what is jenkins:

Jenkins is an open-source automation server used for building, testing, and deploying software projects. It enables continuous
integration and continuous delivery (CI/CD) by automating repetitive tasks in the software development lifecycle. Jenkins supports
extensive plugins for customization and integration with various tools.

How to install jenkins:

windows:

1. Prerequisites

- **Java Development Kit (JDK):**

    - Ensure you have Java installed (JDK 8 or later).

    - Download from Oracle or OpenJDK.

    - Set the `JAVA_HOME` environment variable pointing to your JDK installation directory.

2. Download Jenkins

1. Visit the Jenkins official website.

2. Go to the **Downloads** section and download the **Windows installer (.msi)**.

3. Install Jenkins

1. Run the downloaded `.msi` installer.

2. Follow the installation wizard:

    - Choose the installation path (default is typically `C:\Program Files (x86)\Jenkins`).

    - Select the Jenkins Windows service option.

3. Click **Install** to proceed.

4. Post-Installation Setup

1. After installation, Jenkins will start automatically as a Windows service.

2. Open a browser and go to http://localhost:8080.

3. During the initial setup, Jenkins will ask for an **admin password**:

   - Find the password in the file `C:\Program Files (x86)\Jenkins\secrets\initialAdminPassword`.

   - Open the file, copy the password, and paste it into the Jenkins interface.

5. Install Recommended Plugins

- After entering the admin password, Jenkins will prompt you to install plugins.

- Select **Install Suggested Plugins** or customize the plugin list as needed.

6. Create an Admin User

- Once plugins are installed, you'll be asked to create your first admin user.

- Provide the necessary details and complete the setup.

7. Configure Jenkins

- Set up global configurations such as paths, tools (e.g., Git), and security settings.

- Optionally, configure Jenkins to start at boot by ensuring the Windows service is enabled.

8. Verify the Installation

- Open the Jenkins dashboard at http://localhost:8080.

- Check if Jenkins is running correctly and test with a sample job.