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.

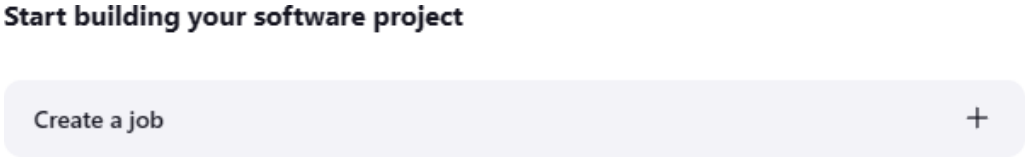
Jenkins is a self-contained, open-source automation server which can be used to automate all sorts of tasks related to building, testing, and delivering or deploying software.

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":

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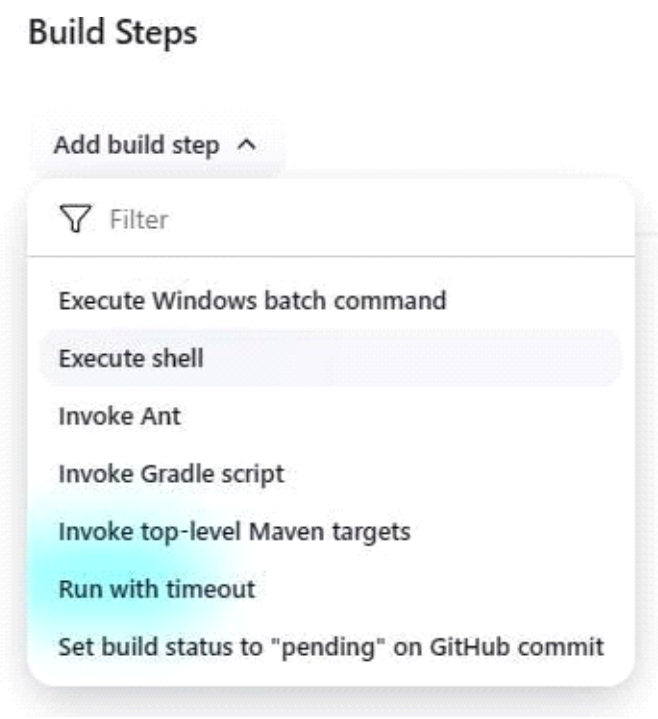
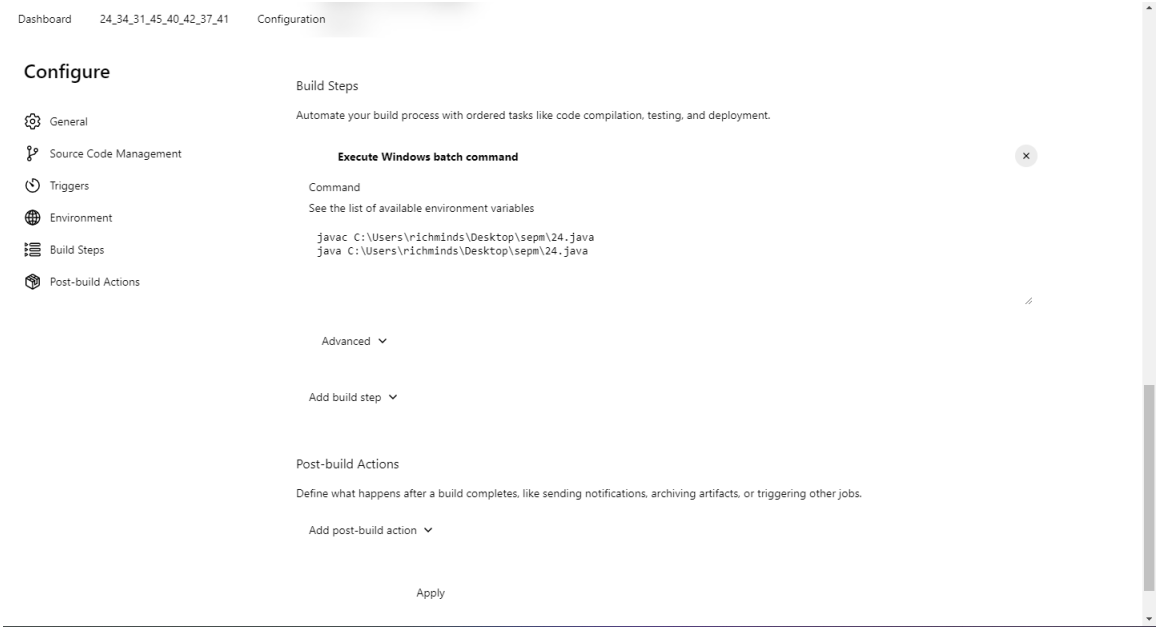
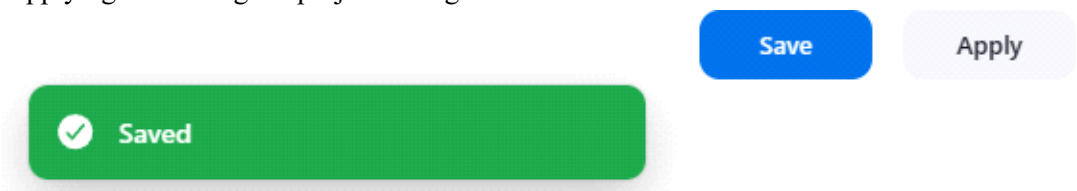


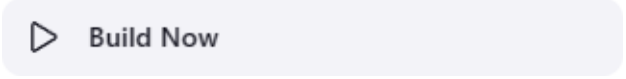
Entering a simple command for the shell execution:



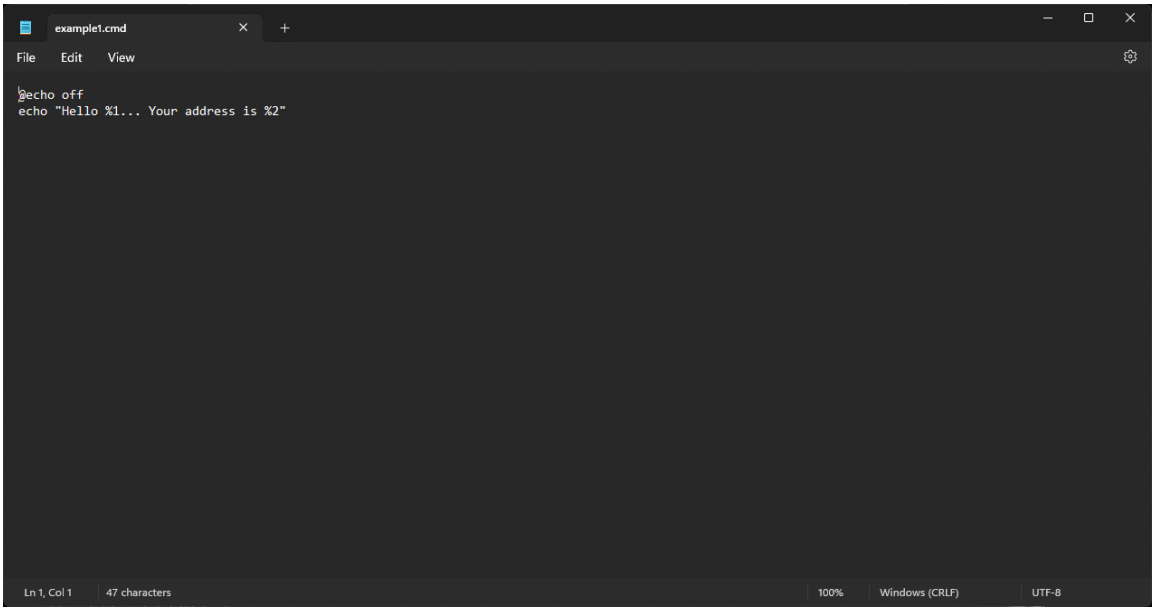
Applying and saving the project configuration:



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:

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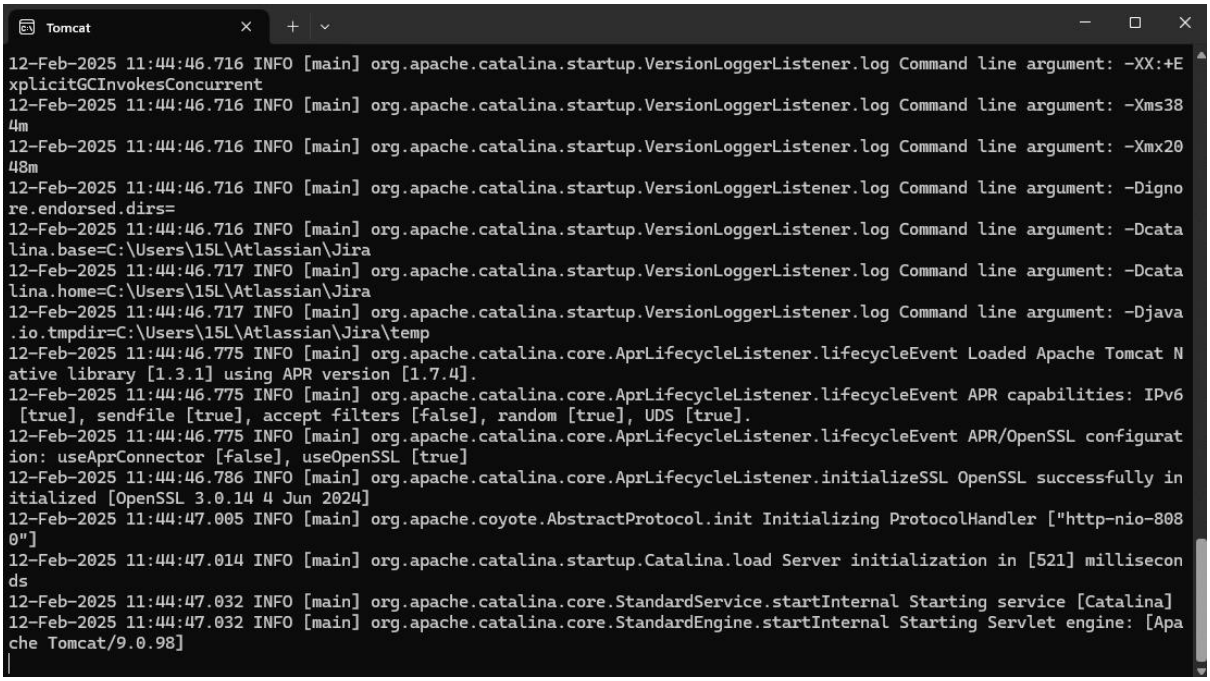

Modifying the Jenkins project to execute the script while supplying required parameters:

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:

Creating a new freestyle project:

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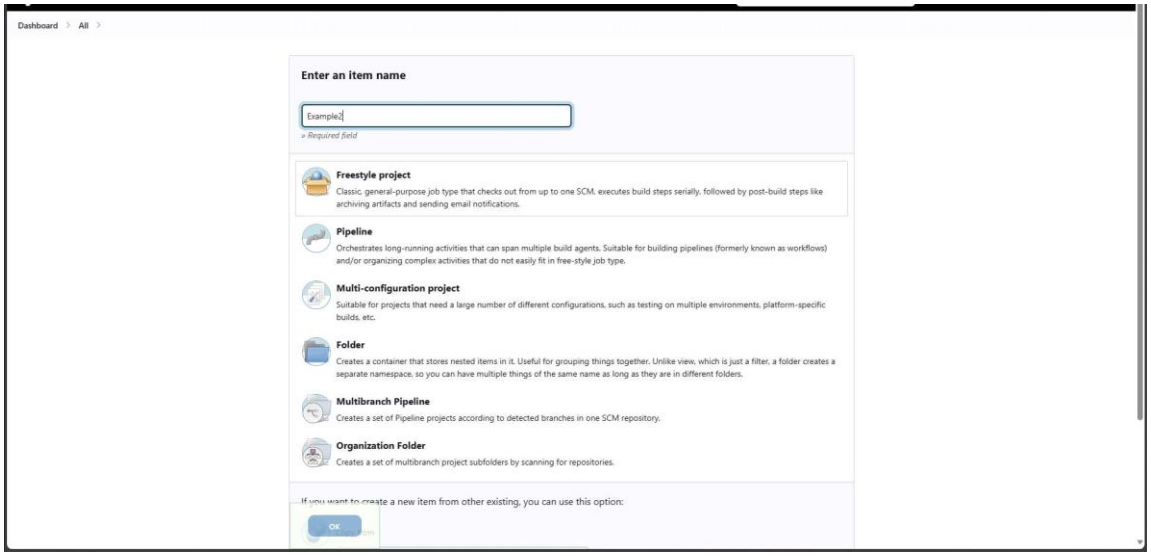

Configure new project:

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:

Console Output Download Copy View as plain text

```
Started by user Aditya Dikonda
Running as SYSTEM
Building in workspace C:\ProgramData\Jenkins\.jenkins\workspace\24_34_31_45_40_42_37_41
[24_34_31_45_40_42_37_41] $ cmd /c call C:\WINDOWS\TEMP\jenkins3970528995341461278.bat

C:\ProgramData\Jenkins\.jenkins\workspace\24_34_31_45_40_42_37_41>javac C:\Users\richminds\Desktop\sepm\24.java

C:\ProgramData\Jenkins\.jenkins\workspace\24_34_31_45_40_42_37_41>java C:\Users\richminds\Desktop\sepm\24.java
This is T12

C:\ProgramData\Jenkins\.jenkins\workspace\24_34_31_45_40_42_37_41>exit 0
Finished: SUCCESS
```

Example 3

Example 3.1: Parameterise build

Creating a new freestyle project:

Enabling parameterisation and adding a String parameter:

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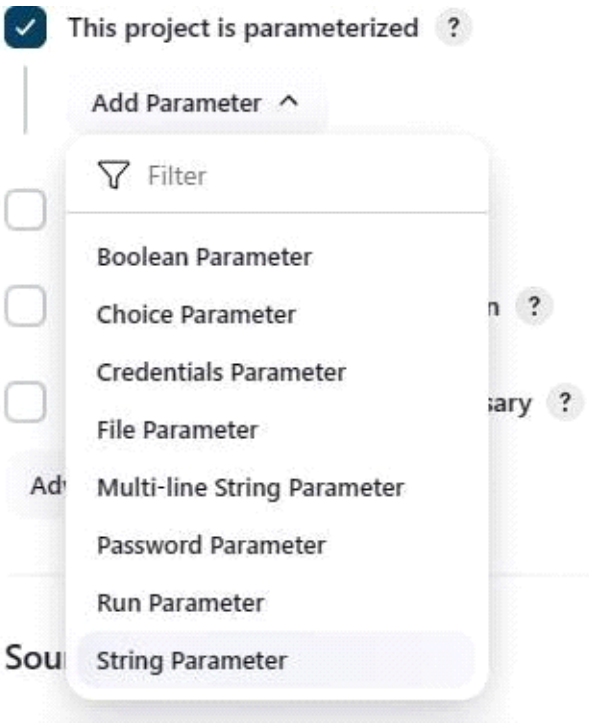
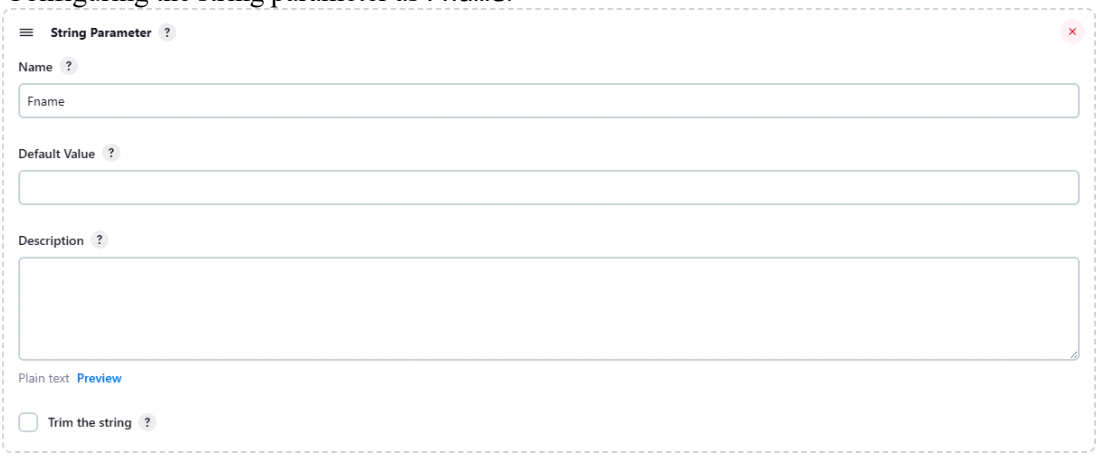


Configuring the string parameter as `Fname`:



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

Configuring build steps:

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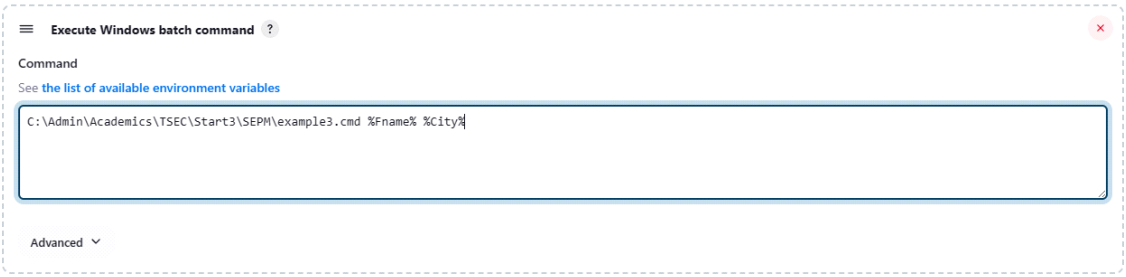
Build Steps



Entering parameters for build:

Console output after building:

Console Output

```
Started by user Siddhant Chetlur
Running as SYSTEM
[EnvInject] - Loading node environment variables.
Building in workspace C:\ProgramData\Jenkins\.jenkins\workspace\Example3
[Example3] $ cmd /c call C:\WINDOWS\TEMP\jenkins1409453616515098615l.bat

C:\ProgramData\Jenkins\.jenkins\workspace\Example3>C:\Admin\Academics\TSEC\Start3\SEPM\example3.cmd Siddhant Bandra
Hello your name is Siddhant and your city is Bandra
Finished: SUCCESS
```

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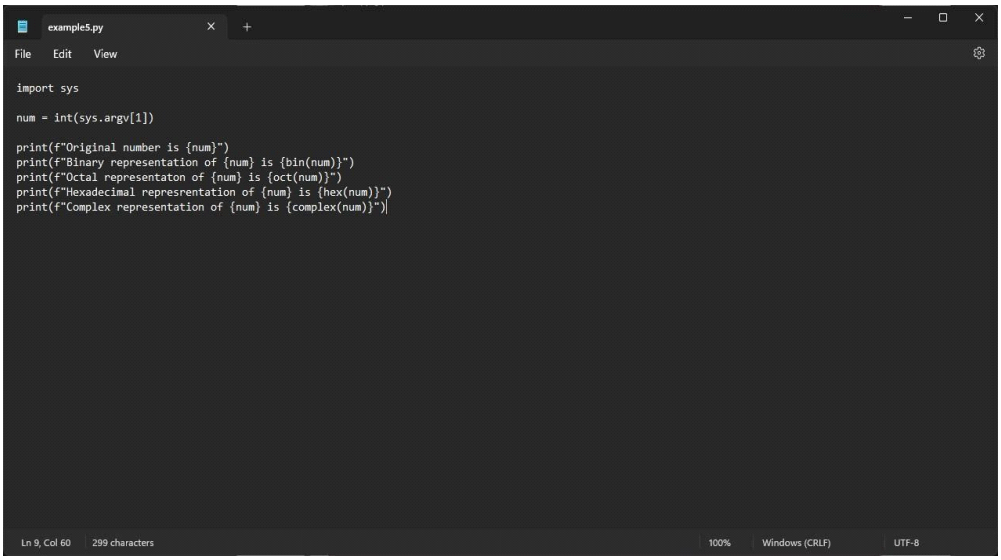

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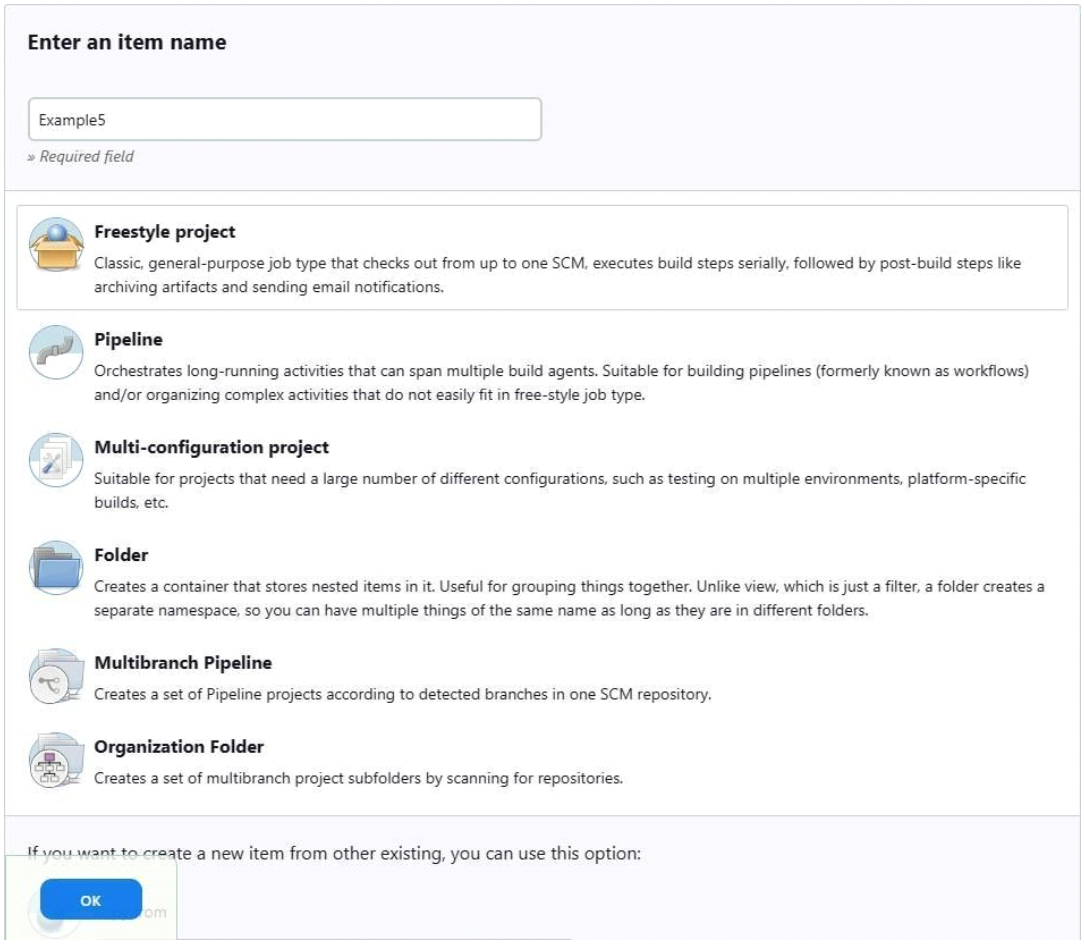
Example 5.1: Running a Python program

Creating a simple Python script:

Running the Python script on the terminal:

```
Number is 10
```

Creating a new freestyle project:



Parameterising the project with a string parameter as follows:

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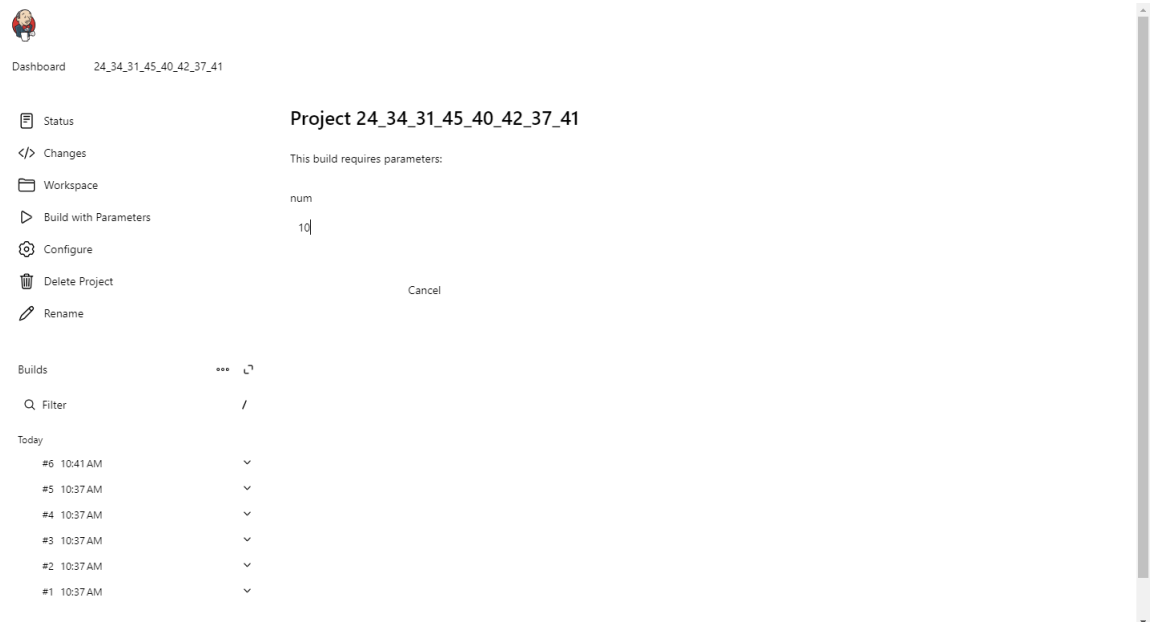
Configuring the build steps:

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.