



Kernel Masters

Kernel Masters GITLAB Guidelines

For Kernel Masters Lab Experiments



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1. Setup Kernel Masters GITLAB

1.1. Install the below packages

```
$ sudo apt-get update  
$ sudo apt-get install vim git ssh
```

1.2. Git configuration

```
$ git config user.name "<Your_full_name>"  
$ git config user.email "<Your_email>"
```

1.3. Check your Lab Assignment Status in Web Interface

Login URL: www.kernelmasters.org click "gitlab" tab

User name: KMID

Default password: password

And change your password immediately.

1.4. Activate KMSERVER access (Optional) – Ignore this step for now

Follow the below procedure to create and add a SSH key in your gitlab account.

- a. Run the following command and press enter key for 3 times. It will create .pub file in your home directory.

Hint:

```
$ ssh-keygen  
$ cat ~/.ssh/id_rsa.pub
```

- b. Copy public key in to you gitlab account.

Go to git lab Settings-> click on "SSH Keys" Tab option->Copy key Here and click save.

2. Upload Assignments in Repository

PATH in your system

Syntax: `~/KM_GITLAB/<KMID_Repo>/<Subject_Name>/<Topic_Name>/`

Example: `~/KM_GITLAB/KM01ESD01/C_Basics/helloworld/`

2.1. Download your repository from KM GITLAB server

Create a KM_GITLAB folder in your home directory and clone lab assignment repository.

Syntax: `git clone http://138.197.197.6/<Batch>/<KMID>.git`

Example:

```
km@kernelmasters:~$ mkdir ~/KM_GITLAB
```

```
km@kernelmasters:~$ cd KM_GITLAB
```

```
km@kernelmasters:~/KM_GITLAB$ git clone http://138.197.197.6/km01/km01esd01.git
```

Follow the below procedure to do all the assignments inside repository (KMID is name of the repository) and upload to KMGITLAB server.

2.2. Step 1: Create a Subject name, topic name folders inside your repository

Create a Folder Name with the given Subject name. Topic name to be used will be given along with assignments.

Example:

Go to repository

```
km@kernelmasters:~$ cd ~/KM_GITLAB/<KMID>
```

Create a folder name is Subject name like C_Basics, C_Advanced, ALP, Embedded_C, LSP, LDD ..

```
km@kernelmasters:~/KM_GITLAB/<KMID>$ mkdir C_Basics ; cd C_Basics
```

Create a folder name is Topic name like Operators, Pointers..

```
km@kernelmasters:~/KM_GITLAB/<KMID>/C_Basics$ mkdir helloworld; cd helloworld
```

```
km@kernelmasters:~/KM_GITLAB/<KMID>/C_Basics/helloworld$ vim README.md
```

Create a README.md file with a list of all assignments given and store it in the topic folder. So for every new topic creates one README.md file, it shows the list of lab assignments.

README.md file example:

```
## Date: xx-xx-xxxx ; Topic: helloworld
```

1. Write a program print "Hello World" in monitor?

2.3. Step 2: Doing Lab assignments

Create new source files inside topic folder and write a program according to the question. Once successfully build and test the program.

Example:

Go to topic folder

```
km@kernelmasters~$ cd ~/KM_GITLAB/<KMID>/C_Basics/helloworld
```

create source file hello.c and write a program

```
km@kernelmasters:~/KM_GITLAB/<KMID>/C_Basics/helloworld $ vim hello.c
```

compile hello.c source file using gcc command.

```
$ gcc hello.c -o hello
```

Test hello program

```
$ ./hello
```

Never copy the assignments from others or from internet or textbook. Only discuss and try your own.

2.4. Step 3: Create a commit ID

After successfully tested every lab assignment do the commit messages in the below format:

Syntax: `$ git commit -m "<TopicName>_<Assignment_No>_<Question>"`

Example:

```
$ git add *.c
```

```
$ git commit -m "helloworld_1_ WAP to print Hello World."
```

2.5. Step 4: Upload source file in to gitlab server

End of the Day after completion of all assignments push source code to the server.

```
km@kernelmasters:~/KM_GITLAB/<KMID>$ git push origin master
```

Assignment status should be updated in the LAB assignment record with both student and lab instructor signature, before the student leaves for the day.

3. Lab Support

3.1. Lab Assignments Hierarchy Level for Clarification of Doubts:

LAB PARTNERS: Every student is required to have a lab partner. You will perform all labs with a partner. Students choose their own lab partners during the first week.

First Level: Try to do yourself

Second Level: Discuss With your lab partners.

Third Level: Ask Lab Instructor.

Fourth Level: Ask Class Instructor.