Experiment 5

Aim: Experiment 5:To Build the pipeline of jobs using Maven / Gradle / Ant in Jenkins, create a pipeline script to Test and deploy an application over the tomcat server

Programming in Jenkins:

Continuous Integration is a software development practice where members of a team integrate their work frequently, usually each person integrates at least daily leading to multiple integrations per day. Each integration is verified by an automated build (including test) to detect integration errors as quickly as possible." In simple way, Continuous integration (CI) is the practice of frequently building and testing each change done to your code automatically.

Jenkins is a self-contained, open-source automation server which can be used to automate all sorts of tasks related to building, testing, and delivering or deploying software.

Our first job will execute the shell commands. The freestyle project provides enough options and features to build the complex jobs that you will need in your projects.

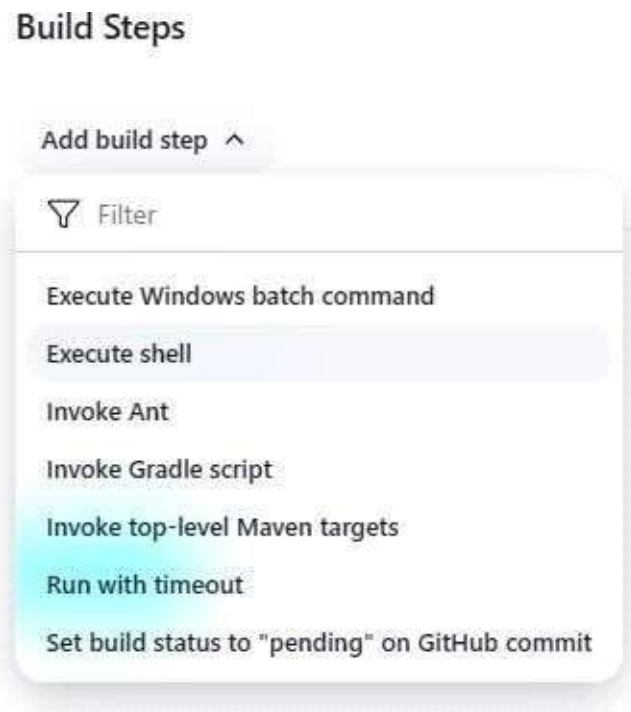
Example 1

Example 1.1: Deploying a freestyle app in Jenkins

Creating a job:

Naming the job and setting it as freestyle:

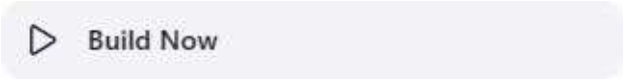
Selecting build type as “Execute shell”:



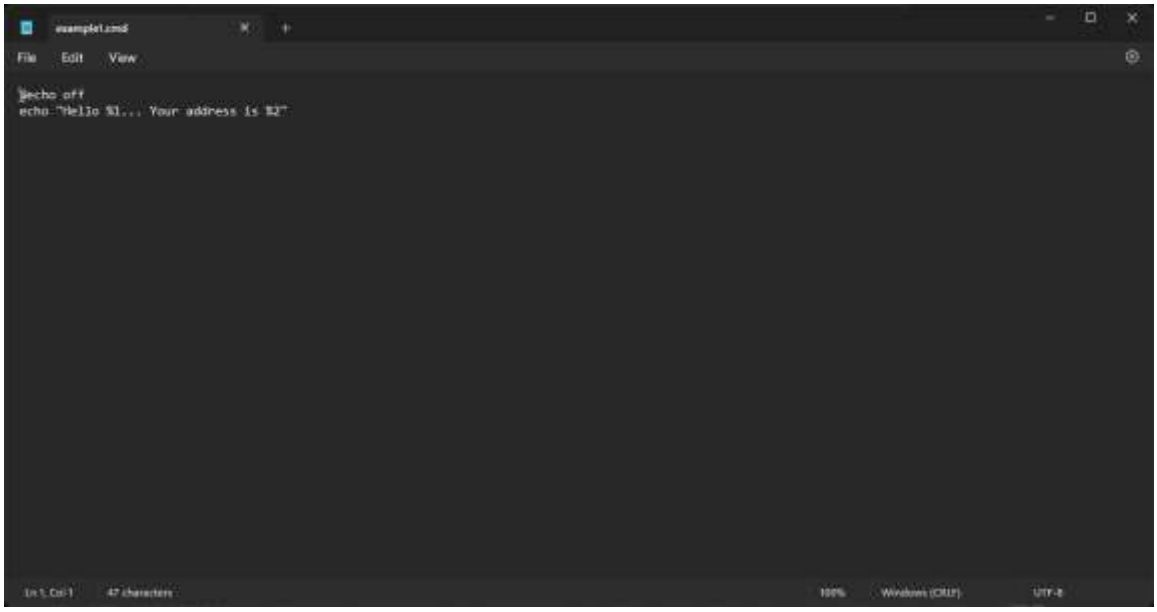
Entering a simple command for the shell execution:

Applying and saving the project configuration:

Building the project:



Console output (after building):



Example 1.2: Taking parameters through files

Contents of script `example1.cmd`:

Executing script `example1.cmd` on the terminal:

```
Microsoft Windows [Version 10.0.22621.3296]
(c) Microsoft Corporation. All rights reserved.

C:\Users\AI&DS 202>Microsoft Windows [Version 10.0.22631.3155) (c) Microsoft Corporation. All rights reserved.
'Microsoft' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\AI&DS 202>C:\Admin\Academics\TSEC\Start3\SEPM>example1.cmd
The system cannot find the path specified.

C:\Users\AI&DS 202>"Hello... Your address is "
'"Hello... Your address is "' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\AI&DS 202>C:\Admin\Academics\TSEC\Start3\SEPM>example1.cad Tanishq
The system cannot find the path specified.

C:\Users\AI&DS 202>"Hello Tanihsq... Your address is "
'"Hello Tanihsq... Your address is "' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\AI&DS 202>C:\Admin\Academics\TSEC\Start3\SEPM>example1.cmd Tanishq Girgaon "Helle Tanishq... Your address is Gi
rgaon"
The system cannot find the path specified.
```

Modifying the Jenkins project to execute the script while supplying required parameters:

Console output after building the modified project:

:

Running a Java program under Jenkins Creating a simple Java program:

Compiling and running the program on the terminal:

```
Command Prompt

C:\Users\admins\Desktop\sepm>javac T22.java

C:\Users\admins\Desktop\sepm>java T22
This is T22

C:\Users\admins\Desktop\sepm>
```

Creating a new freestyle project:

Configure new project:

Command

See the list of available environment variables

```
javac C:\Users\richminds\Desktop\sepm\24.java
java C:\Users\richminds\Desktop\sepm\24.java
```

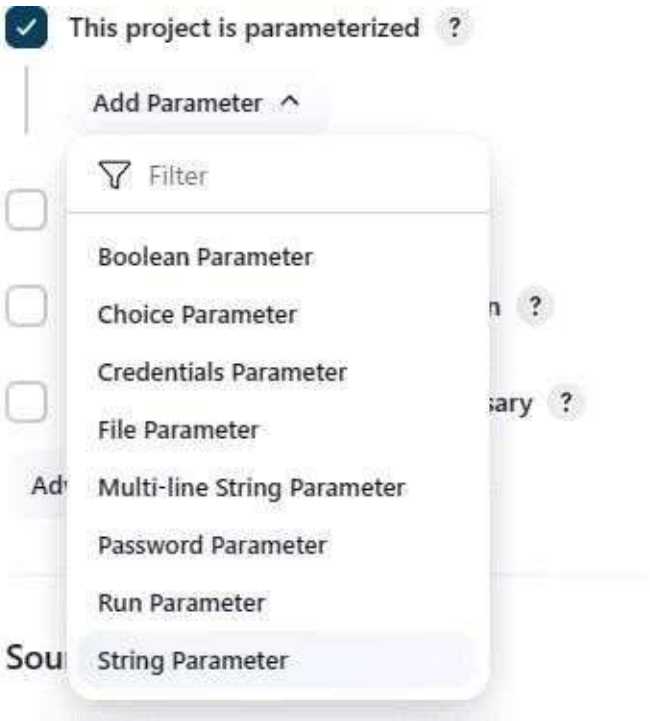
Console output after building:

Example 3

Example 3.1: Parameterise build Creating a

new freestyle project:

Enabling parameterisation and adding a String parameter:



Configuring the string parameter as `Fname`:

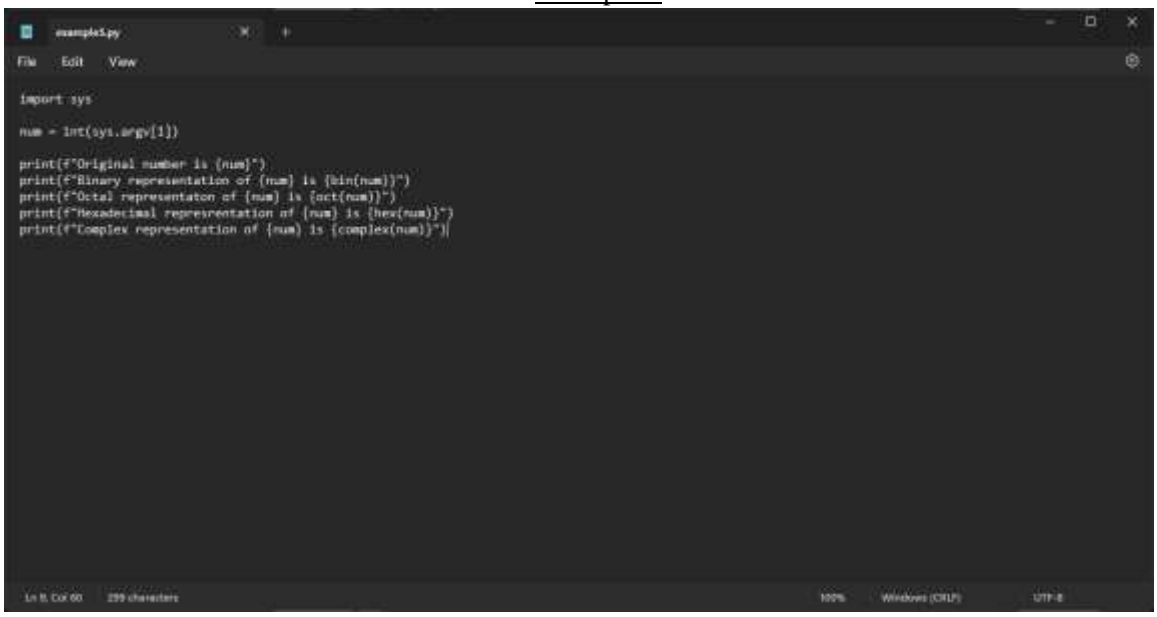
Adding a choice parameter and configuring it as `City` with the following choices:

Configuring build steps:

Entering parameters for build:

Console output after building:

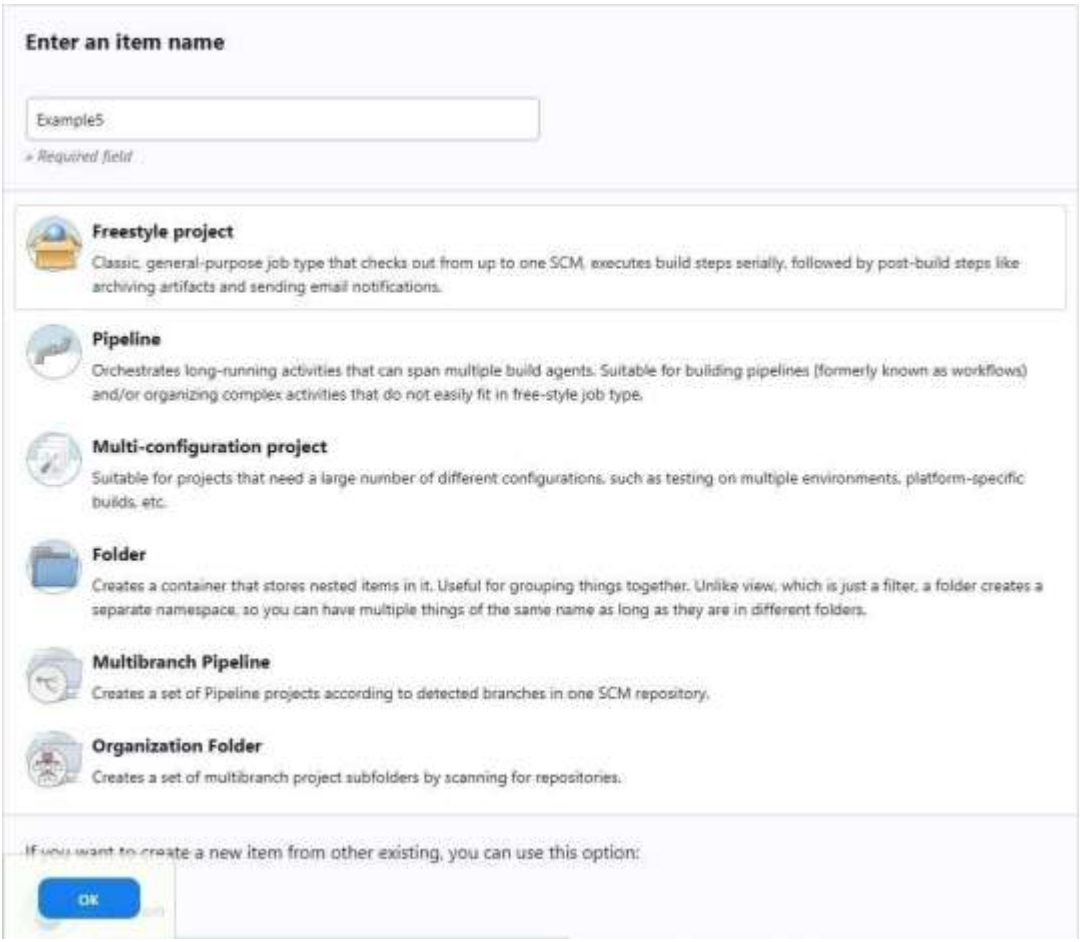
Example 5



Example 5.1: Running a Python program Creating a simple Python script:

Running the Python script on the terminal:

Creating a new freestyle project:



Parameterising the project with a string parameter as follows:

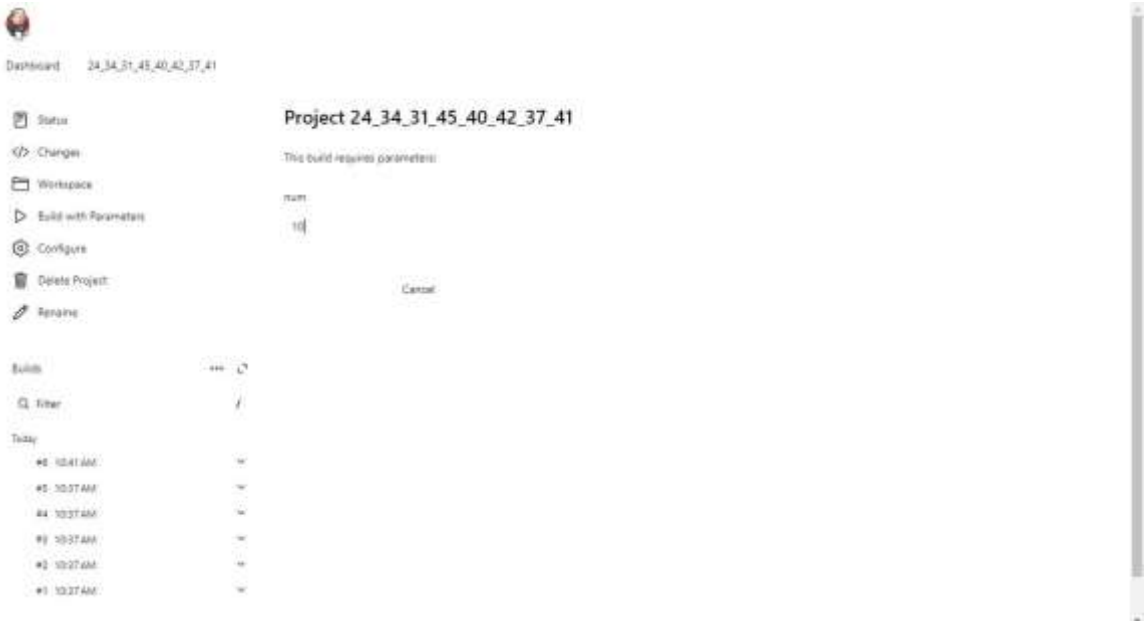
Configuring the build steps:

Command

See the list of available environment variables

```
python C:\Users\richminds\Desktop\sepm\24.py
```

Setting the parameter for the build:



Conclusion: Thus, we have successfully studied Continuous Integration and installed, configured, and understood programming with Jenkins.