Lab 4: Continuous Integration and Continuous Release

Preambles: Jenkins is a tool to achieve continuous integrations and continuous delivery
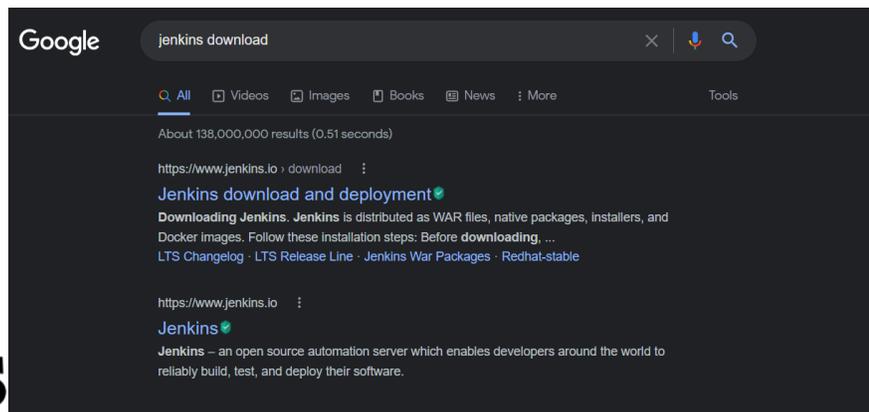
Just google for jenkins download, www.jenkins.io is the official website for the jenkins. Click the first link to download jenkins.

Go for LTS (Long Term Support) version, Out of several options listed select windows, Automatic download of installer file will start. Once done, you can check it's a msi installer.

There are some software requirements also for jenkins, website puts them like this

Software Requirement:

> User Documentation Home

User Handbook

- User Handbook overview
- Installing Jenkins
- Using Jenkins
- Pipeline
- Blue Ocean
- Managing Jenkins
- Securing Jenkins
- System Administration
- Scaling Jenkins
- Troubleshooting Jenkins

Java requirements

There are separate run and job execution requirements for Jenkins installations.

Running Jenkins

Java 8 or Java 11 are required for running modern versions of Jenkins. Upgrading an existing Jenkins s 8 to Java 11? See the upgrade guidelines.

Java 11 Docker installation instructions are included in "Downloading and running Jenkins in Docker"

Starting with the Jenkins 2.357 weekly release, Java 11 or Java 17 will be required. Java 8 is supported Term Support release line until the September 2022 LTS release.

Let's check java's version first, open command window and run the following command to confirm the version of the java


```
Microsoft Windows [Version 10.0.25145.1011]
(c) Microsoft Corporation. All rights reserved.

C:\Users\mzafa>java -version
java version "1.8.0_341"
Java(TM) SE Runtime Environment (build 1.8.0_341-b10)
Java HotSpot(TM) 64-Bit Server VM (build 25.341-b10, mixed mode)

C:\Users\mzafa>
```

If it is 8,11 or 17, it will work fine.

Hardware Requirements: As mentioned at the jenkins website, followings are requirements

Windows

The simplest way to install Jenkins on Windows is to use the Jenkins Windows installer. That program will install Jenkins as a service using a 64 bit JVM chosen by the user. Keep in mind that to run Jenkins as a service, the account that runs Jenkins must have permission to login as a service.

Prerequisites

Minimum hardware requirements:

- 256 MB of RAM
- 1 GB of drive space (although 10 GB is a recommended minimum if

Recommended hardware configuration for a small team:

- 4 GB+ of RAM
- 50 GB+ of drive space

Comprehensive hardware recommendations:

- Hardware: see the Hardware Recommendations page

If these requirements are fulfilled, then proceed for the installation of the jenkins, browse to the download location of the jenkin setup file, double click on it to starting the installation process
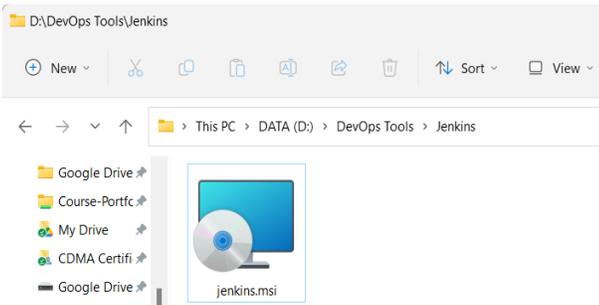
Following screen will appear
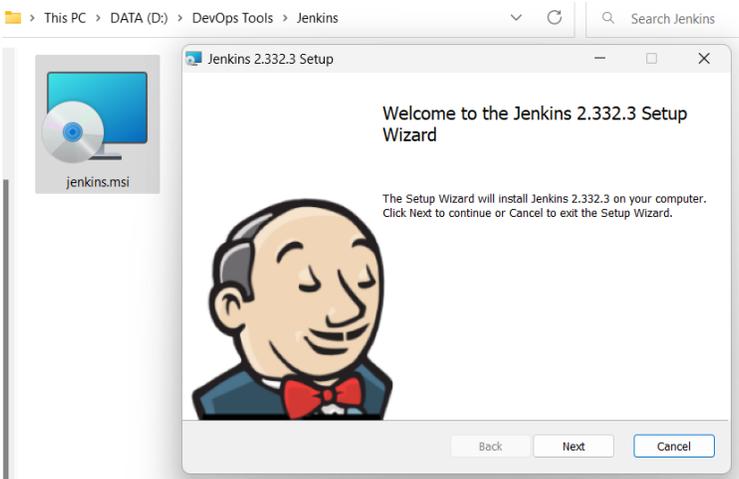
To proceed with the installation process, click on next

Accept the default location, if you don't want to change it
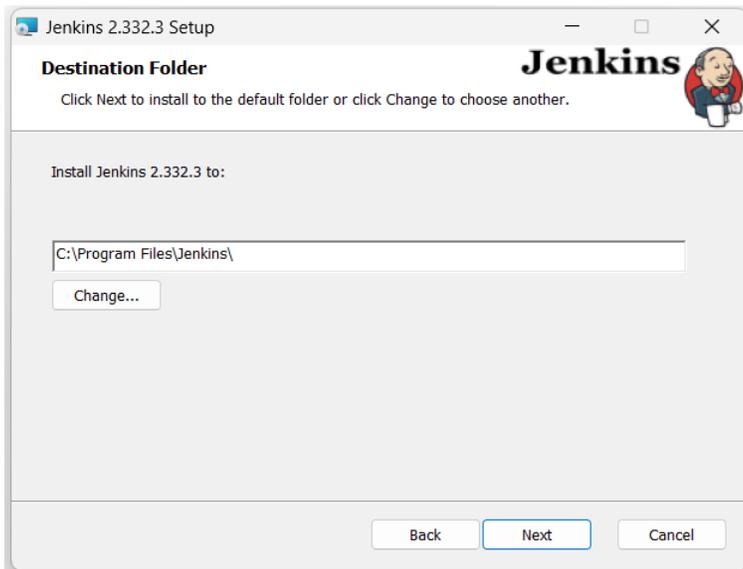
To avoid other overheads, choose first option on the next screen presented.
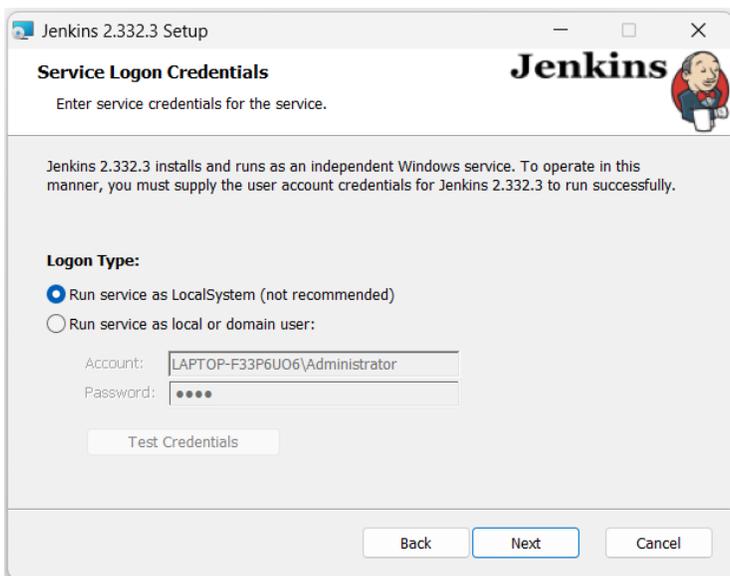
By default, jenkins runs on port 8080, you may test port as well
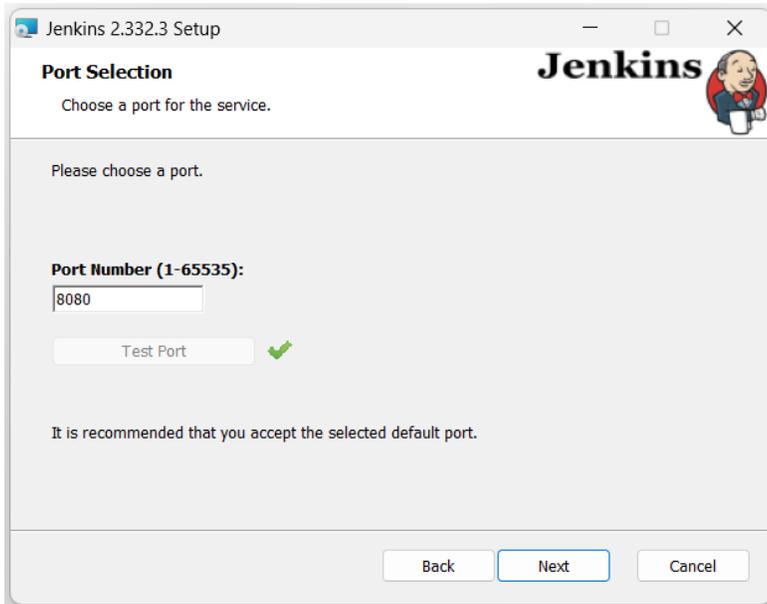
Click next, and let Jenkin select version of java for it, although, jenkins recommends, Java version 11, for sake of compatibility with other tools installed on laptop, I will continue with version 8.

Simply click Ok, if you receive this

Leave the firewall services off, and select next to the next screen
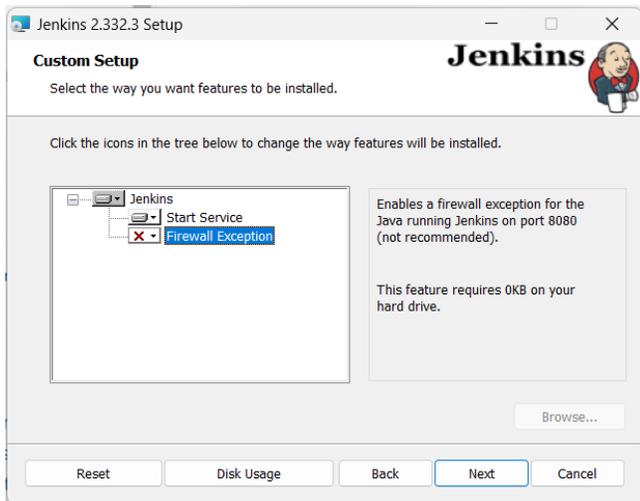
Click on install, to complete the installation process.

Now Jenkins, has been installed at your computer, let's unlock and configure it a bit.

Running, Unlocking and Using Jenkins

As Jenkins runs at local port 8080, enter url http://localhost:8080 at your browser
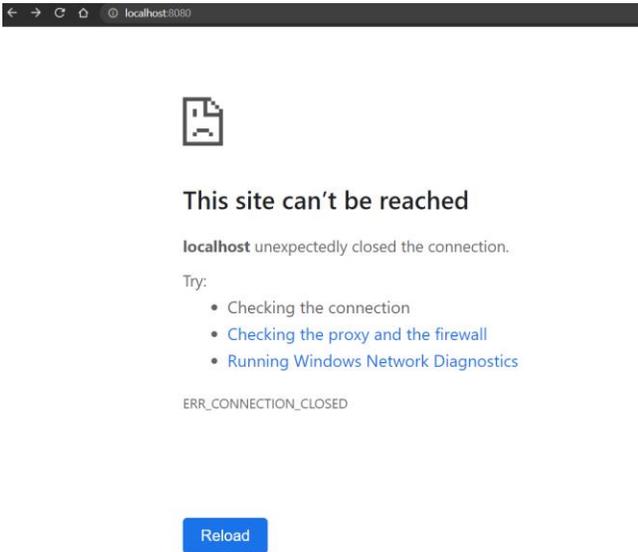
Because for security reasons, we didn't add, firewall exception while installing jenkin, this window will appear, just click on the *Checking the proxy and the firewall* options and you will be taken to below window
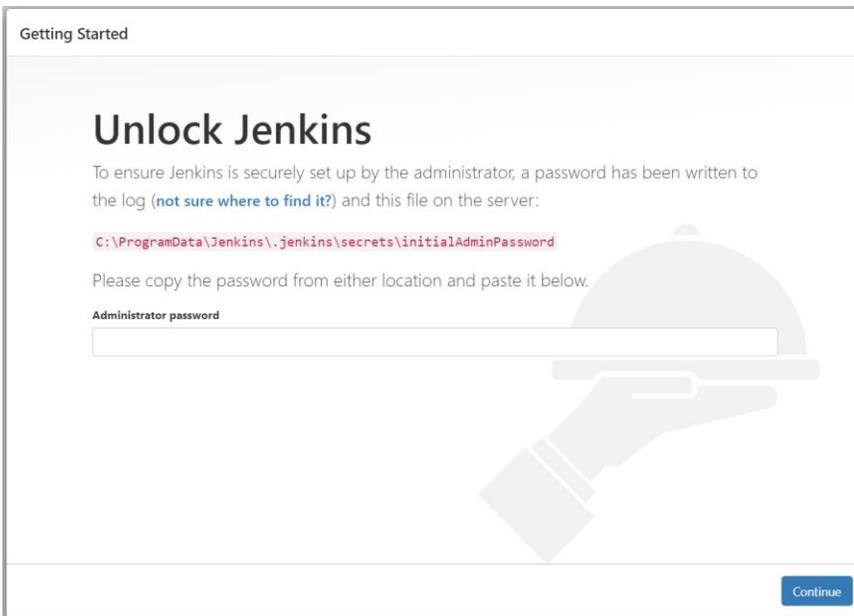
Let's get the sought password from the given location, and paste it. Copy and paste, given location at windows explorer's address bar, select notepad at the subsequent window, to open password file.
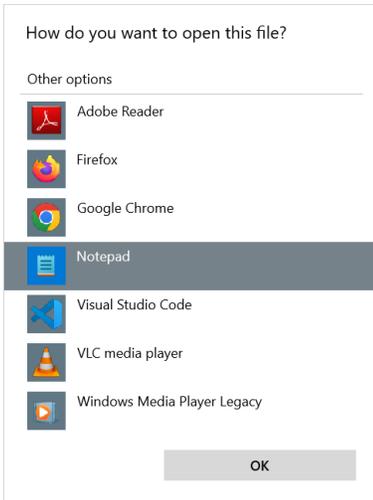
Once in the file, copy the password
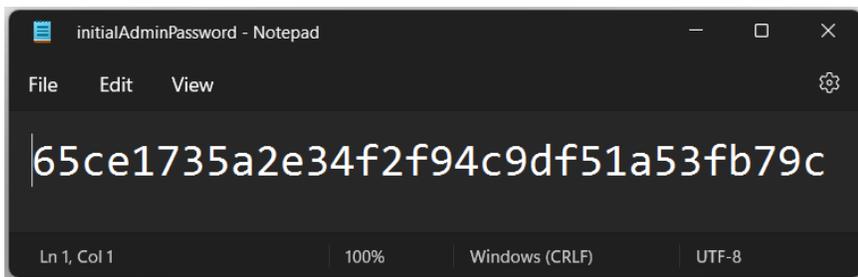
Paste the password and click on continue
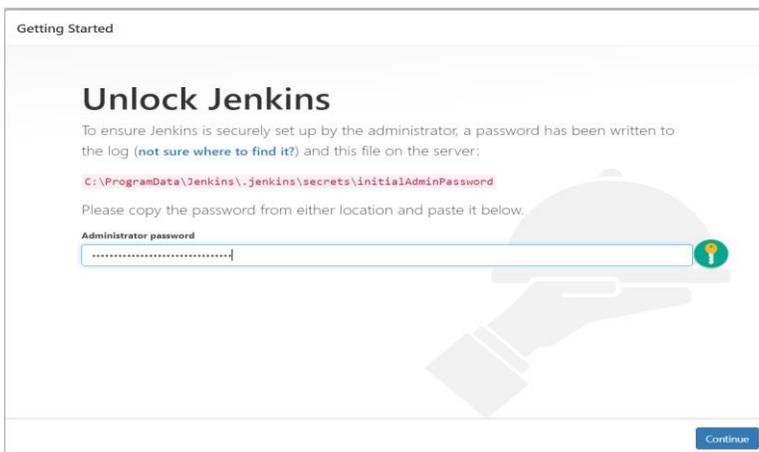
At the subsequent screen it asks for plugins to be installed, select recommended plugins
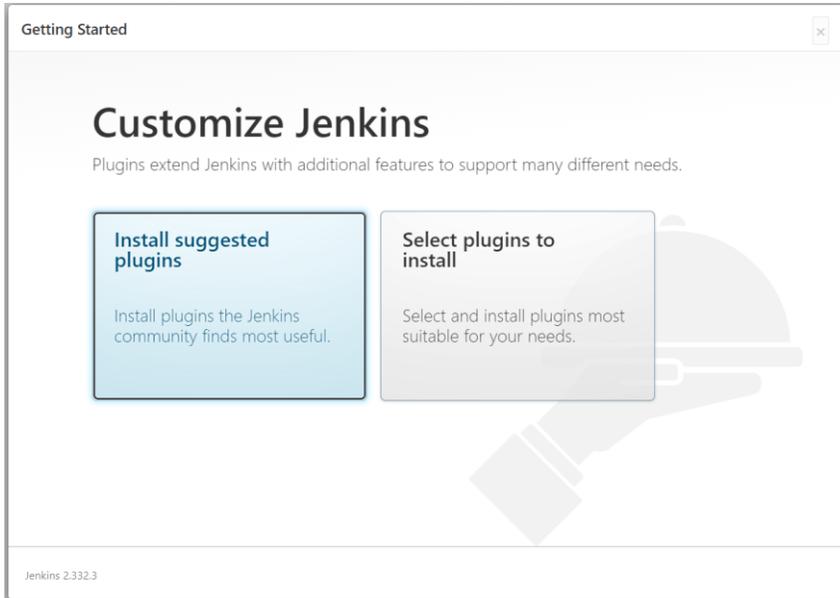
Depending upon network speed, it may take few minutes to install recommended plugins
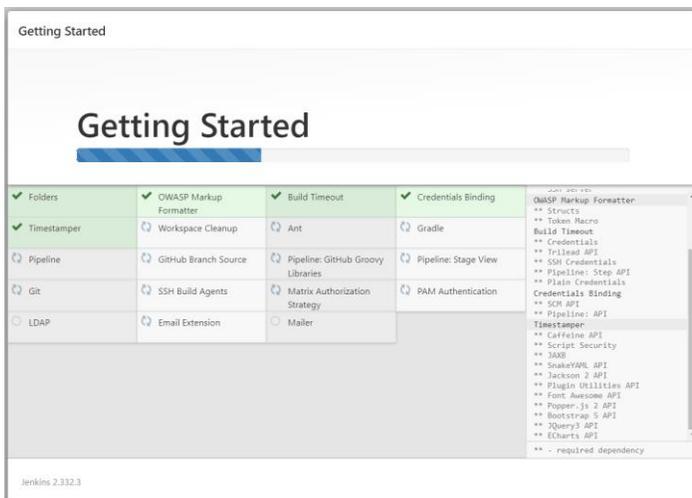
After this jenkins asks for creation of an Administrative user accounts
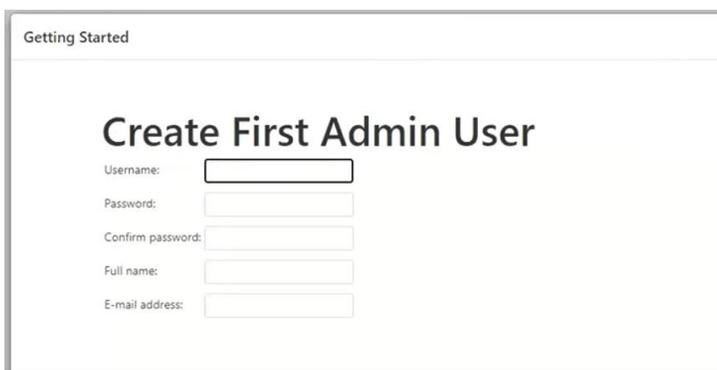
After completion of this step, Jenkins is ready for the use
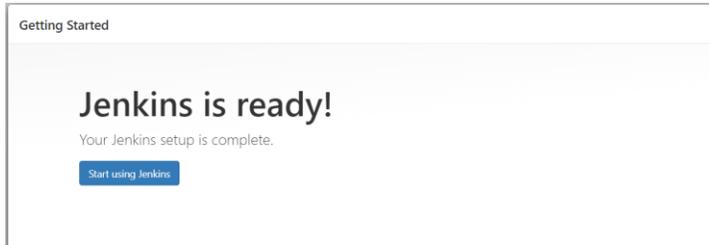
Click on Start using Jenkins, and following *Dashboard* will be presented to you
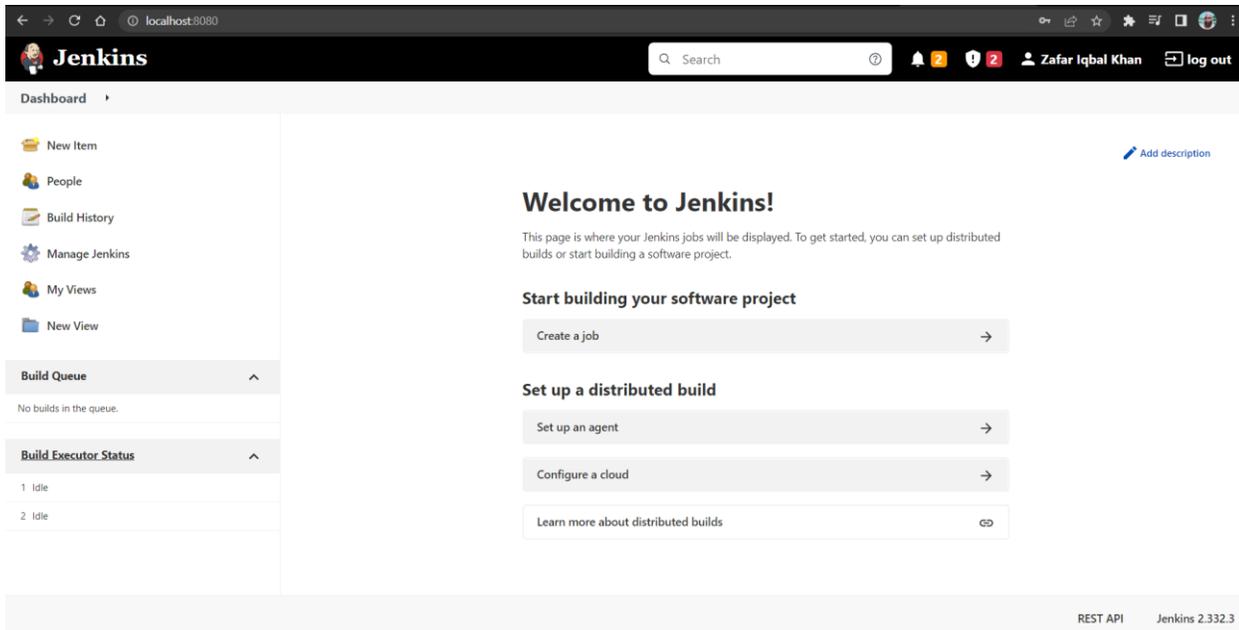
Creating first job

To create a job, click **New Item**, first option on the left side pane, and provide a suitable name for the first project, select Freestlyle project, and click on Ok
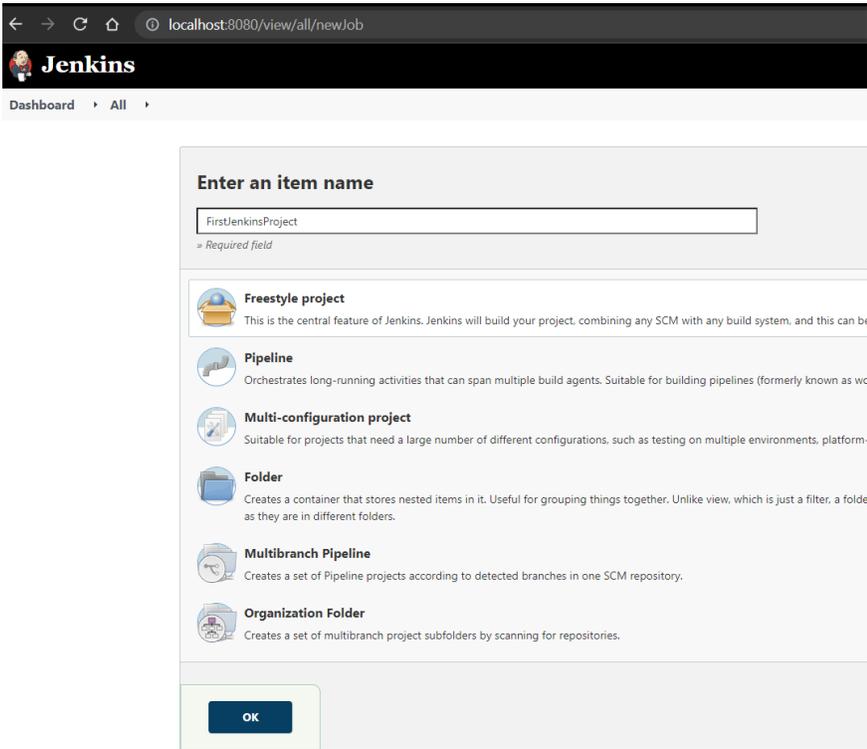
Provide some description for this project.
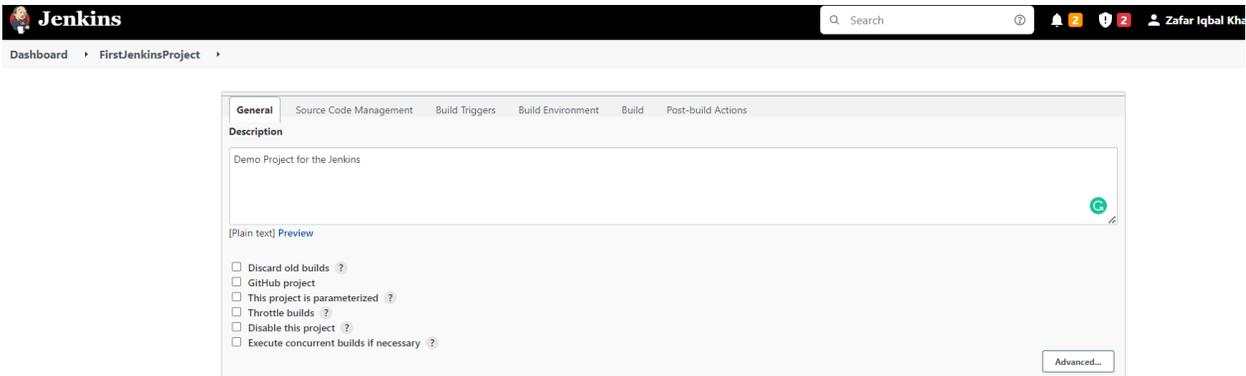
And **Execute Windows batch command,** in the build section and save
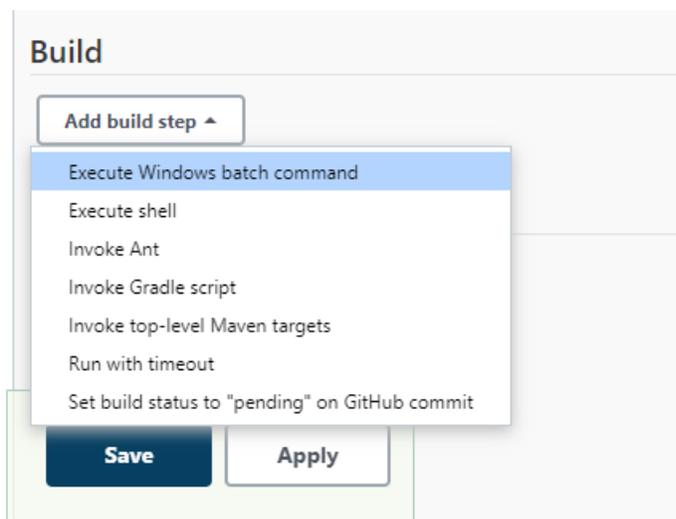
Onced saved, Dashboard will look like this
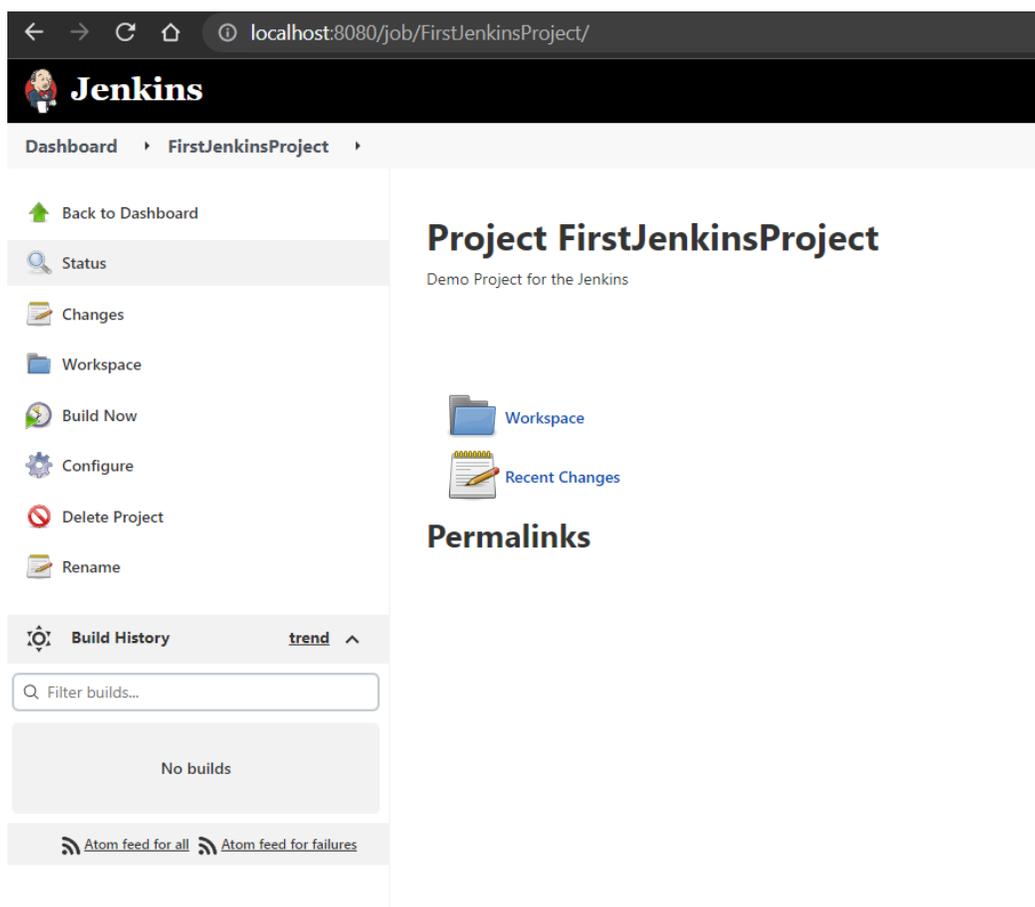
Now, click on **Build Now**, to check the output

All the builds are listed
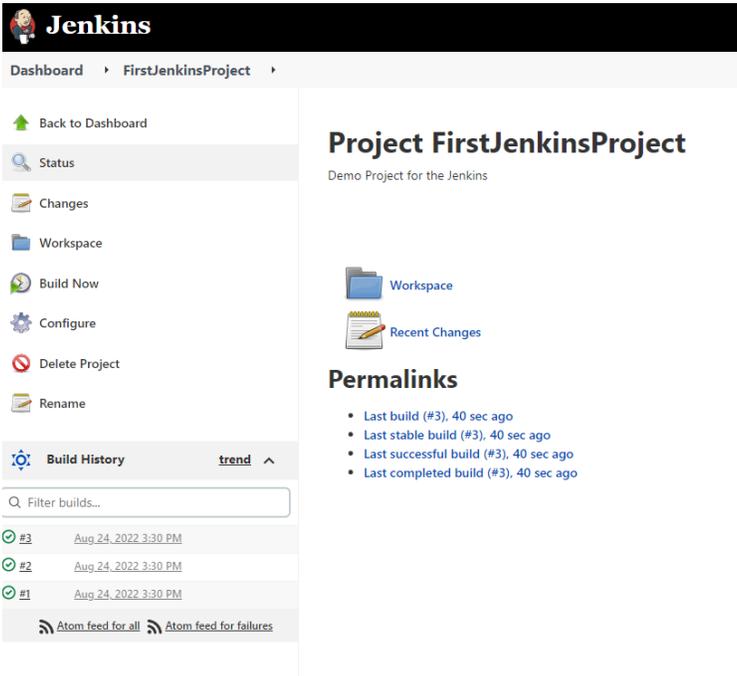
Click on any build to check for console output
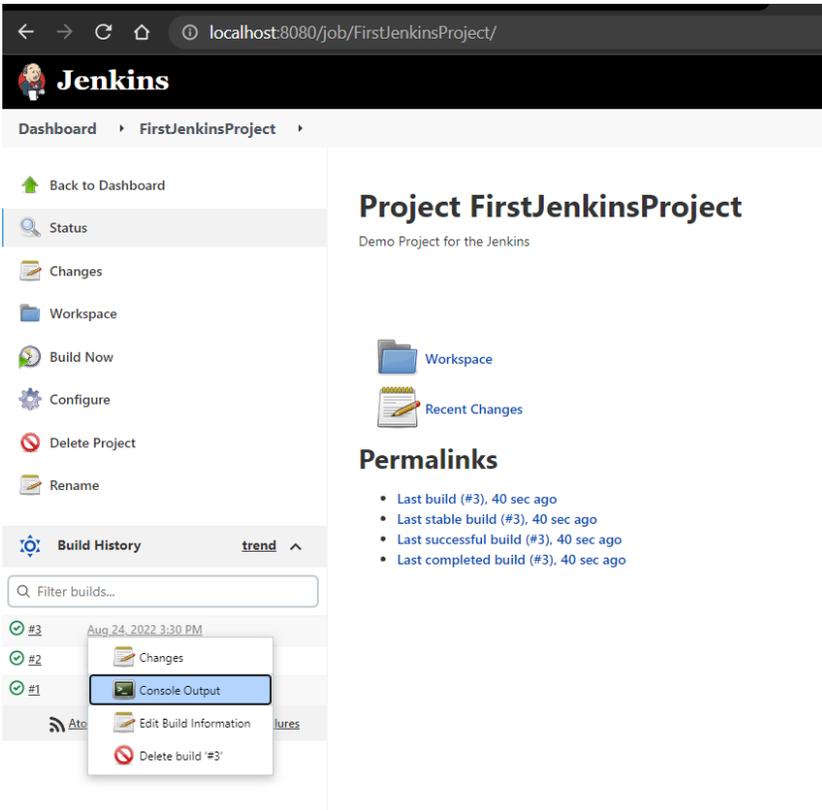
As evident from the below screen, we have successfully ran our first Jenkins build job.

Jenkins

Dashboard ‣ FirstJenkinsProject ‣ #3

Back to Project

Status

Changes

Console Output

View as plain text

Edit Build Information

Delete build '#3'

Previous Build

✅ Console Output

```
Started by user Zafar Iqbal Khan
Running as SYSTEM
Building in workspace C:\ProgramData\Jenkins\.jenkins\workspace\FirstJenkinsProject
[FirstJenkinsProject] $ cmd /c call C:\WINDOWS\TEMP\jenkins3629957449517665290.bat

C:\ProgramData\Jenkins\.jenkins\workspace\FirstJenkinsProject>java -version
java version "1.8.0_341"
Java(TM) SE Runtime Environment (build 1.8.0_341-b10)
Java HotSpot(TM) 64-Bit Server VM (build 25.341-b10, mixed mode)

C:\ProgramData\Jenkins\.jenkins\workspace\FirstJenkinsProject>date/t
Wed 08/24/2022

C:\ProgramData\Jenkins\.jenkins\workspace\FirstJenkinsProject>echo "Jenkins makes life easier"
"Jenkins makes life easier"

C:\ProgramData\Jenkins\.jenkins\workspace\FirstJenkinsProject>exit 0
Finished: SUCCESS
```