

Course- BTech/BCA/B.Sc: (B.Tech)
Course Code- ECSE460L

Year- III (VI Sem)
Date- 24-01-2022

Type- Core/Elective (Elective)
Course Name: DevOps Engineering
Practices
Semester- Even/Odd (Even)
Batch- B1-B14

A- Type- Lab Assignment (Week 1, Lab 1)

Objectives:

Create two EC-2 instance (Mumbai region)

Update Virtual linux machine

Install GIT on virtual linux

GIT Commands

- 1) `sudo su`
- 2) `yum update -y`
- 3) `yum install git -y`
- 4) `git --version`
- 5) `git config --global user.name ""`
- 6) `git config --global user.email ""`

Theoretical Background (To be discussed): 30 mins:

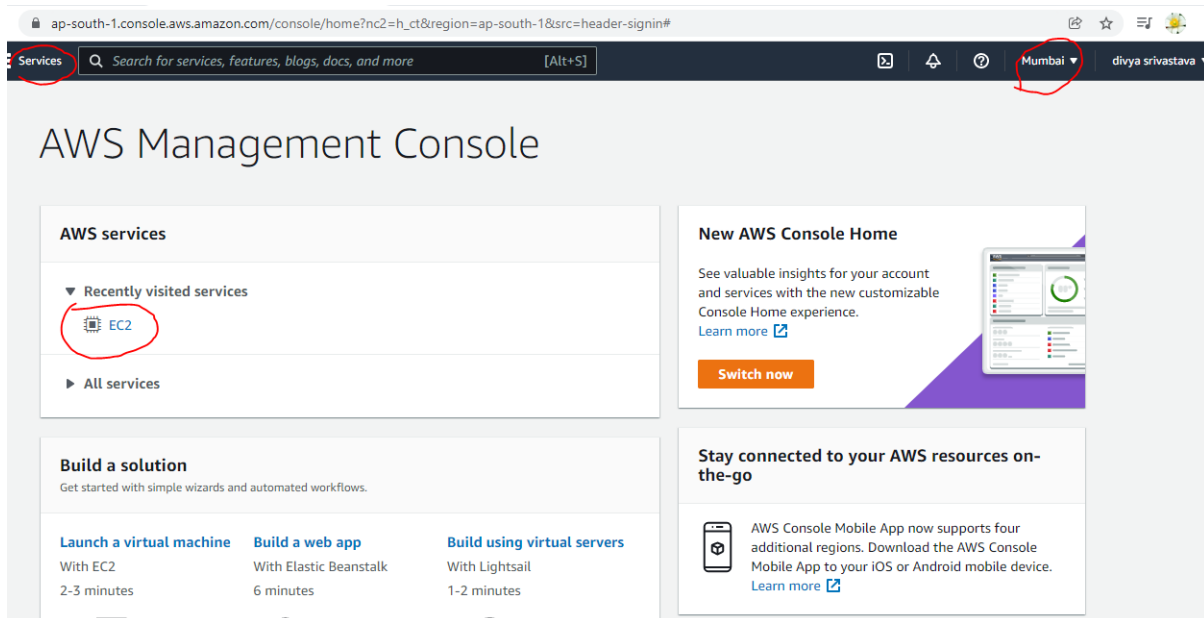
Creation of ec-2 instance:

Ec2-instance Mumbai:

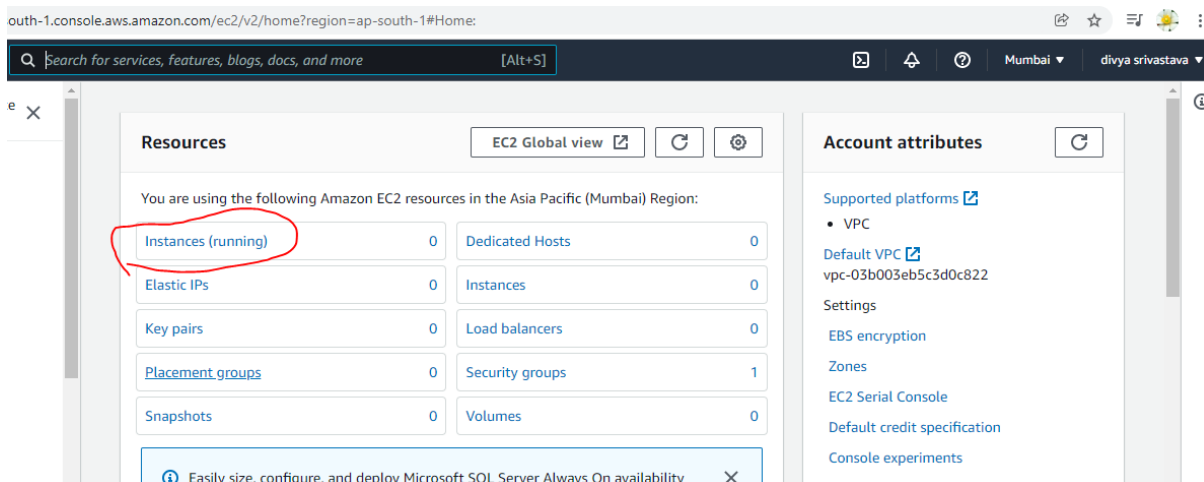
1) Creation of Linux instance on AWS (20)

Create an account on AWS Learner Lab:

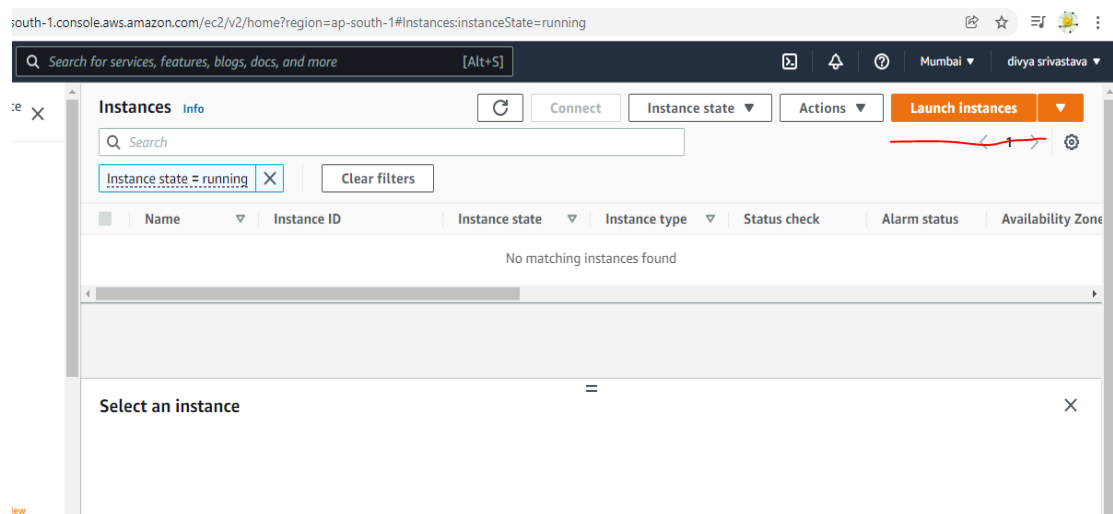
- a) **Login as I am user**
- b) **After AWS Management Console screen comes follow the following steps:**



Services-> EC2



Instances running



Launch Instances

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:


Search for services, features, blogs, docs, and more [Alt+S]

Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Choose an Amazon Machine Image (AMI)

Cancel and Exit

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes



Amazon Linux
Free tier eligible

Amazon Linux 2 AMI (HVM) - Kernel 4.14, SSD Volume Type - ami-08181691f669ef7d2 (64-bit x86) / ami-02085663f89f6faa5 (64-bit Arm) **Select**

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is now under maintenance only mode and has been removed from this wizard.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

macOS Monterey 12.1 - ami-01f13edade731d304 **Select**

The macOS Monterey AMI is an EBS-backed, AWS-supported image. This AMI includes the AWS Command Line Interface, Command Line Tools for Xcode, Amazon SSM Agent, and Homebrew. The AWS Homebrew Tap includes the latest versions of multiple AWS packages included in the AMI.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

macOS Big Sur 11.6.2 - ami-03b0e4a0900e9a1d5 **Select**

The macOS Big Sur AMI is an EBS-backed, AWS-supported image. This AMI includes the AWS Command Line Interface, Command Line Tools for Xcode, Amazon SSM Agent, and Homebrew. The AWS Homebrew Tap includes the latest versions of multiple AWS packages included in the

Select: Amazon Linux 2 AMI

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:

Services Search for services, features, blogs, docs, and more [Alt+S]

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance families Current generation Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes

Cancel Previous **Review and Launch** Next: Configure Instance Details

By default,

ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:

Services Search for services, features, blogs, docs, and more [Alt+S]

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 4: Add Storage

edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-0822a589f72db9044	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Shared file systems

You currently don't have any file systems on this instance. Select "Add file system" button below to add a file system.

Cancel Previous **Review and Launch** Next: Add Tags

micro is selected. Keep it as it is -> Next Configure instance defaults

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.

A copy of a tag can be applied to volumes, instances or both.

Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key	Value	Instances	Volumes	Network Interfaces
Name	linux	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Add another tag](#) (Up to 50 tags maximum)

Add: Name and Tag

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group
☐ Select an existing security group

Security group name: launch-wizard-1
 Description: launch-wizard-1 created 2022-01-15T10:55:37.124+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Anywhere 0.0.0.0/0:::0	e.g. SSH for Admin Desktop

[Add Rule](#)

AMI Details

Amazon Linux 2 AMI (HVM) - Kernel 4.14, SSD Volume Type - ami-08181691f669ef7d2
 Free tier eligible
 Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is n...
 Root Device Type: ebs Virtualization type: hvm

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

[Cancel](#) [Previous](#) [Launch](#)

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance. Amazon EC2 supports ED25519 and RSA key pair types.

Note: The selected key pair will be added to the set of keys authorized for this instance. [Learn more about removing existing key pairs from a public AMI.](#)

☒ Create a new key pair

Key pair type
☒ RSA ☐ ED25519

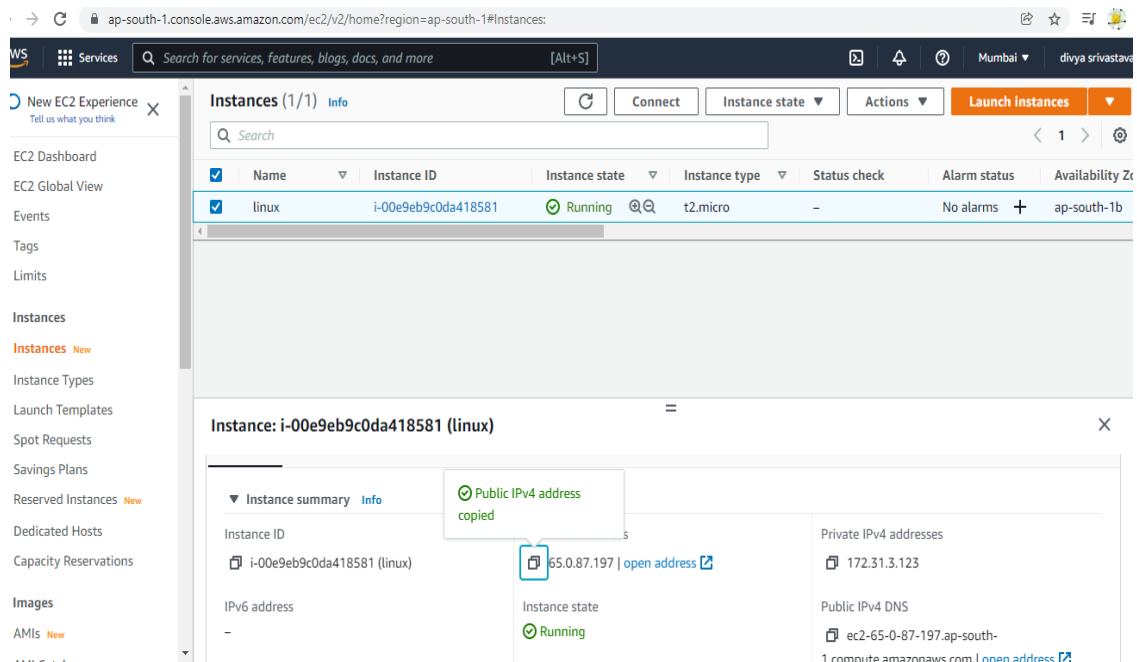
Key pair name
 linuxlab1

[Download Key Pair](#)

You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

[Cancel](#) [Launch Instances](#)

***Note: Download the key pair here only else it will not be available later**



Copy the IP Address (Public IP)

Putty and Putty Gen: (15)

a) Download Putty and puttygen

b) Open puttygen on your desktop and load the the key pair generated by AWS EC2 instance.

c) Open putty to create a private key to connect AWS and putty by doing as follows:

SSH->Auth-> <paste the IP address> and download the private key

Once this is done Linux terminal gets open:

Login as: ec2-user

(30)

```
login as: ec2-user
Authenticating with public key "imported-openssh-key"

    _ | _ | _ |
    _ | ( _ | _ | /
    _ | \ _ | _ |

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
11 package(s) needed for security, out of 15 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-24-118 ~]$ sudo su
[root@ip-172-31-24-118 ec2-user]# yum update -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core | 3.7 kB 00:00
Resolving Dependencies
--> Running transaction check
---> Package ca-certificates.noarch 0:2021.2.50-72.amzn2.0.1 will be updated
---> Package ca-certificates.noarch 0:2021.2.50-72.amzn2.0.2 will be an update
---> Package cloud-utils-growpart.noarch 0:0.31-2.amzn2 will be updated
---> Package cloud-utils-growpart.noarch 0:0.31-3.amzn2 will be an update
---> Package dracut.x86_64 0:033-535.amzn2.1.4 will be updated
---> Package dracut.x86_64 0:033-535.amzn2.1.5 will be an update
---> Package dracut-config-generic.x86_64 0:033-535.amzn2.1.4 will be updated
---> Package dracut-config-generic.x86_64 0:033-535.amzn2.1.5 will be an update
---> Package glibc.x86_64 0:2.26-56.amzn2 will be updated
---> Package glibc.x86_64 0:2.26-57.amzn2 will be an update
Complete!
[root@ip-172-31-24-118 ec2-user]# yum install git -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
---> Package git.x86_64 0:2.32.0-1.amzn2.0.1 will be installed
--> Processing Dependency: perl-Git = 2.32.0-1.amzn2.0.1 for package: git-2.32.0-1.amzn2.0.1.x86_64
--> Processing Dependency: git-core-doc = 2.32.0-1.amzn2.0.1 for package: git-2.32.0-1.amzn2.0.1.x86_64
--> Processing Dependency: git-core = 2.32.0-1.amzn2.0.1 for package: git-2.32.0-1.amzn2.0.1.x86_64
--> Processing Dependency: emacs-filesystem >= 27.1 for package: git-2.32.0-1.amzn2.0.1.x86_64
--> Processing Dependency: perl(Term::ReadKey) for package: git-2.32.0-1.amzn2.0.1.x86_64
--> Processing Dependency: perl(Git::I18N) for package: git-2.32.0-1.amzn2.0.1.x86_64
--> Processing Dependency: perl(Git) for package: git-2.32.0-1.amzn2.0.1.x86_64
--> Running transaction check
---> Package emacs-filesystem.noarch 1:27.2-4.amzn2.0.1 will be installed
---> Package git-core.x86_64 0:2.32.0-1.amzn2.0.1 will be installed
---> Package git-core-doc.noarch 0:2.32.0-1.amzn2.0.1 will be installed
---> Package perl-Git.noarch 0:2.32.0-1.amzn2.0.1 will be installed
--> Processing Dependency: perl(Error) for package: perl-Git-2.32.0-1.amzn2.0.1.noarch
---> Package perl-TermReadKey.x86_64 0:2.30-20.amzn2.0.2 will be installed
--> Running transaction check
---> Package perl-Error.noarch 1:0.17020-2.amzn2 will be installed

[root@ip-172-31-24-118/home/ec2-user]# which git
/bin/git
[root@ip-172-31-24-118 ec2-user]# git --version
git version 2.32.0
[root@ip-172-31-24-118 ec2-user]# git config --global user.name "Divya"
[root@ip-172-31-24-118 ec2-user]# git config --global user.email "divya.srivastava@bennett.edu.in"
[root@ip-172-31-24-118 ec2-user]# git --list
unknown option: --list
usage: git [--version] [--help] [-C <path>] [-c <name>=<value>]
      [--exec-path[=<path>]] [--html-path] [--man-path] [--info-path]
      [-p | --paginate | -P | --no-pager] [--no-replace-objects] [--bare]
      [--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
      [--super-prefix=<path>] [--config-env=<name>=<envvar>]
      <command> [<args>]
[root@ip-172-31-24-118 ec2-user]# git config --list
user.name=Divya
user.email=divya.srivastava@bennett.edu.in
[root@ip-172-31-24-118 ec2-user]#
```

GIT for Desktop

Objective:

- 1) Git Desktop Installation
- 2) Create repository on Desktop
- 3) Create repository online
- 4) Clone the repository online to desktop
- 5) Clone repository Git Desktop to online

Git Desktop

GitHub Desktop is an application that enables you to interact with GitHub using a GUI instead of the command line or a web browser.

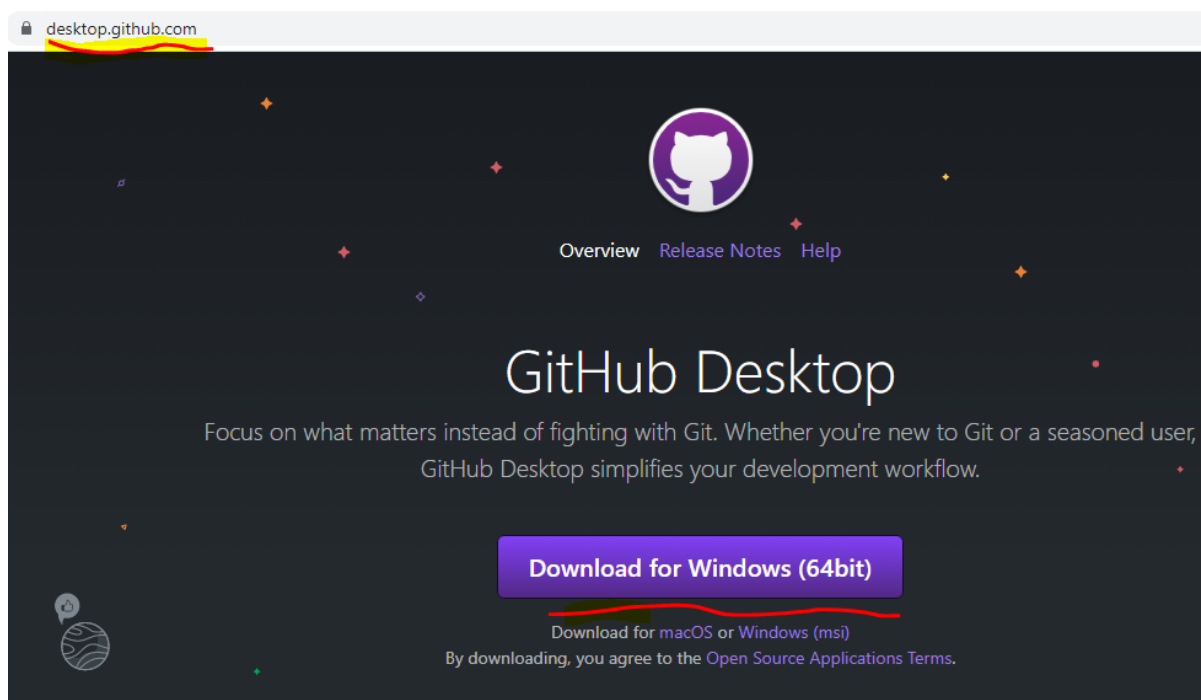
OS supported

The following operating systems are supported for GitHub Desktop.

- macOS 10.10 or later
- Windows 7 64-bit or later. You must have a 64-bit operating system to run GitHub Desktop.

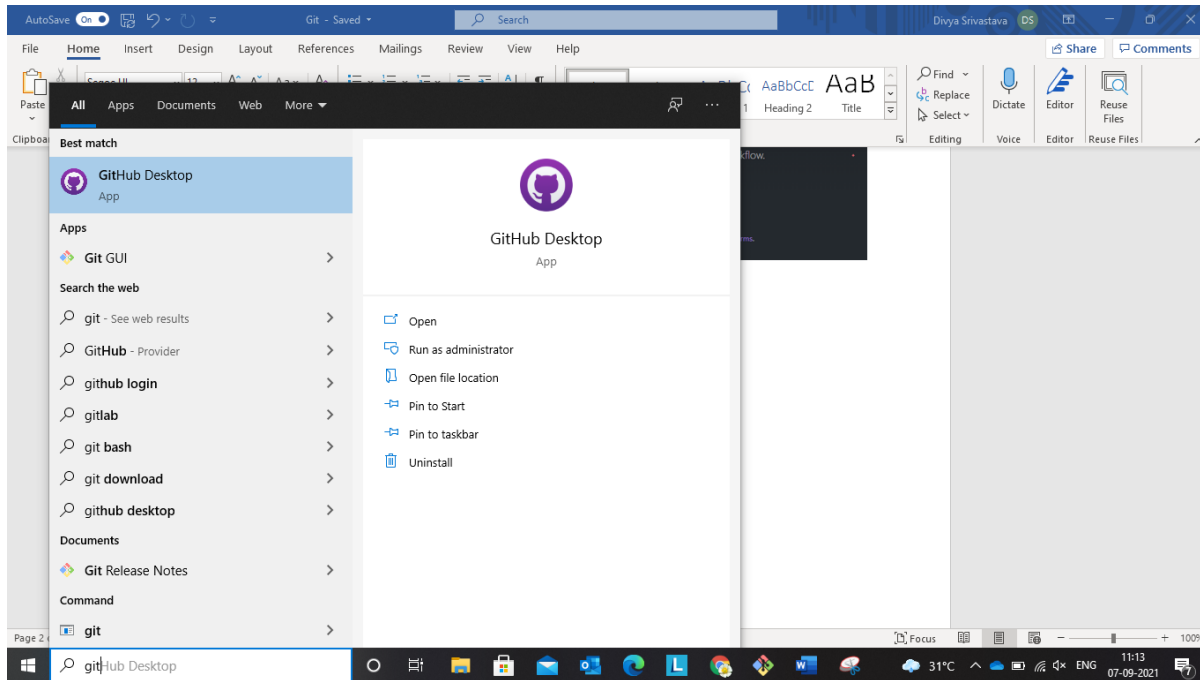
Download Git For Desktop:

www.desktop.github.com



2) Run the setup file

3) Click on the icon in your app:



4) Register your Id on Git to create an account: <https://github.com/signup?source=login>

Welcome to GitHub!

Let's begin the adventure

Enter your email

✓ divya.srivastava@bennett.edu.in

Create a password

✓

Enter a username

✓ Divyabennett

Would you like to receive product updates and announcements via email?

Type "y" for yes or "n" for no

→ n

Continue

Repository Creation

github.com

Search or jump to...

Pull requests

Issues

Marketplace

Explore

Create your first project

Ready to start building? Create a repository for a new idea or bring over an existing repository to keep contributing to it.

Create repository

Import repository

Recent activity

When you take actions across GitHub, we'll provide links to that activity here.

Learn Git and GitHub without any code!

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

Read the guide

Start a project

All activity

Introduce yourself

The easiest way to introduce yourself on GitHub is by creating a README in a repository about you! You can start here:

Divyabennett / README.md

1 - 🙋 Hi, I'm @Divyabennett

2 - 👀 I'm interested in ...

3 - 🍌 I'm currently learning ...

4 - 🤝 I'm looking to collaborate on ...

5 - 📖 How to reach me ...

6

Dismiss this

Continue

Click on create repository:

Owner *

Repository name *

Divyabennett

 /

DevOps lab

Great repository names are short and unique. Your new repository will be created as DevOps-lab. Not silver-garbanzo?

Description (optional)

DevOps Lab demo

☒ Public

Anyone on the internet can see this repository. You choose who can commit.

☐ Private

You choose who can see and commit to this repository.

Initialize this repository with:

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

☒ Add a README file

This is where you can write a long description for your project. [Learn more.](#)

☐ Add .gitignore

Choose which files not to track from a list of templates. [Learn more.](#)

☐ Choose a license

A license tells others what they can and can't do with your code. [Learn more.](#)

This will set `main` as the default branch. Change the default name in your [settings](#).

Create repository

Repository is created as:

Divyabennett / DevOps-lab

<> Code

Issues

Pull requests

Actions

Projects

Wiki

Security

Insights

Settings

main

1 branch

0 tags

Go to file

Add file

Code

Divyabennett Initial commit

5d956cd now

1 commit

README.md

Initial commit


now

README.md

DevOps-lab




DevOps Lab demo


Upload some files and commit the changes



Drag additional files here to add them to your repository

[Or choose your files](#)

 Lecture1.pdf	×
 lecture2.pdf	×
 Devops.pdf	×



Commit changes

Add files via upload

Add an optional extended description...

☒ Commit directly to the `main` branch.

☐ Create a new branch for this commit and start a pull request. [Learn more about pull requests.](#)

Commit changes

Cancel

Final view of repository:

Divyabennett / DevOps-lab

[Code](#) [Issues](#) [Pull requests](#) [Actions](#) [Projects](#) [Wiki](#) [Security](#) [Insights](#) [Settings](#)


main





 1 branch 0 tags

Go to file

Add file

Code

 Divyabennett Add files via upload 8da4a13 now 2 commits

 Devops.pdf	Add files via upload	now
 Lecture1.pdf	Add files via upload	now
 README.md	Initial commit	26 minutes ago
 lecture2.pdf	Add files via upload	now

README.md

DevOps-lab

DevOps Lab demo

Open Git Desktop on your local system

Let's get started!

Add a repository to GitHub Desktop to start collaborating



Clone a repository from the Internet...



Create a New Repository on your hard drive...



Add an Existing Repository from your hard drive...

To clone a repository from Internet:

Let's get started!

Add a repository to GitHub Desktop to start collaborating



Clone a repository from the Internet...



Create a New Repository on your hard drive...



Add an Existing Repository from your hard drive...

Clone a repository



GitHub.com

GitHub Enterprise

URL

Sign in to your GitHub.com account to access your repositories.

Sign in

Sign In:



Sign in to **GitHub**
to continue to **GitHub Desktop**

Username or email address

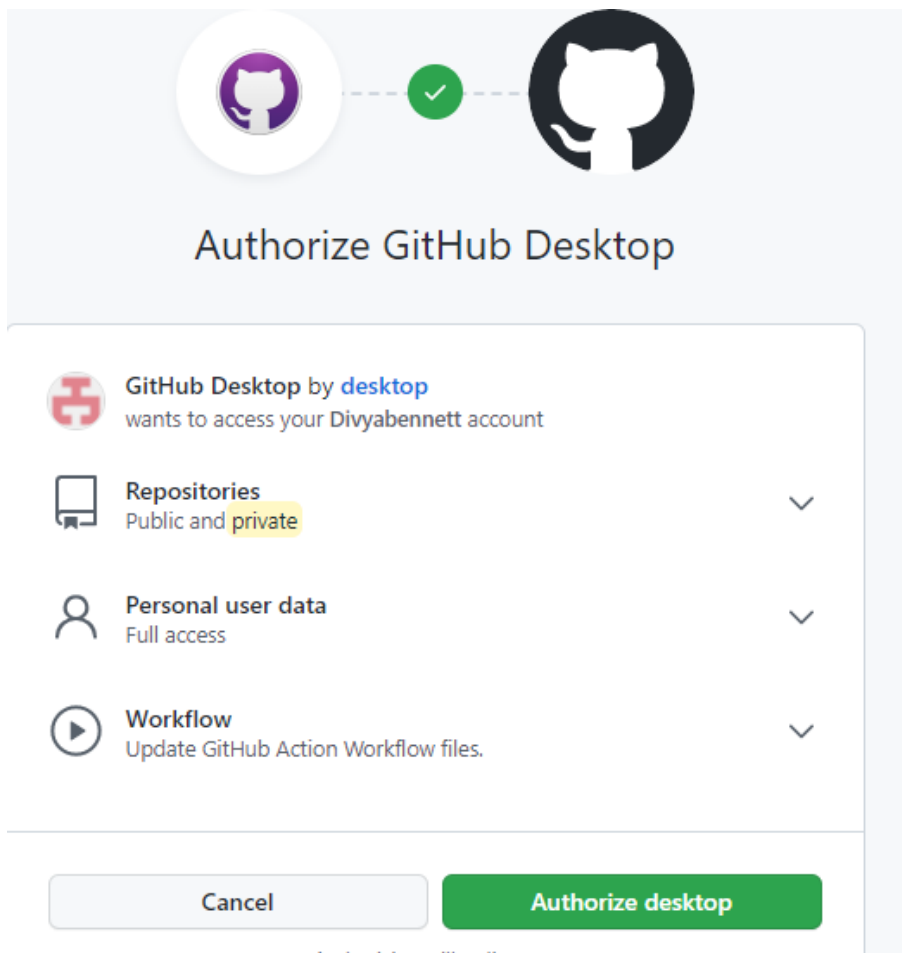
divya.srivastava@bennett.edu.in

Password

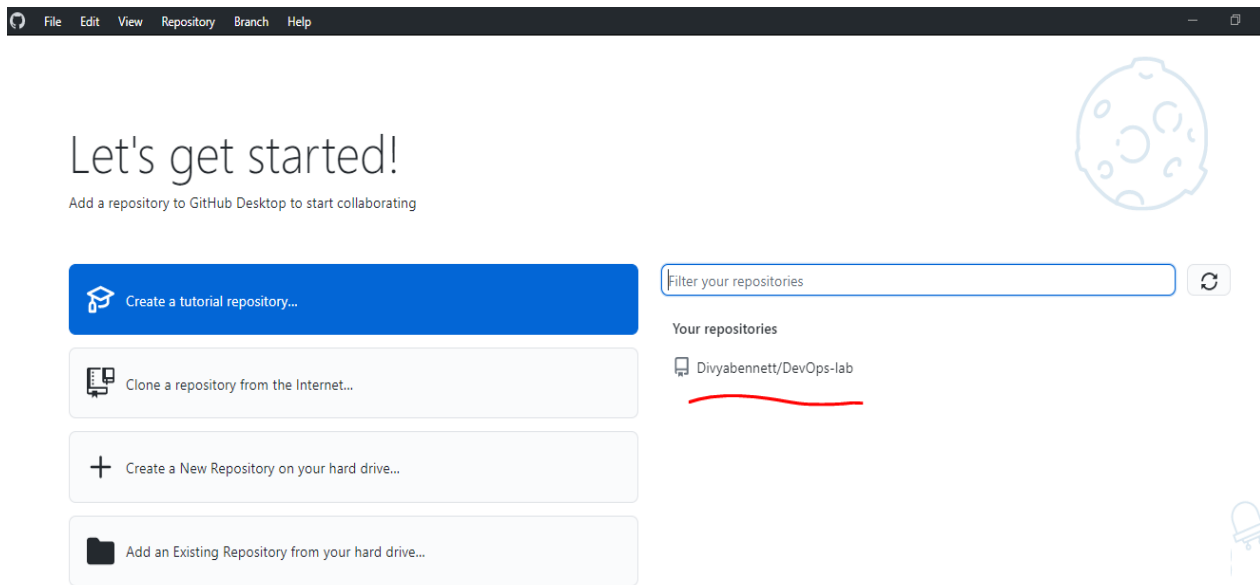
[Forgot password?](#)

.....

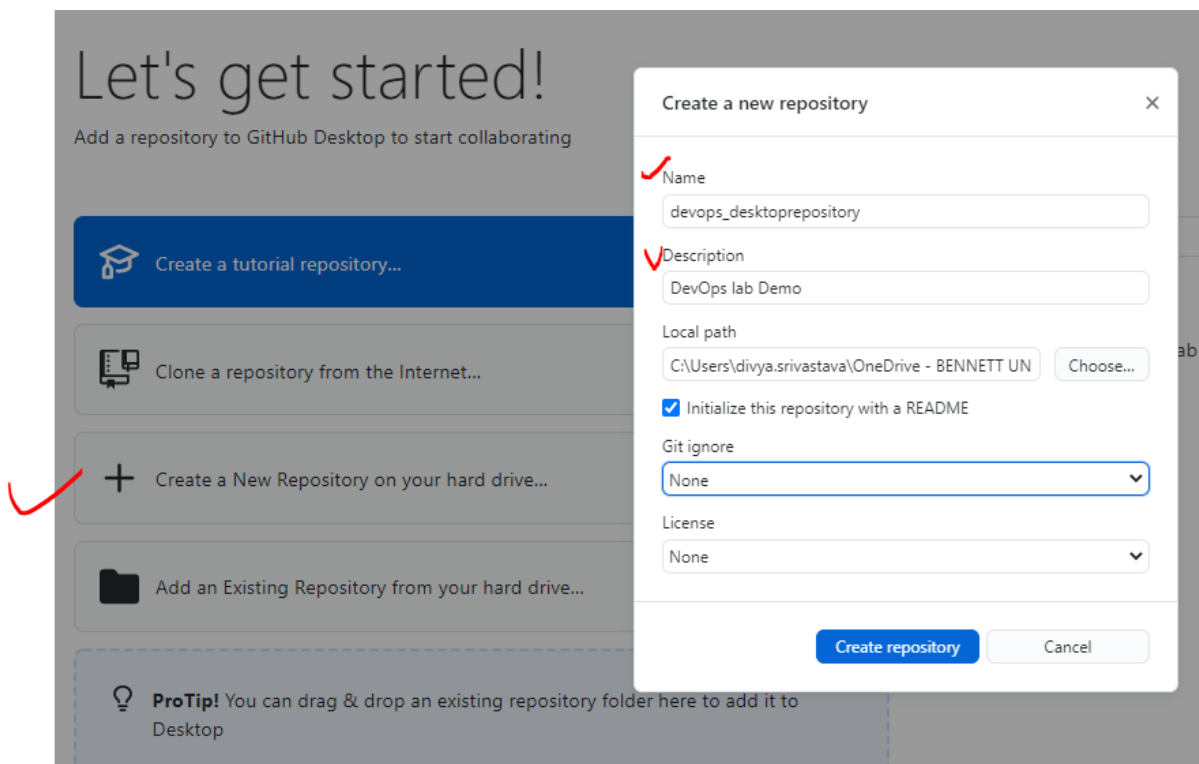
Sign in



Repository (Online) has been cloned on Git Desktop

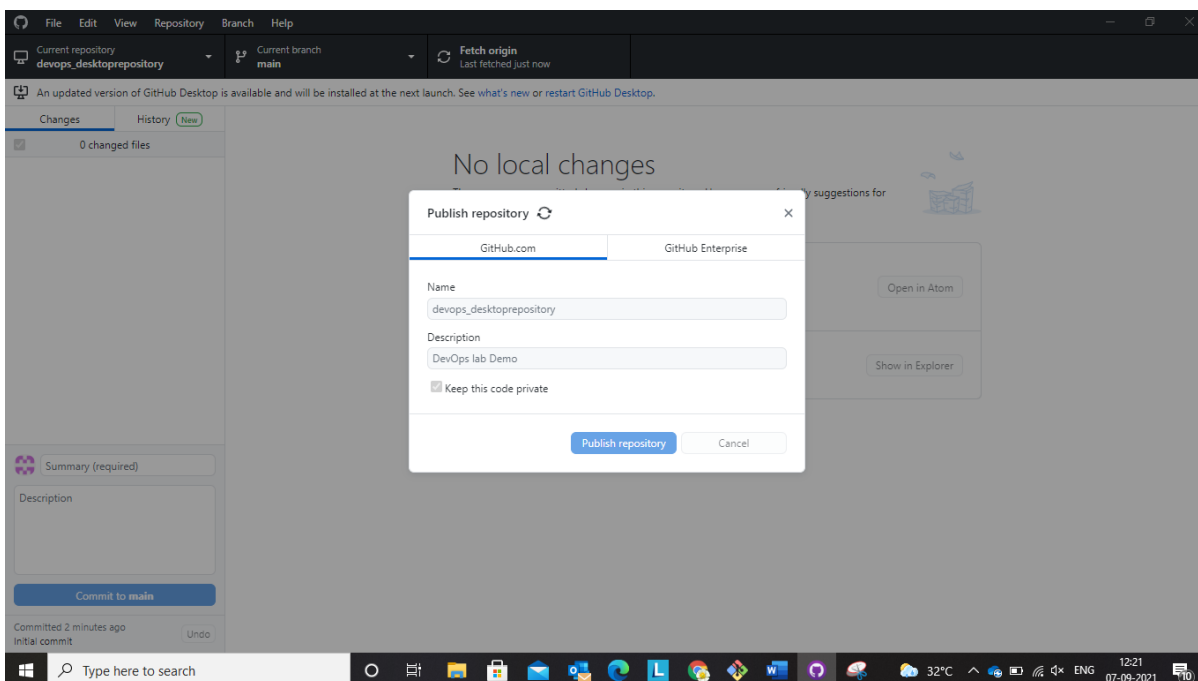
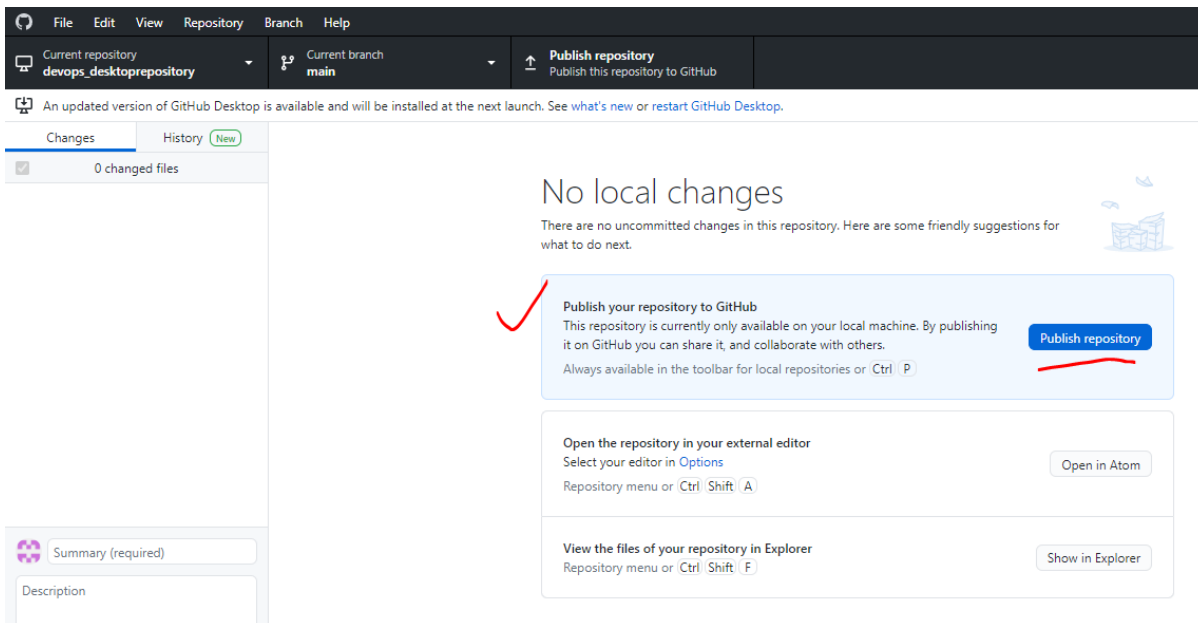


Create a new repository on Git Desktop:



This repository is initially available on your local system only.

To publish it:



The repository created on Git Desktop is reflected online as well



Divyabennett

Edit profile

Joined 1 hour ago

[Overview](#) [Repositories 1](#) [Projects](#) [Packages](#)

Find a repository... [Type](#) [Language](#) [Sort](#) [New](#)

[devops_desktoprepository](#) [Private](#)

DevOps lab Demo

Updated 7 minutes ago

 [Star](#)

[DevOps-lab](#)

DevOps Lab demo

Updated 17 minutes ago

 [Star](#)

