TopTech School

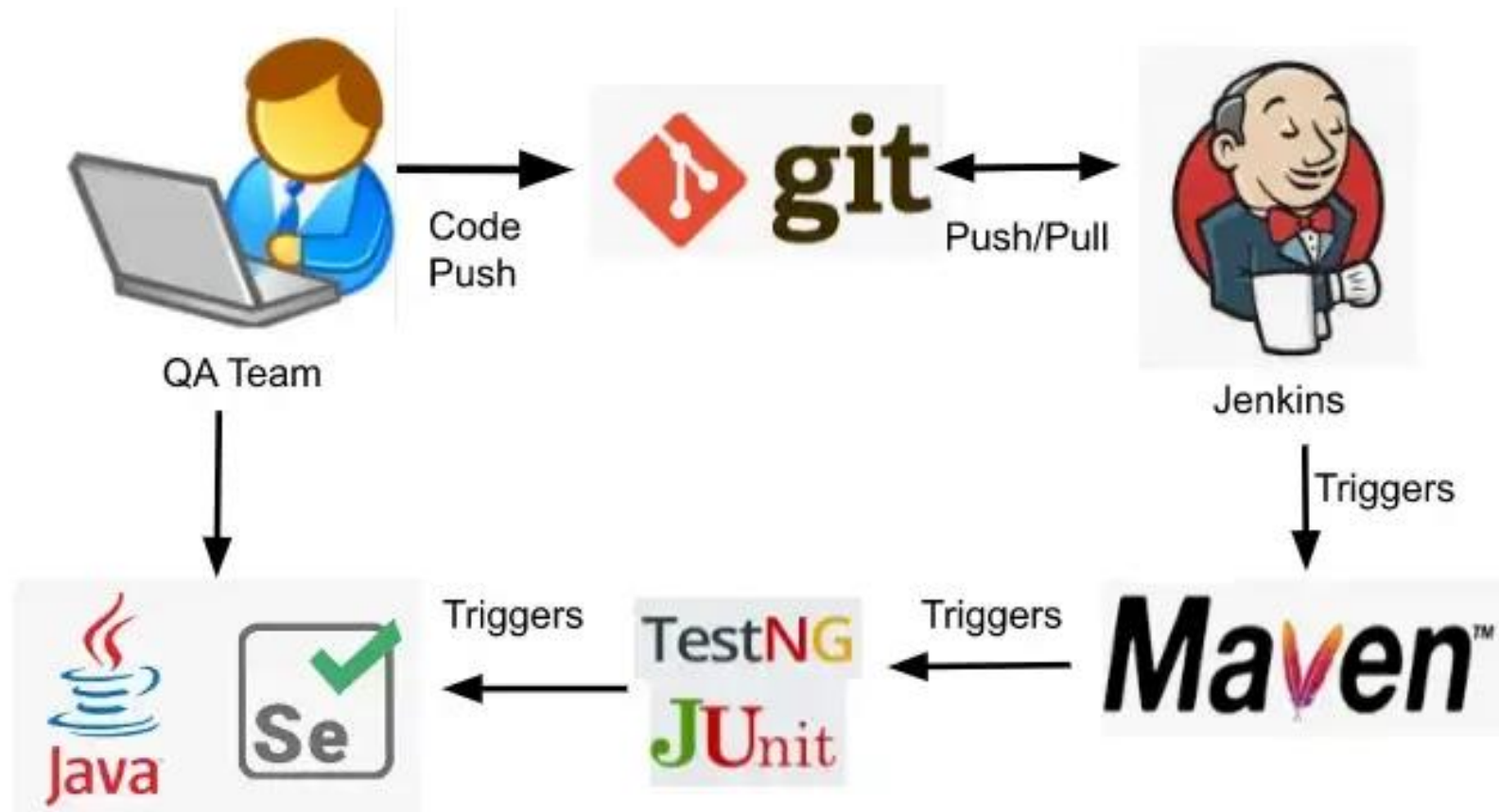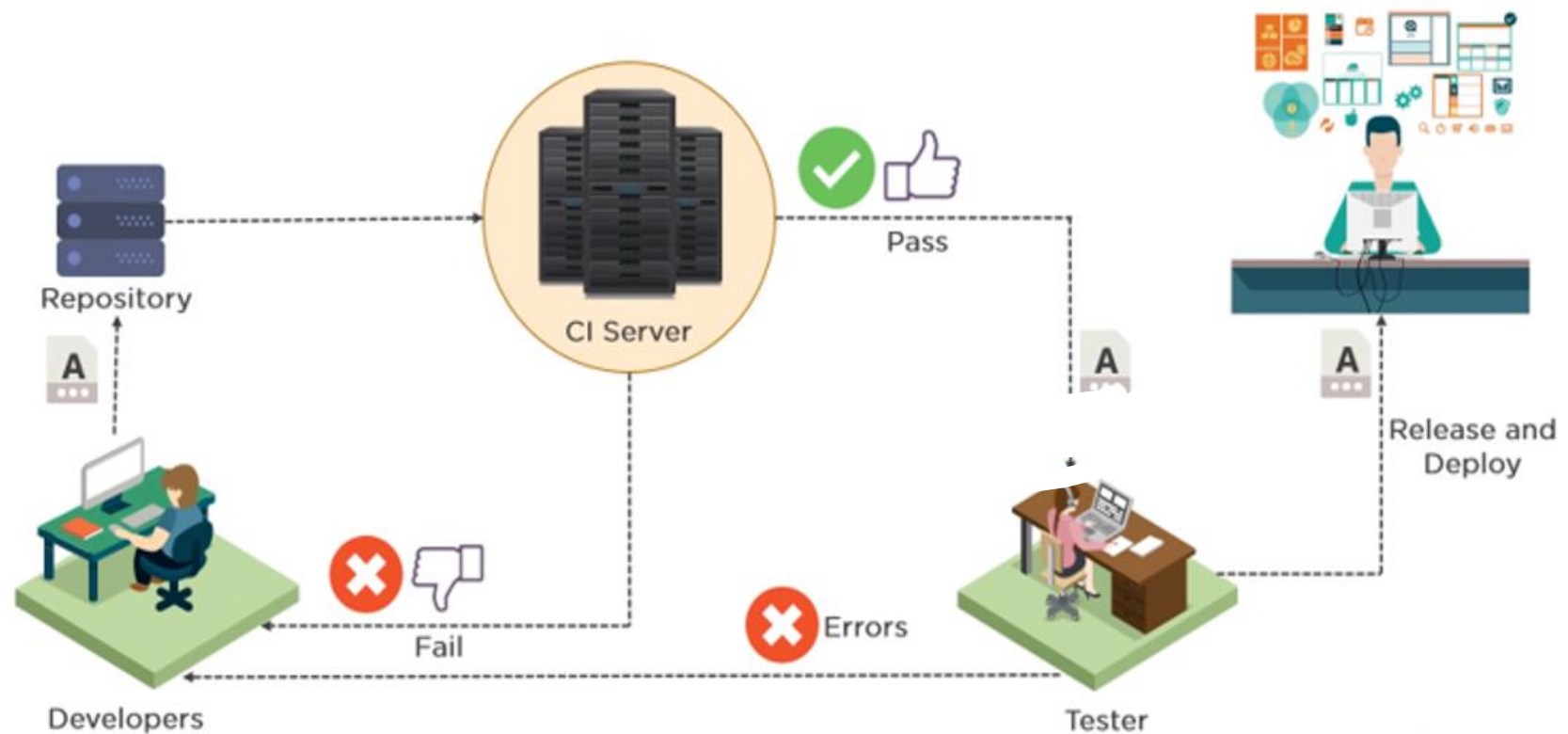## School of Coding & Software Automation

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Jenkins

Jenkins – **an open-source automation server** which enables developers around the world to reliably build, test, and deploy their software.
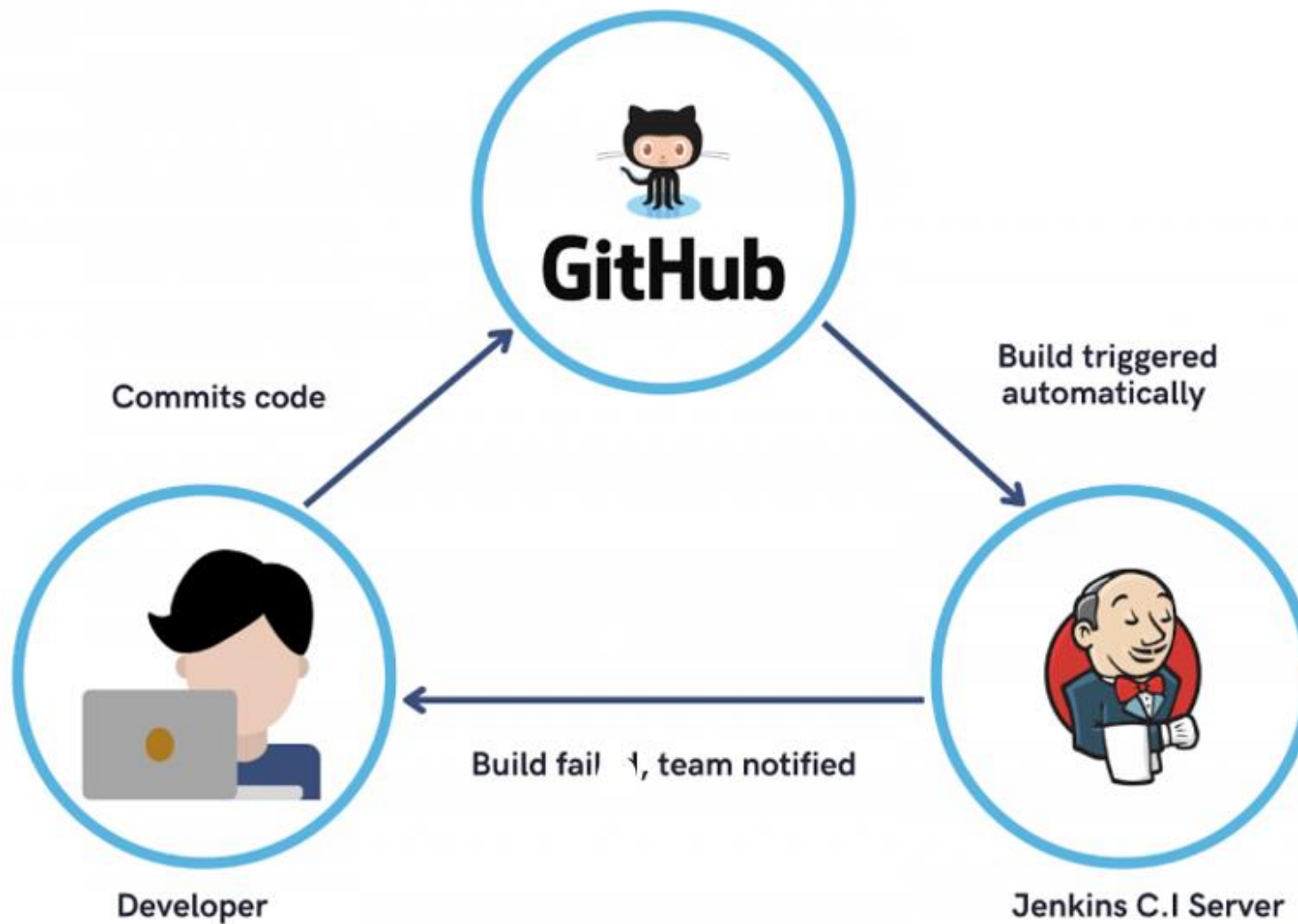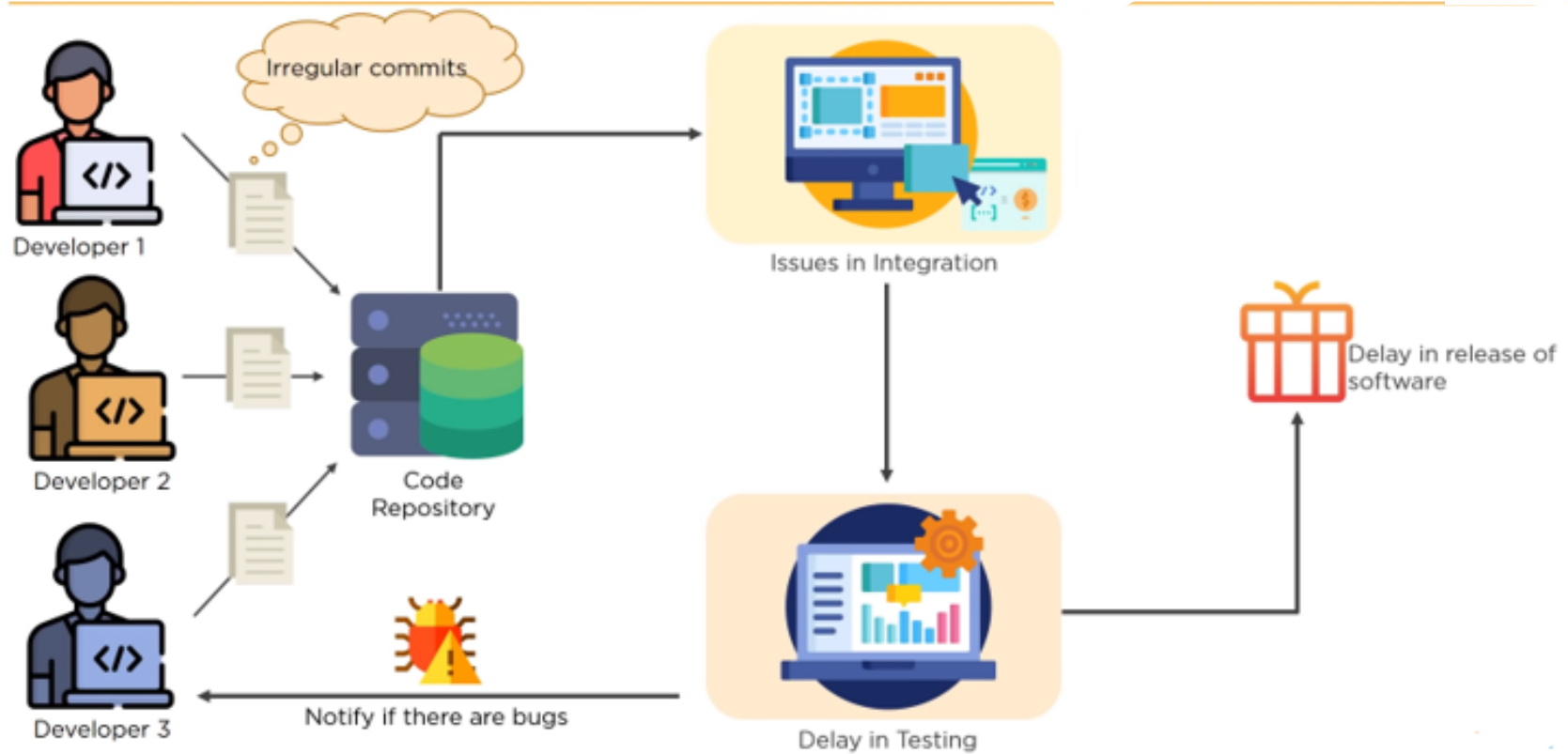
How Jenkins pipeline works

What is Continuous Integration?

Jenkins Continuous Integration

Commits code

Build triggered
automatically

Build fail , team notified

Developer

Jenkins C.I Server

Before Jenkins

Developer 1 — Irregular commits

Developer 2

Developer 3

Code Repository

Notify if there are bugs

Issues in Integration

Delay in Testing

Delay in release of software
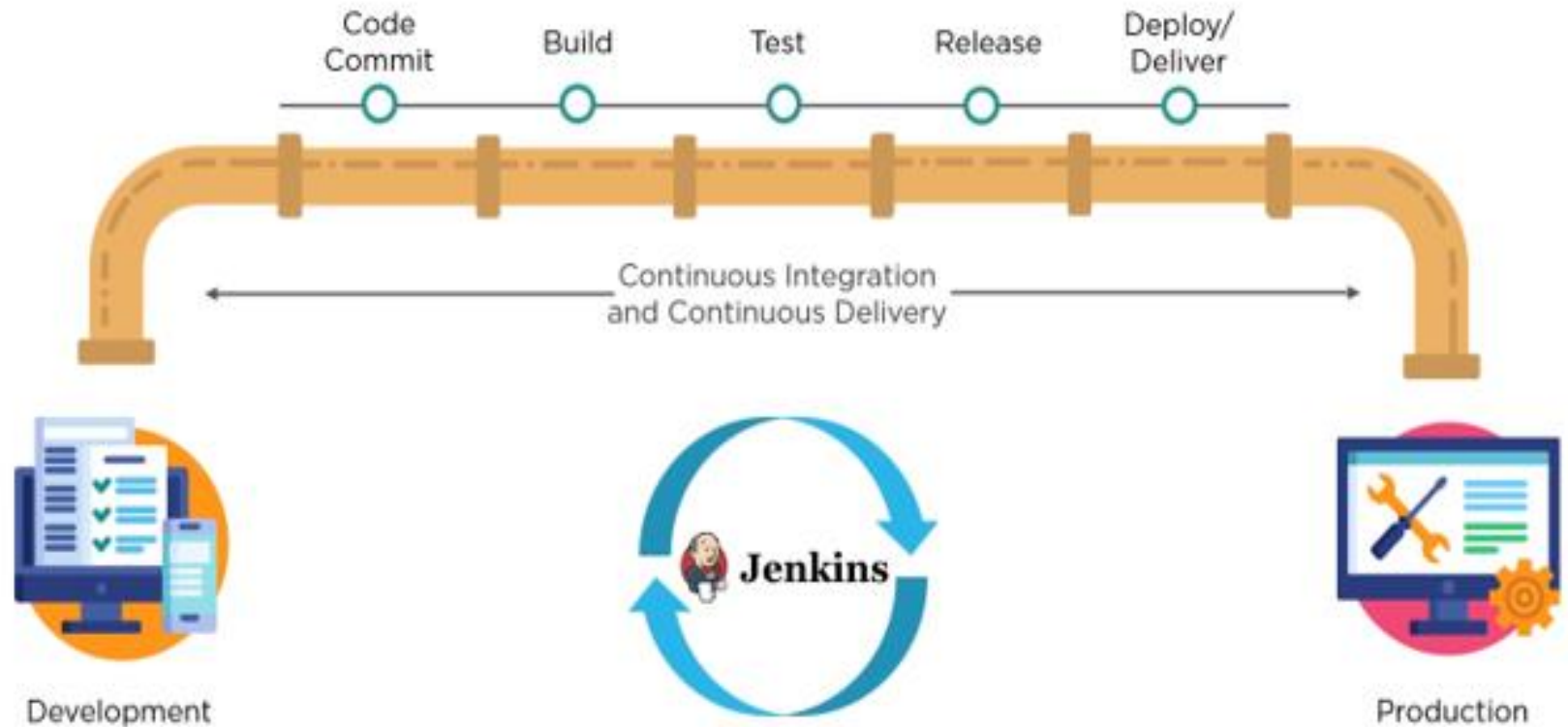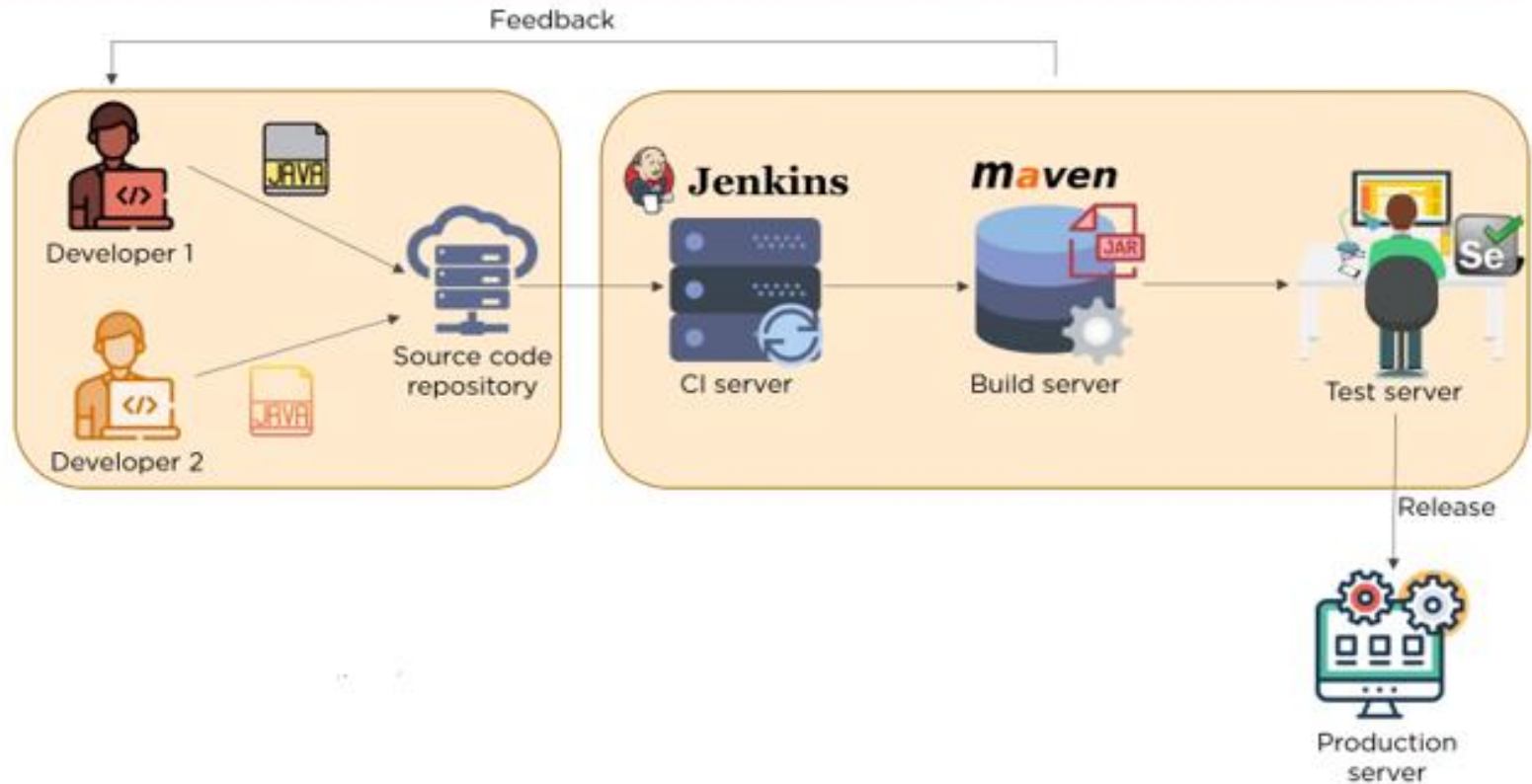
Jenkins Pipeline

1. Developers commit changes to the source code
2. Jenkins server checks the repository at regular intervals and pull any newly available code
3. Build Server builds the code into an executable file. Here, java file is being converted to into jar file.
   In case the build fails, the feedback is sent to the developers.
4. Jenkins then deploys the build application on to the test server for testing. If the test fails, feedback is sent back to the developers.
5. If there is no error, the test application is then deployed onto the production server.

How to Work with Jenkins Pipeline:

Step 1: Download Jenkins for windows: https://www.jenkins.io/

Step 2: jdk 11 or 17 or 21 is required for Jenkins.

Step 3: Download Jenkins.war file and save it somewhere in your system.

Step 4: Open the folder in which Jenkins.war is located and open the Gitbash/Terminal

Step 5: Type the following: java -jar jenkins.war --enable-future-java --httpPort=8080

    a.   Copy the generated password and save it somewhere.

Step 6: Open a browser and type the following: http://localhost8080

Step 7: Install Suggested plugins/plugins.

Step 8: Set up username and password.

HOW TO CREATE PROJECT IN JENKINS AND CONFIGURE JENKINS:

    a.   Create a project first: using New Item
    b.   Configure your project:
       Configure:
       1.   *Source Code Management* -> Git & Repository URL and credentials (set for each project separately)
       2.   **Build ->**Root Pom = path of your project pom.xml file
       3.   **Goals & options** = test, clean install, or what goal you want to specify here
       4.   **Build Settings**: set up your Email for build notifications.
       5.   **Post Build Actions**: select an action from drop down list like (publish html reports etc.)
    c.   Dashboard: Manage Jenkins ->
     i.   Tools ->
       1. JDK installation = provide name & path

       2.   Git installation =provide name and path to Git executable (where git.exe)
       3.   Maven Installation = Provide name and path