Experiment No. 05

Aim: To Create a new build job in Jenkins. Theory:

What is a Jenkins Freestyle Project?

Jenkins Freestyle Project is a repeatable build job, script, or pipeline that contains steps and post- build actions. It is an improved job or task that can span multiple operations. It allows you to configure build triggers and offers project-based security for your Jenkins project. It also offers plugins to help you build steps and post-build actions.
The types of actions you can perform in a Jenkins build step or post-build action are quite limited. There are many standard plugins available within a Jenkins Freestyle Project to help you overcome this problem.

Fig 5.1 How to Create a Job in Jenkins

Features of Jenkins:

Some of the crucial features of Jenkins are the following:

1. It is a free and open-source automation tool
2. Jenkins provides a vast number of plugins
3. It is easy to set up and install on multiple operating systems
4. Provides pipeline support
5. Fast release cycles
6. Easy upgrades

Steps to Create a New Build Job in Jenkins:

Step 1: Login to Jenkins

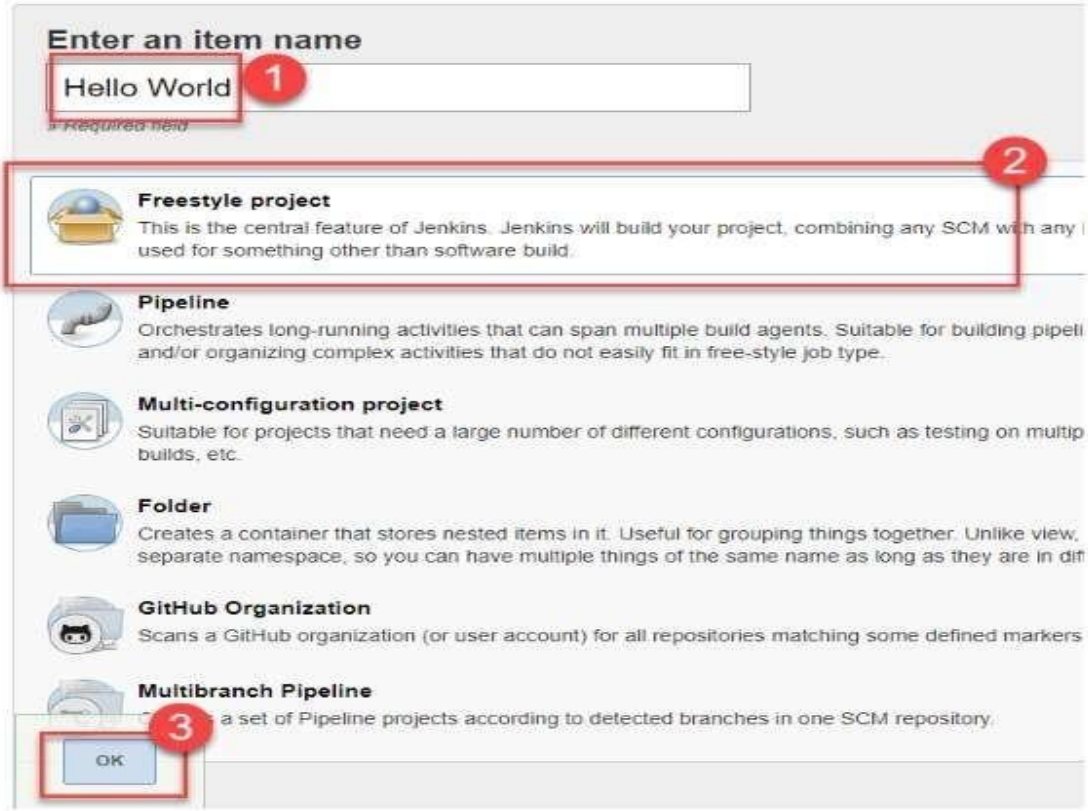
To create a Jenkins freestyle job, log on to your Jenkins dashboard by visiting your Jenkins installation path. Usually, it will be hosted on localhost at http://localhost:8080

Step 2: Create New Item

Click on "**New Item**" at the top left-hand side of your dashboard.

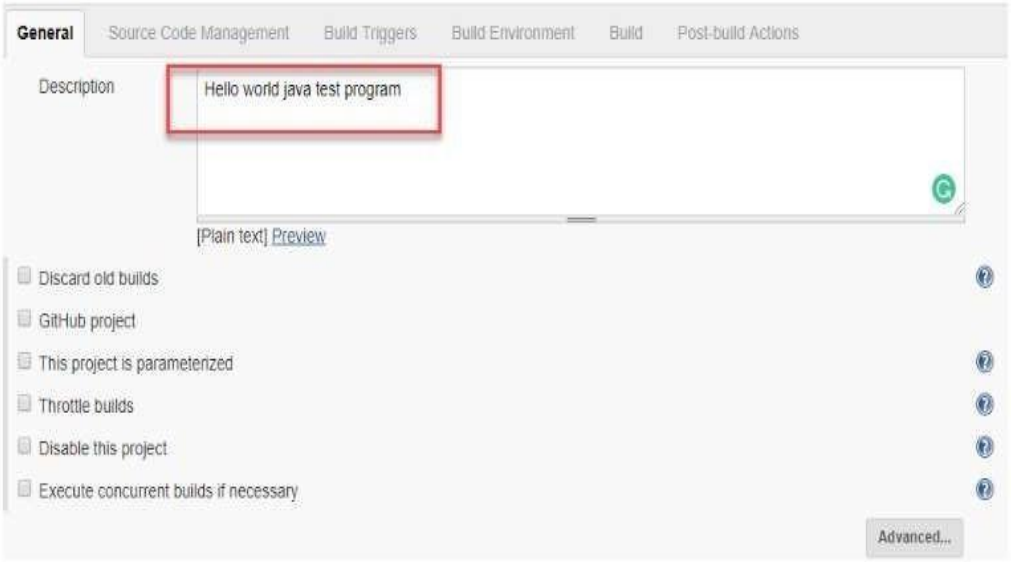
Step 3: Enter Item details In the next screen,

1. Enter the name of the item you want to create. We shall use the "Hello world" for this demo.
2. Select Freestyle project
3. Click Okay



Step 4: Enter Project details

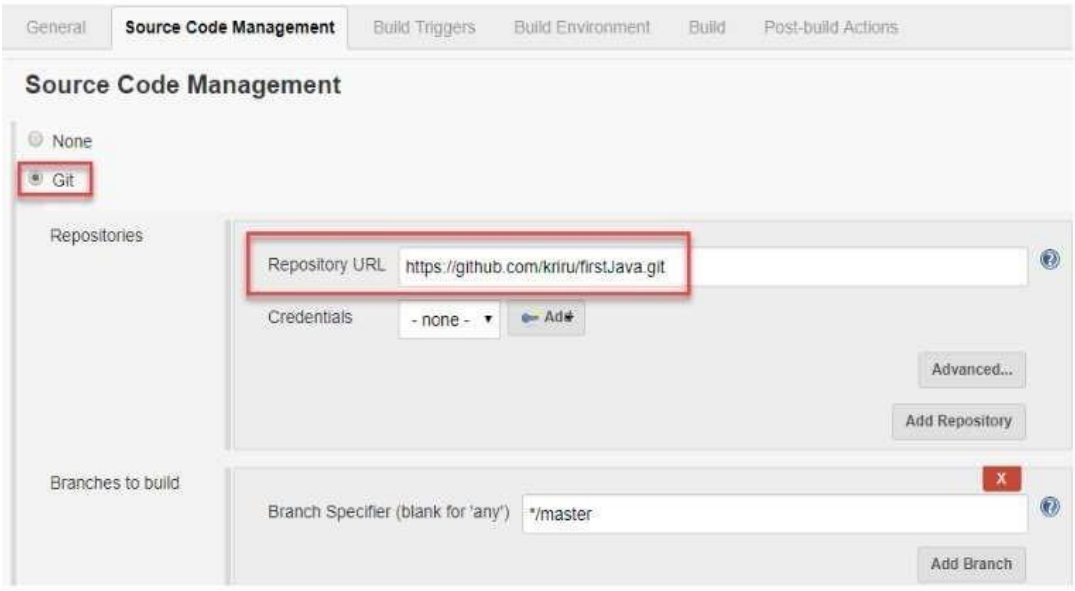
Enter the details of the project you want to test.



Step 5: Enter repository URL

Under Source Code Management, Enter your repository URL. We have a test repository located at https://github.com/kriru/firstJava.git

It is also possible for you to use a local repository.



If your GitHub repository is private, Jenkins will first validate your login credentials with GitHub and only then pull the source code from your GitHub repository.

Step 6: Tweak the settings

Now that you have provided all the details, it's time to build the code. Tweak the settings under the **build** section to build the code at the time you want. You can even schedule the build to happen periodically, at set times.

Under **build**,

- Click on "**Add build step**"
- Click on "**Execute Windows batch command**" and add the commands you want to execute during the build process.

In the command window, enter the following commands and then click on the Save button.

Javac HelloWorld.java Java
HelloWorld

Step 7: Save the project

When you have entered all the data,

- Click **Apply**
- **Save** the project.

Step 8: Build Source code

Now, in the main screen, Click the **Build Now** button on the left-hand side to build the source code.

Step 9: Check the status

After clicking on **Build now,** you can see the status of the build you run under **Build History**.

Step 10: See the console output

Click on the **build number** and then Click on **console output** to see the status of the build you run. It should show you a success message.

Conclusion:

1. **Which SCM tools Jenkins supports?**
   Jenkins supports various SCM tools, including Git, SVN (Subversion), Mercurial, CVS, Perforce, and others.

2. **What are the various ways in which build can be scheduled in Jenkins?**
   Builds can be scheduled in Jenkins using various methods, including:
   - Periodic builds at specified intervals (e.g., every hour, daily, weekly).
   - Poll SCM to trigger builds based on changes in the source code repository.
   - Trigger builds manually by users.
   - Integration with external systems or triggers using plugins.