Task 1: Deploy war file on Tomcat in local machine using Jenkins

Steps:

After Installing Tomcat and Jenkins below are the steps to deploy a war file on Tomcat.

1) Create a Freestyle job in Jenkins .
2) Under the "Build Steps" option select "Execute Shell" option.
3) Write the following code into Execute Shell.

```
cd /mnt/
sudo git clone https://github.com/SumitMatte/onlinebookstore.git
cd /mnt/onlinebookstore/
mvn clean install
sudo cp -r target/onlinebookstore.war /opt/tomcat/webapps
sudo systemctl restart tomcat
```

We copy the github project into the 'mnt' directory and we change the directory where our "pom.xml" file is present. We run the "mvn install" command to build our project and the war file is generated in the "target" directory. After that we deploy/copy the war file into "**/opt/tomcat/webapps"** directory. Now hit the url/ip to see the output on the browser.

Task 2: Deploy war file through Jenkins installed on local machine on Tomcat which is installed on an EC2 instance using SSH.

Steps:

1) Install "SSH Plugin" in Jenkins, click on "manage Jenkins —> Plugins —> Available Plugins" search SSH Plugin and install it and restart Jenkins.

2) Write the shell script files and upload them on github. Following are the code for shell script.

```
#!/bin/bash
sudo apt update
sudo apt install default-jdk -y
sudo apt-get install tomcat9 -y
sudo apt install maven -y
```

```
cd /mnt/
sudo git clone https://github.com/SumitMatte/onlinebookstore.git
cd /mnt/onlinebookstore/
mvn install
sudo chmod -R o+w /var/lib/tomcat9/webapps/
sudo cp -r target/onlinebookstore.war /var/lib/tomcat9/webapps/
```

3) Go to "Manage Jenkins —> Credentials —> Add Credential, Under "Kind" option select "SSH Username with private key", copy paste ip address in "IP" section, give Description and username and copy paste the "private key" under private key section and save it.

4) Go to "Manage Jenkins —>System, Unser SSH remote hosts" section enter public IP address of instance in hostname, enter port no.--> 22, select credentials which we have created in the above steps. Click on the "check connection" option to check whether our ssh connection is established or not.

5) Create freestyle job and under "Build Steps" and select "Execute shell script on remote host using ssh" option and write below code.

```
cd /mnt
sudo git clone https://github.com/SumitMatte/repo.git
sudo chmod -R  o+x /mnt/repo/script.sh
/mnt/repo/script.sh
```

Using the above code we clone the repository where our shell script is stored. We have to give the execute permission to shell script to execute shell script.