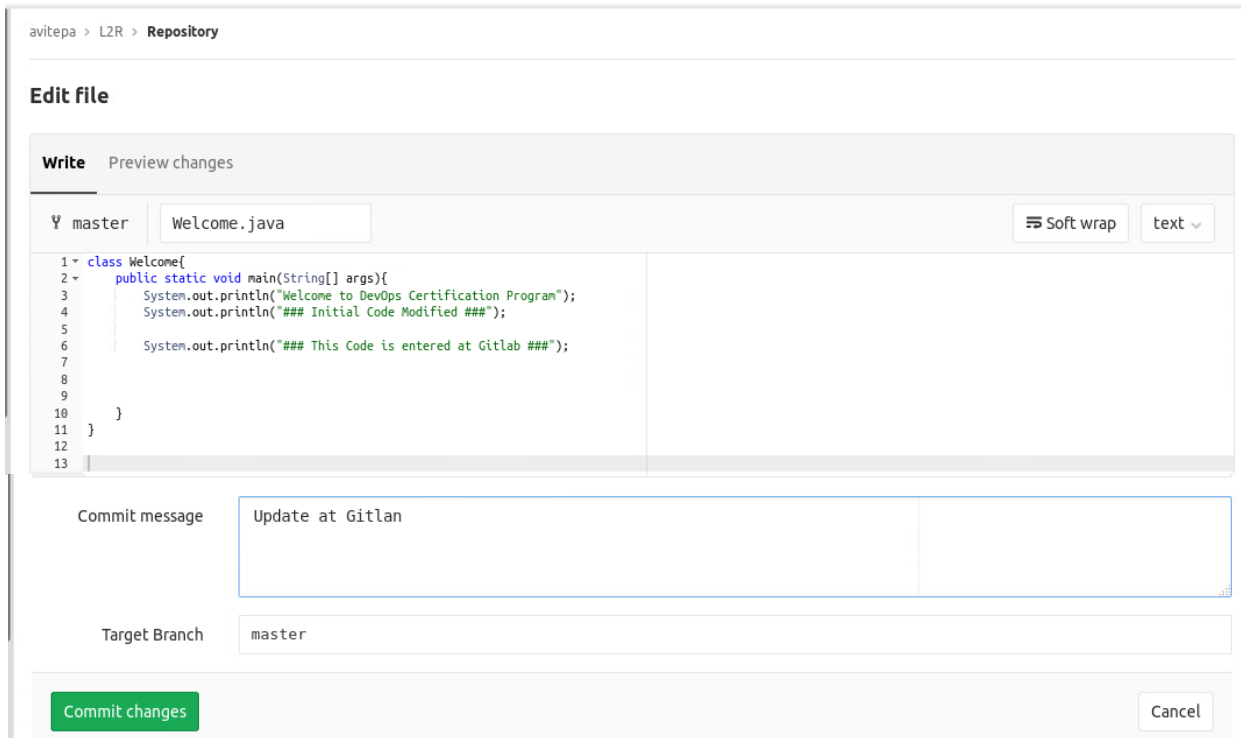
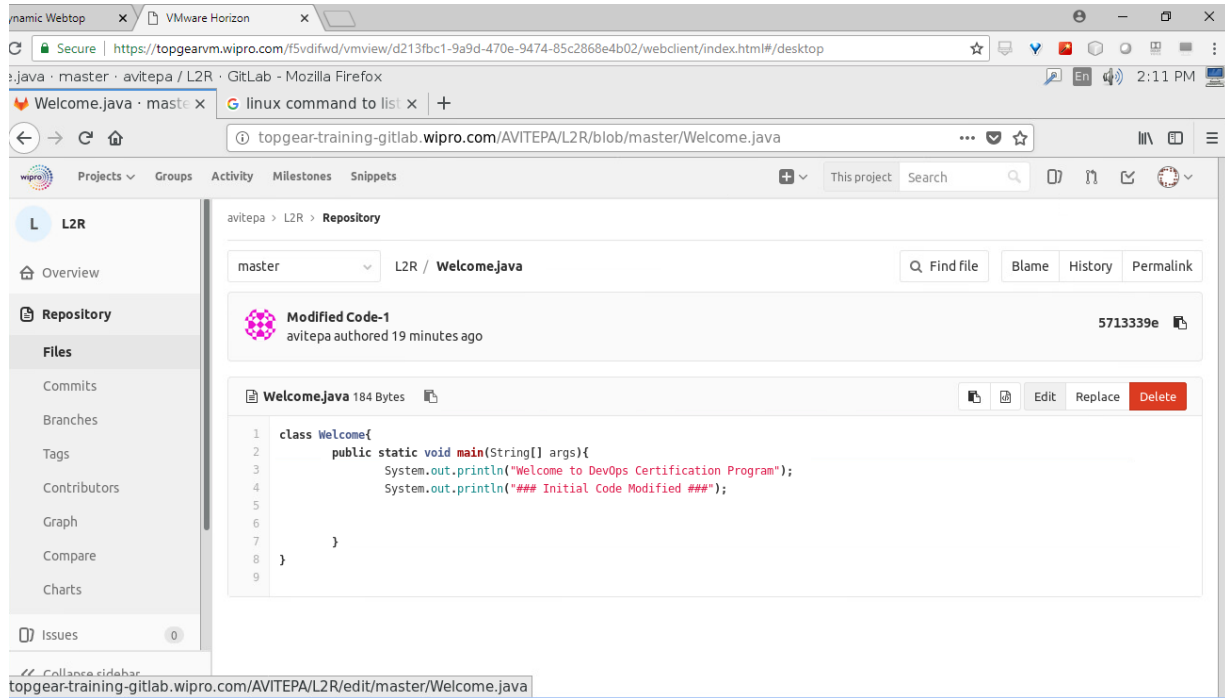
The bottom of the interface has a 'Write' tab and a 'Preview' tab, with a text area for writing a comment or dragging files.

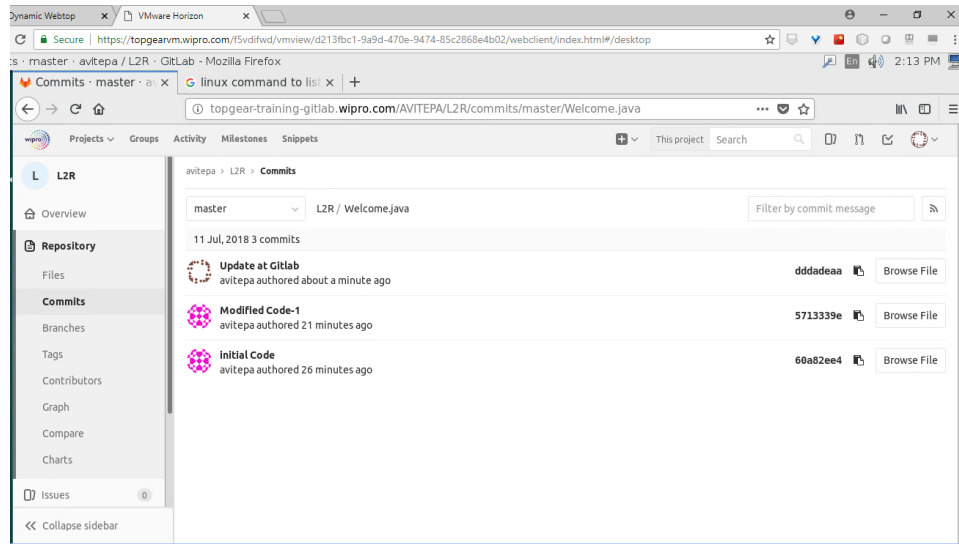


The screenshot shows the GitLab web interface for the same project, now displaying a modified commit. The left sidebar is the same. The main content area is titled 'Modified Code-1' and shows the commit history. The selected commit is '5713339e' with the message 'Code-1 (5713339e)'. The commit details show 'Showing 1 changed file with 2 additions and 0 deletions'. The file 'Welcome.java' is shown with the following code:

```
1 1 class Welcome{
2 2     public static void main(String[] args){
3 3         System.out.println("Welcome to DevOps Certification Program");
4 4 +         System.out.println("### Initial Code Modified ###");
5 5 +     }
6 6
7 7 }
8 8
... ..
```

The bottom of the interface has a 'Write' tab and a 'Preview' tab, with a text area for writing a comment or dragging files.





- Remote To Local

```
osgdev@TG-DevOps-0S115:~/Lab2/L2R$ cd
osgdev@TG-DevOps-0S115:~$ mkdir R2L
osgdev@TG-DevOps-0S115:~$ cd R2L/
osgdev@TG-DevOps-0S115:~/R2L$ git clone http://topgear-training-gitlab.wipro.com/AVITEPA/L2R
Cloning into 'L2R'...
Username for 'http://topgear-training-gitlab.wipro.com': avitepa
Password for 'http://avitepa@topgear-training-gitlab.wipro.com':
remote: Counting objects: 9, done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 9 (delta 2), reused 0 (delta 0)
Unpacking objects: 100% (9/9), done.
Checking connectivity... done.
osgdev@TG-DevOps-0S115:~/R2L$ git log
fatal: Not a git repository (or any of the parent directories): .git
osgdev@TG-DevOps-0S115:~/R2L$ cd L2R/
osgdev@TG-DevOps-0S115:~/R2L/L2R$ git log
commit dddadeaad896bfa3e6bdaa177bf013ad492cc0c2
Author: avitepa <avinash.patel@wipro.com>
Date: Wed Jul 11 14:12:26 2018 +0530
```

Update at Gitlab

```
commit 5713339ed08f304b99a479140b94ce00e4b0974c
Author: avitepa <osgdev@TG-DevOps-0S115.wipro.com>
Date: Wed Jul 11 13:51:50 2018 +0530
```

Modified Code-1

```
commit 60a82ee4cb9495946221c825b70f17ae6283e744
Author: avitepa <osgdev@TG-DevOps-0S115.wipro.com>
Date: Wed Jul 11 13:46:58 2018 +0530
```

initial Code

```
osgdev@TG-DevOps-0S115:~/R2L/L2R$ █
osgdev@TG-DevOps-0S115:~/R2L/L2R$ gedit Welcome.java
osgdev@TG-DevOps-0S115:~/R2L/L2R$ cat Welcome.java
class Welcome{
    public static void main(String[] args){
        System.out.println("Welcome to DevOps Certification Program");
        System.out.println("### Initial Code Modified ###");

        System.out.println("### This Code is entered at Gitlab ###");
        System.out.println("### This Code is entered after clone and pushed bak to
Gitlabs ###");

    }
}
```

```

osgdev@TG-DevOps-OS115: ~/R2L/L2R
osgdev@TG-DevOps-OS115:~/R2L/L2R$ git push origin master
Username for 'http://topgear-training-gitlab.wipro.com': avitepa
Password for 'http://avitepa@topgear-training-gitlab.wipro.com':
Everything up-to-date
osgdev@TG-DevOps-OS115:~/R2L/L2R$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   Welcome.java

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

osgdev@TG-DevOps-OS115:~/R2L/L2R$ git commit -a -m "Modified & Pushed"
[master f923626] Modified & Pushed
Committer: avitepa <osgdev@TG-DevOps-OS115.wipro.com>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

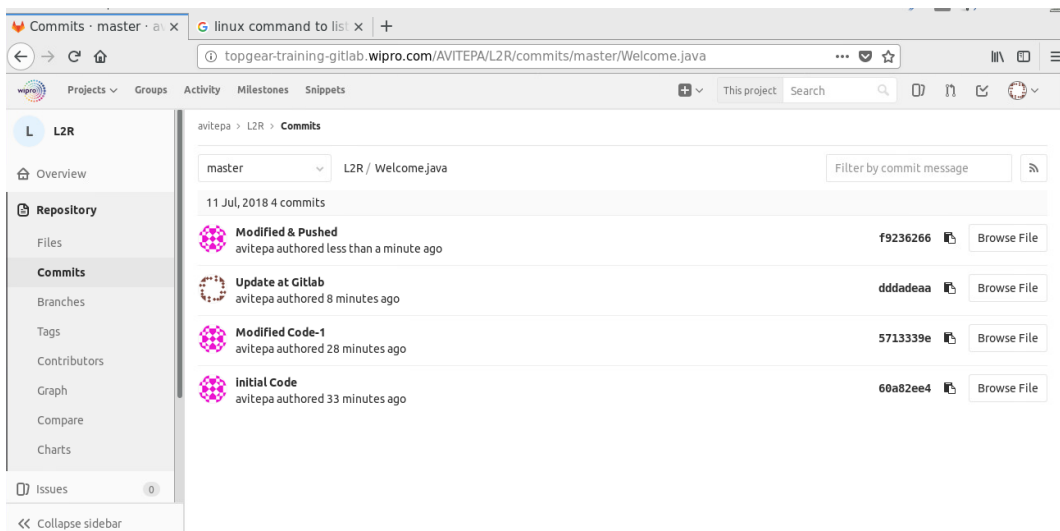
    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

1 file changed, 1 insertion(+)
osgdev@TG-DevOps-OS115:~/R2L/L2R$ git push origin master
Username for 'http://topgear-training-gitlab.wipro.com': avitepa
Password for 'http://avitepa@topgear-training-gitlab.wipro.com':
Counting objects: 3, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 350 bytes | 0 bytes/s, done.
Total 3 (delta 1), reused 0 (delta 0)
To http://topgear-training-gitlab.wipro.com/AVITEPA/L2R
   dddadea..f923626  master -> master
osgdev@TG-DevOps-OS115:~/R2L/L2R$

```



Explore

- Clone source copy from remote repository and push modified copy
- Track source file(s) locally - Access previous commit by ref/tag

- Branch - Merge, Rebase & Cherry-pick
- Difference between Merge, Rebase and cherry-pick
- rewrite & rollback
- delete tags / branch
- gitignore, provide access to others