Developer Environment Setup

1. Introduction

This document guide is to help developer settings up the development environment to work in NazTech projects. which mostly composed of Java, maven and Eclipse / STS IDE.

2. Configure Windows Environment

2.1 Setup JAVA_HOME

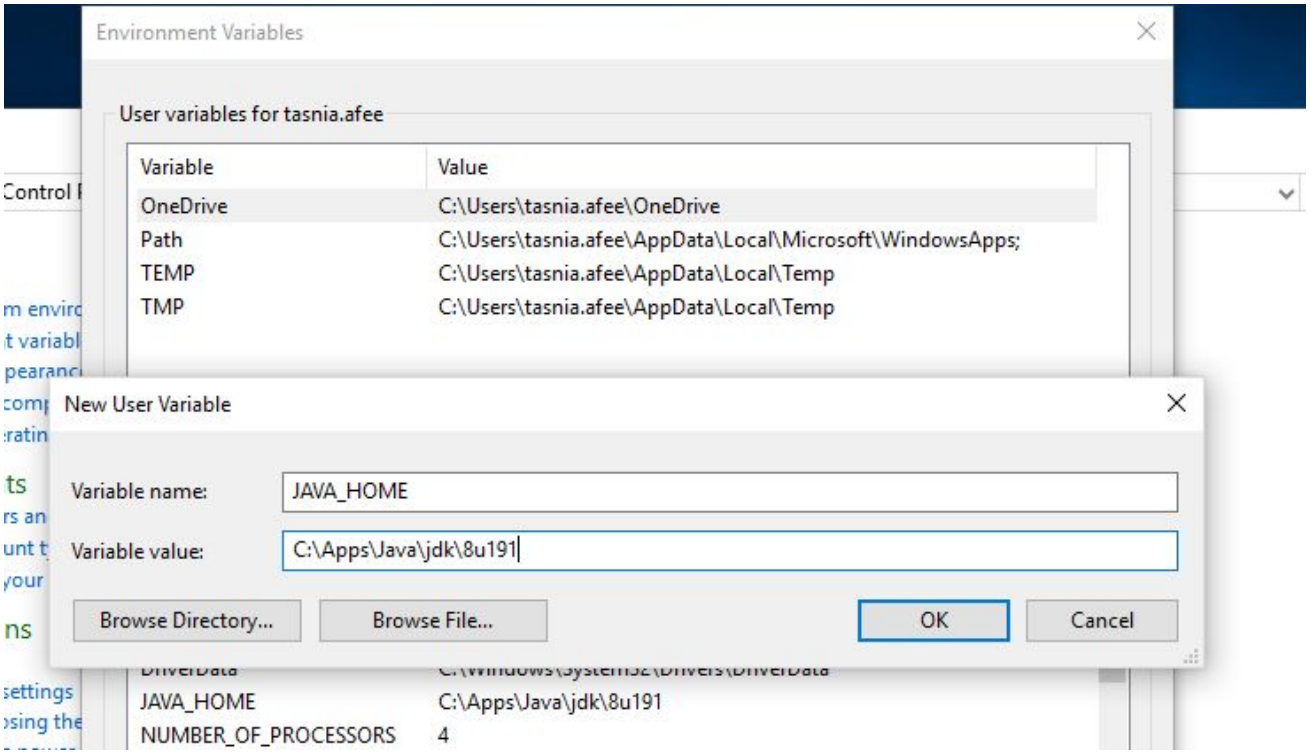
2.1.1 Install the JDK software.

1. Go to http://java.sun.com/javase/downloads/index.jsp.
2. Select the appropriate JDK version and click Download.
3. The JDK software is installed on your computer, for example, at C:\Apps\Java\jdk.You can change this location.

2.1.2 Set JAVA_HOME Environment

1. Right click My Computer and select Properties.
2. On the Advanced tab, select Environment Variables, and then edit JAVA_HOME

   to point to where the JDK software is located; e.g. `C:\Apps\Java\jdk\8u191`



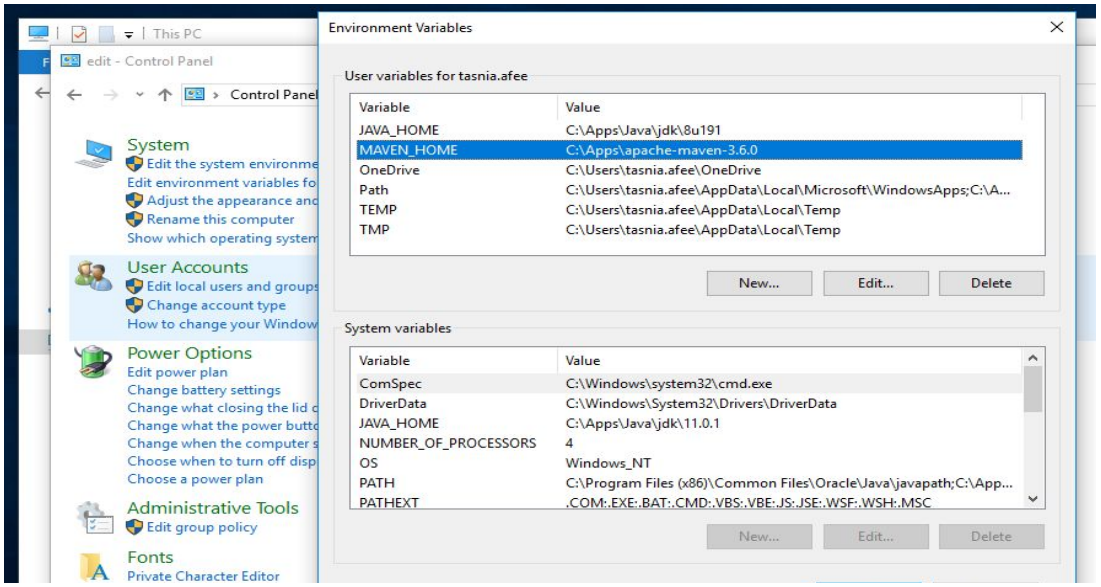
2.2 Installing Apache Maven

The installation of Apache Maven is a simple process of extracting the archive and adding the bin folder with the mvn command to the PATH.

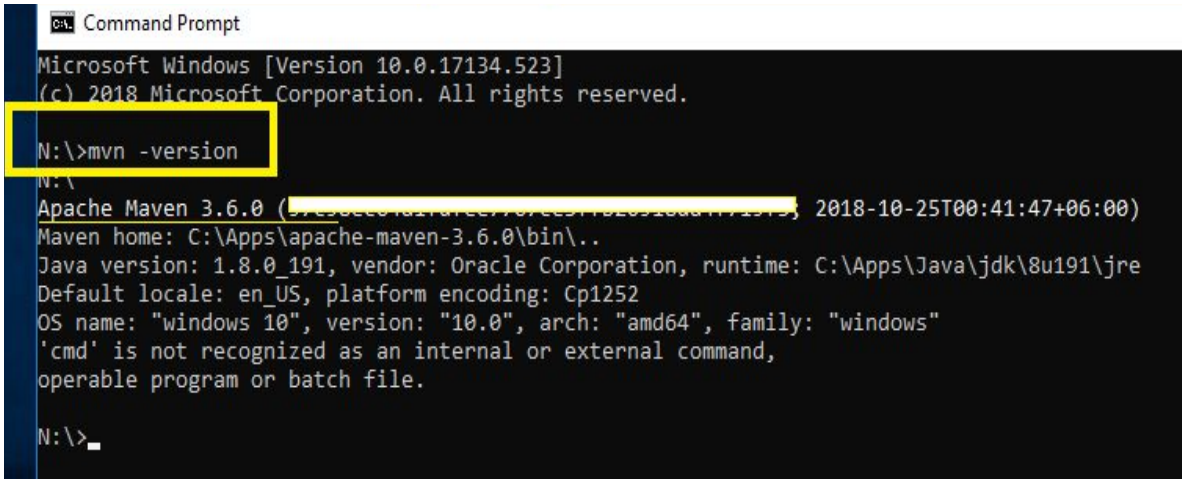
The Detailed process is given below:

- Ensure JAVA_HOME environment variable is set and points to your JDK installation
- Get the apache-maven-3.6.0.zip from a colleague or download if needed.

    - Download location: http://maven.apache.org/download.cgi
- Extract distribution archive and move it to `C:\Apps`
- Add environment variable MAVEN_HOME and set it to `C:\Apps\apache-maven-3.6.0`
    - See section 2.1.2 on where to add it
- Add the bin directory of the created directory apache-maven-3.6.0 to the PATH environment variable.
- Go to C:\ → Apps\ → paste apache-maven-3.6.0



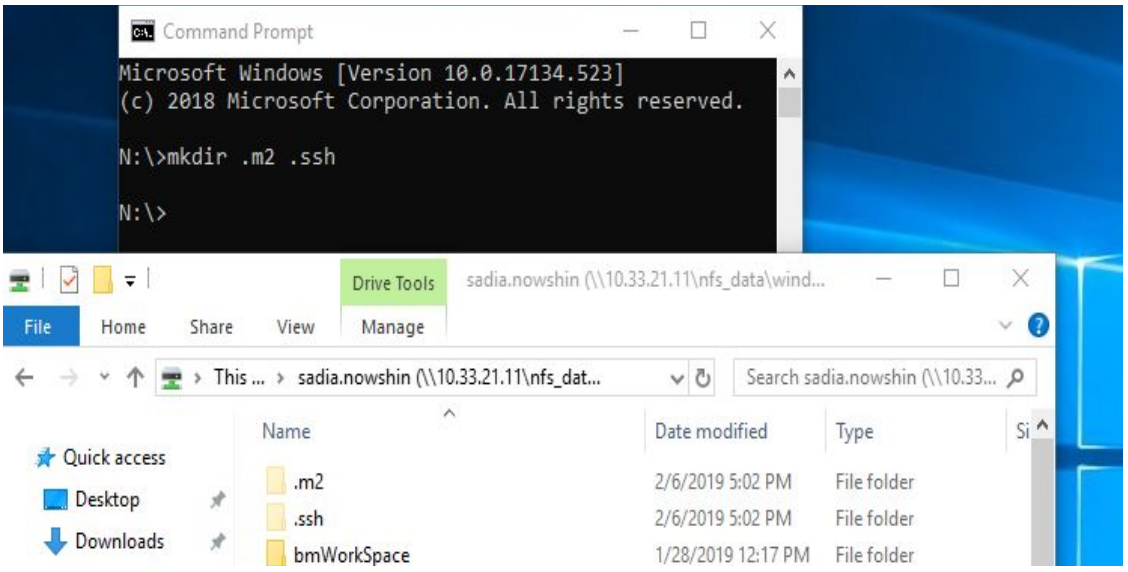
- Confirm with mvn -v in a new shell.



2.3 Create Necessary Directories

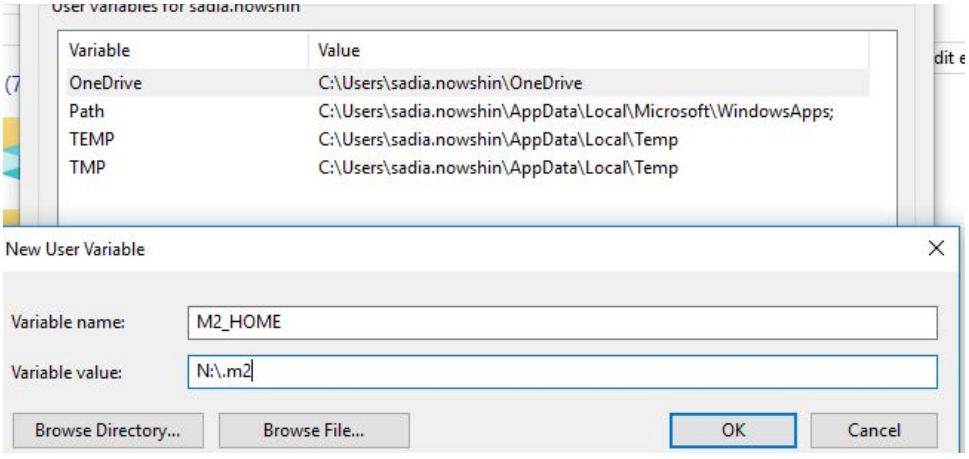
Create two directories in N:\ drive naming ‘.m2 ‘ and ‘.ssh’. Do this in windows command line (cmd).

```
N:\> mkdir .m2 .ssh
```



2.4 Setup M2_HOME

- Adding path to AD drive.
- Go to Control panel → Select Environment Variables → Edit Environment Variables → new → Select variable name and variable value.
- Setup M2_HOME like shown in the screenshot. M2_HOME path should point to .m2 folder in your mounted remote home (e.g. N:\) directory.



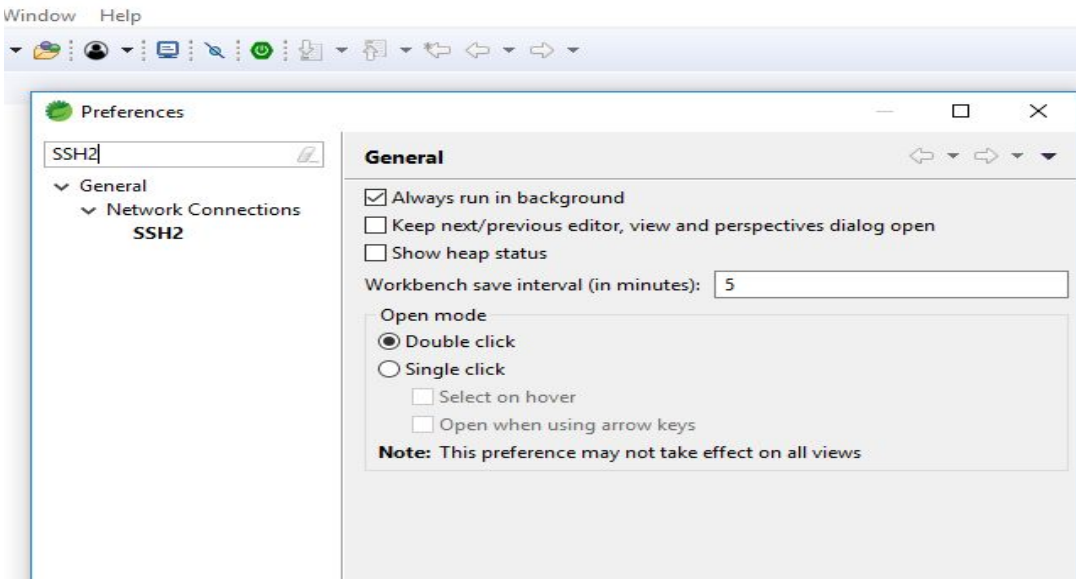
3. Setup SSH keys

After this we will need SSH key and then access to git repository.

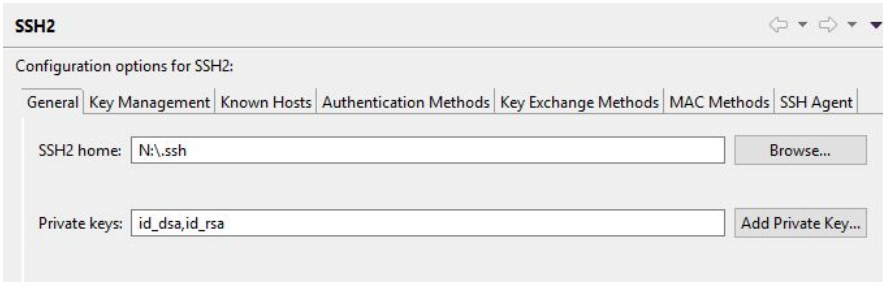
3.1 Create SSH key in Eclipse/STS

Open STS (Spring Tool Suite) and follow the below instructions.

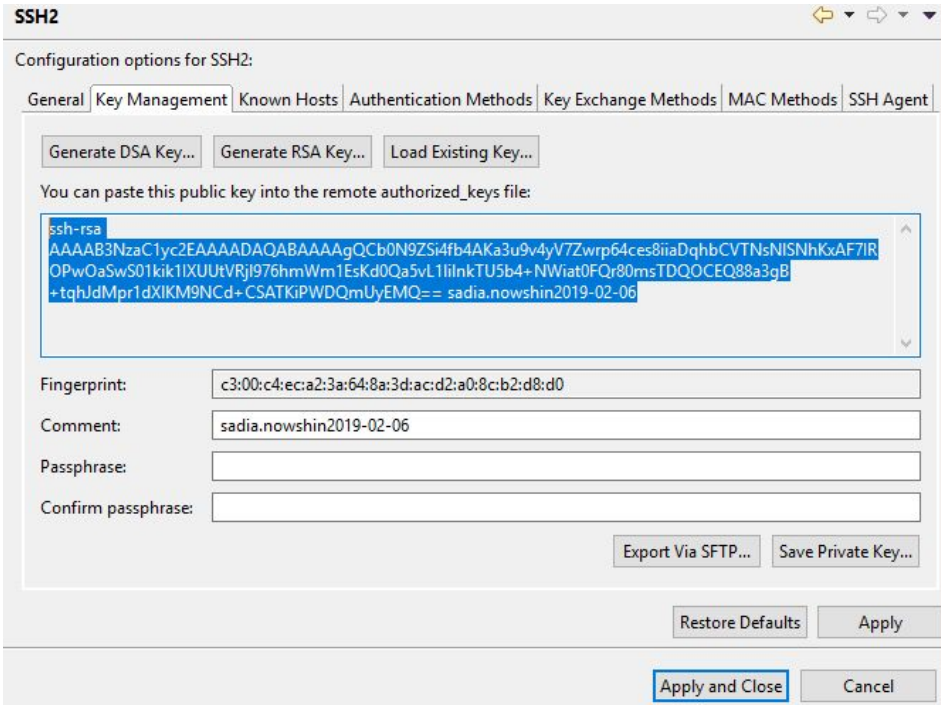
1. STS → (Navigation Bar)Window → Preferences → (search option)SSH2



2. (SSH Home Navigation bar) General → Browse & select respective “N:\ ssh”



3. (SSH2 Home Navigation bar) Key Management → Generate RSA key → write in Comment(box)"AD username-year-month-date"(see the format from ss)
→ Copy the key → click **Save Private Key** → click Apply and Close

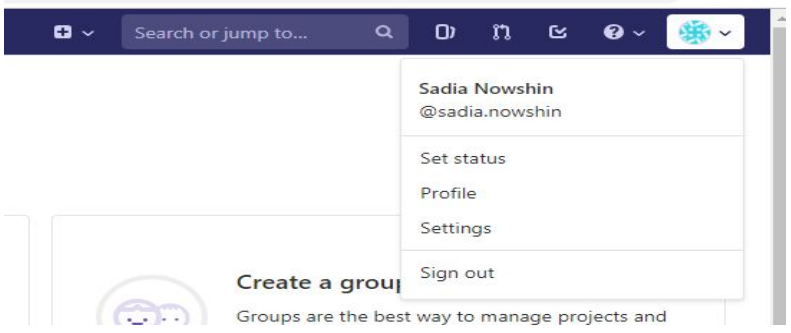


3.2 Login to naztech git repository site

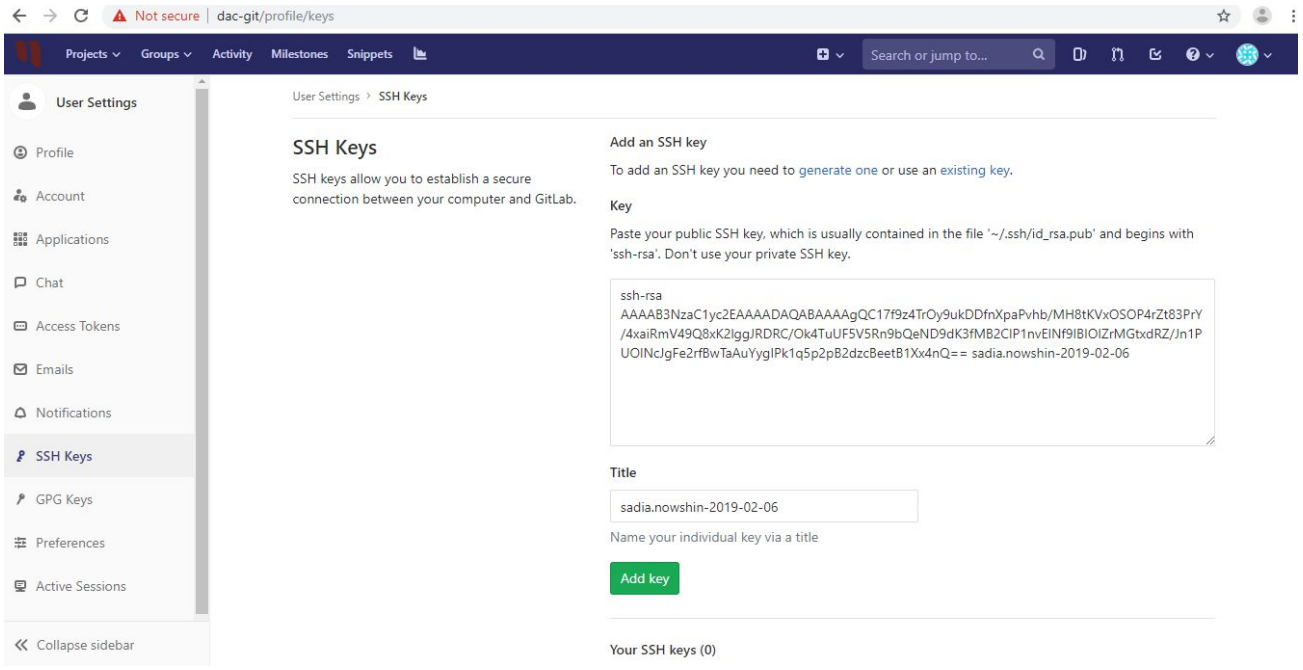
- Go to "http://dac-git/"and follow the sequences:

1. Login with AD username and password in LDAP option

2. Go to Settings at account option



3. Go to SSH keys → paste previously generated RSA key from STS → click ‘Add key’ button



3.3 Test SSH Setup with Git Bash

Open Git Bash application and run the below command. It should show similar kind of output matching AD user name.

```
$ ssh -T git@dac-git
```

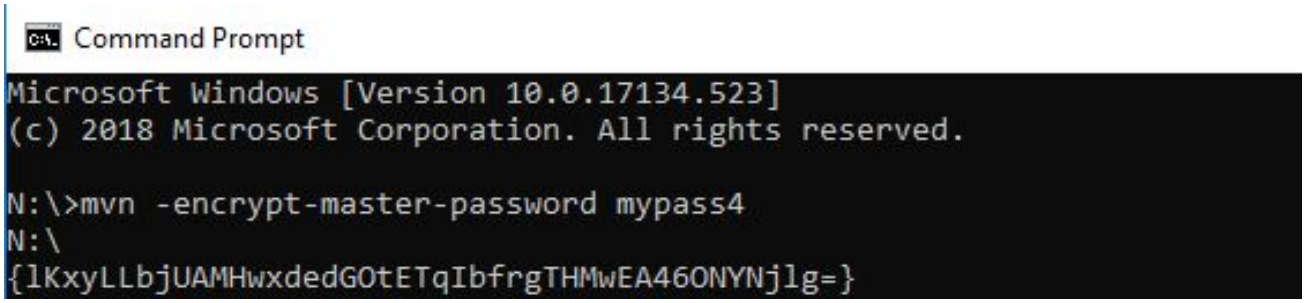
3.4 Secure Password with Encryption in Maven settings.xml

3.4.1 Maven Encrypted master password generation

1. Go to windows command line (cmd) and write the following command.
(Press Enter after each command)

```
N:\>mvn -encrypt-master-password <Choose master password>
```

An encrypted master key will be generated . Now copy the generated key and save it for setting it to master key.



Create setting-security.xml in C:\ drive → Users → AD user name (e.g - sadia.nowshin) → .m2 → *here*

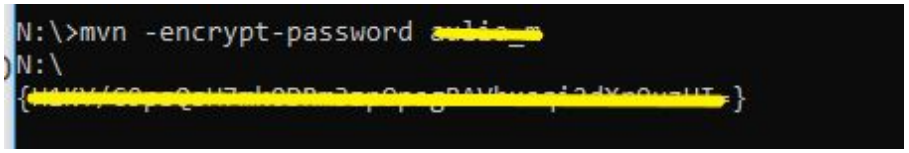
Set master encrypted key into setting-security.xml. See sample in Appendix A.2.

3.4.2 Maven Encrypted password generation

1. Go to windows command line (cmd) and write the following command.

(Press Enter after each command)

```
N:\> mvn -encrypt-password <AD password>
```



An encrypted key will be generated . Now copy the generated key and save it .

2. Go to ‘settings.xml’ and set the “encrypted key” in the following way(Follow the Appendix A.1)

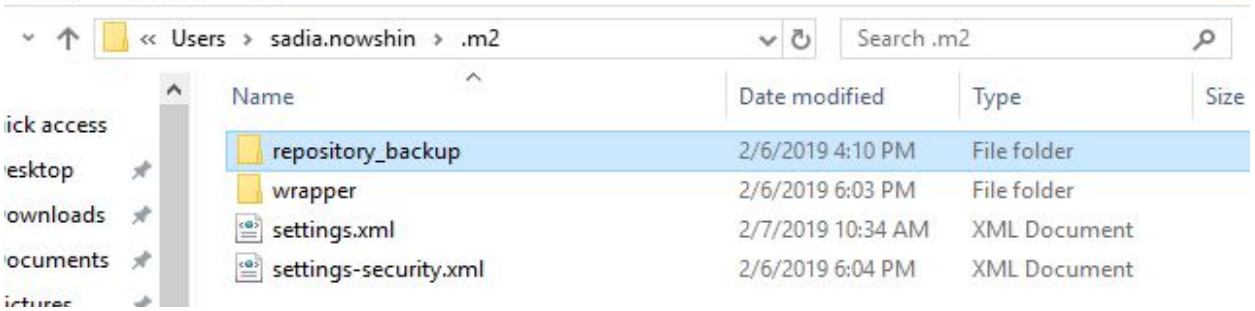
4. Set up Maven Repository in N:\ Drive

Check out the following command :

- Go to C:\ drive → Users → AD user name (e.g - sadia.nowshin) → .m2 → copy and paste here the provided files named- ‘repository ’ , ‘settings.xml’

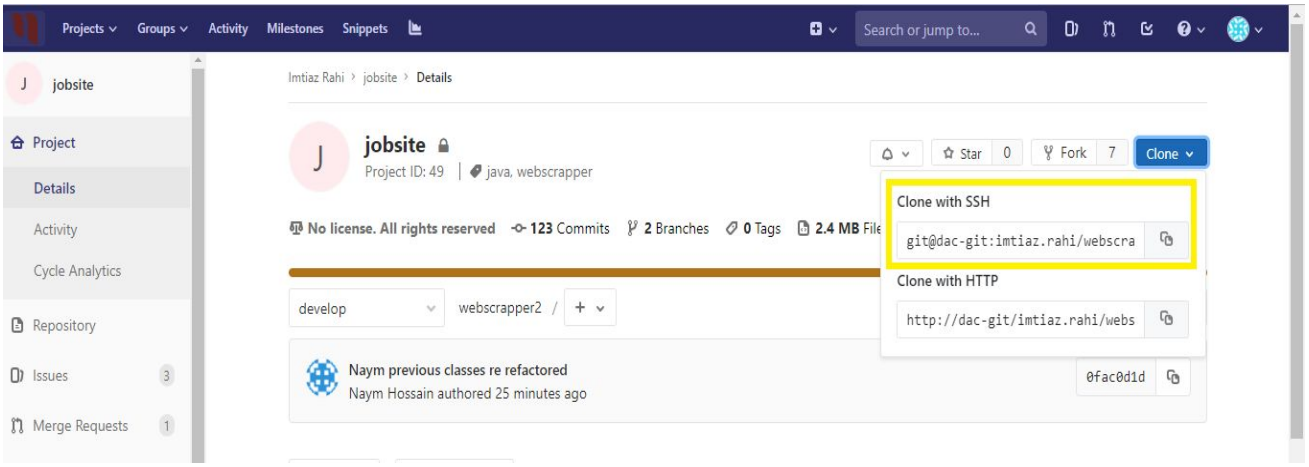
- Copy “repository ” folder to **N:\ → .m2**

- Rename repository folder to anything else (e.g. “Repository_backup”)

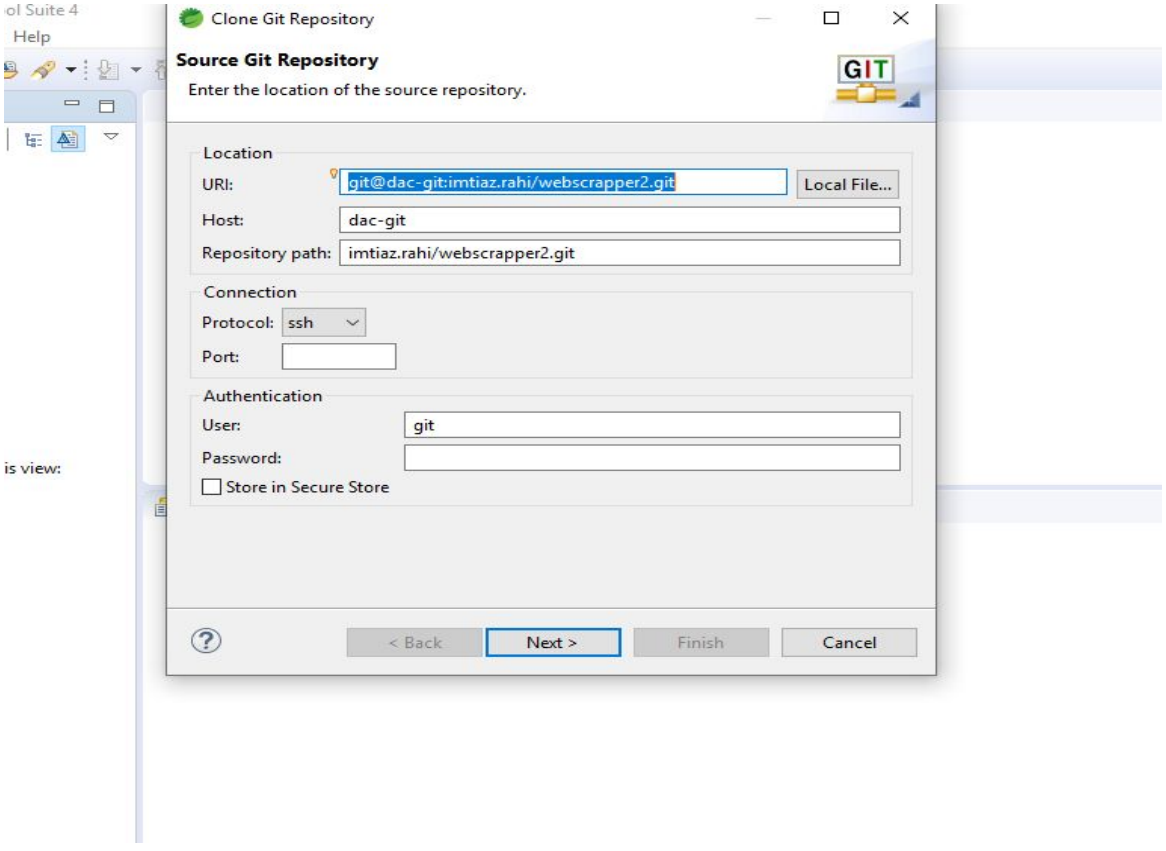


5. Import git project

1. Go to "http://dac-git/" → your project → click 'ImtiazRahi/jobsite' → clone SSH



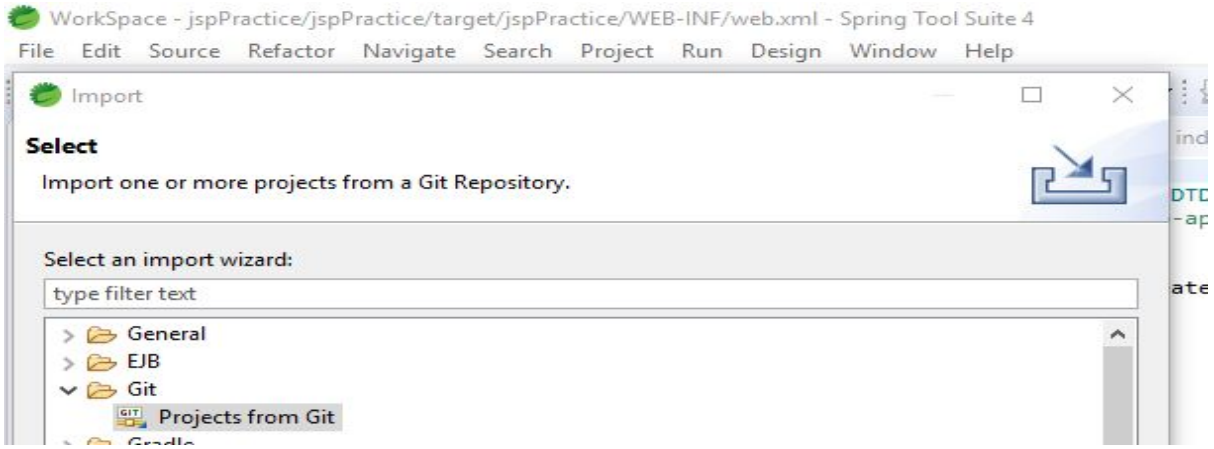
2. Go to STS → Git Clone → next



Follow the sequences given below:

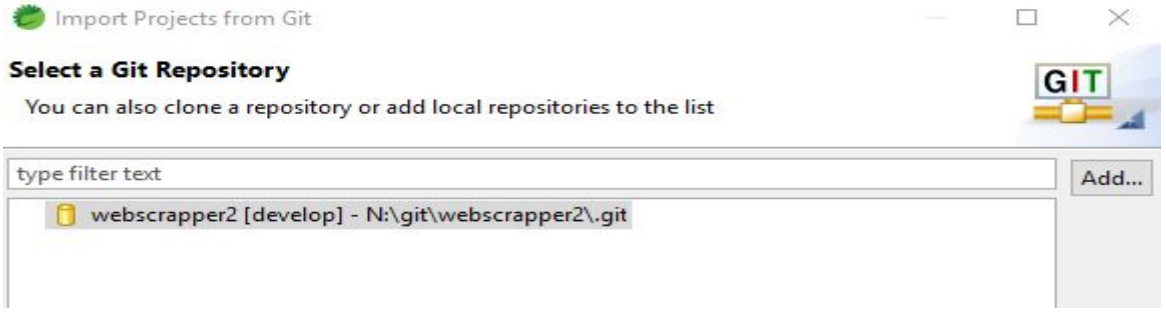
3. Go to STS

4. File → Import → Git → Projects from Git → click Next

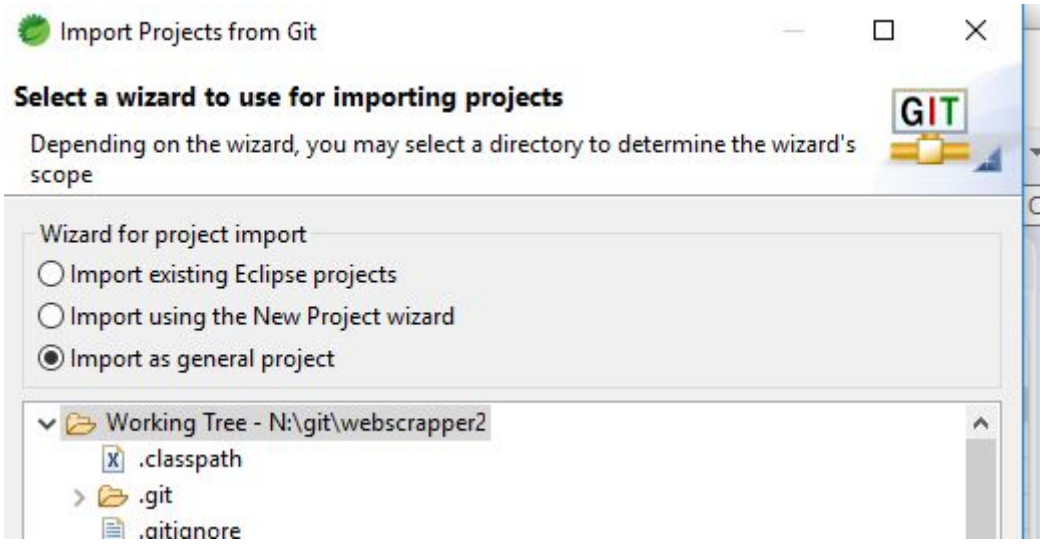


- Existing local repository → click Next →

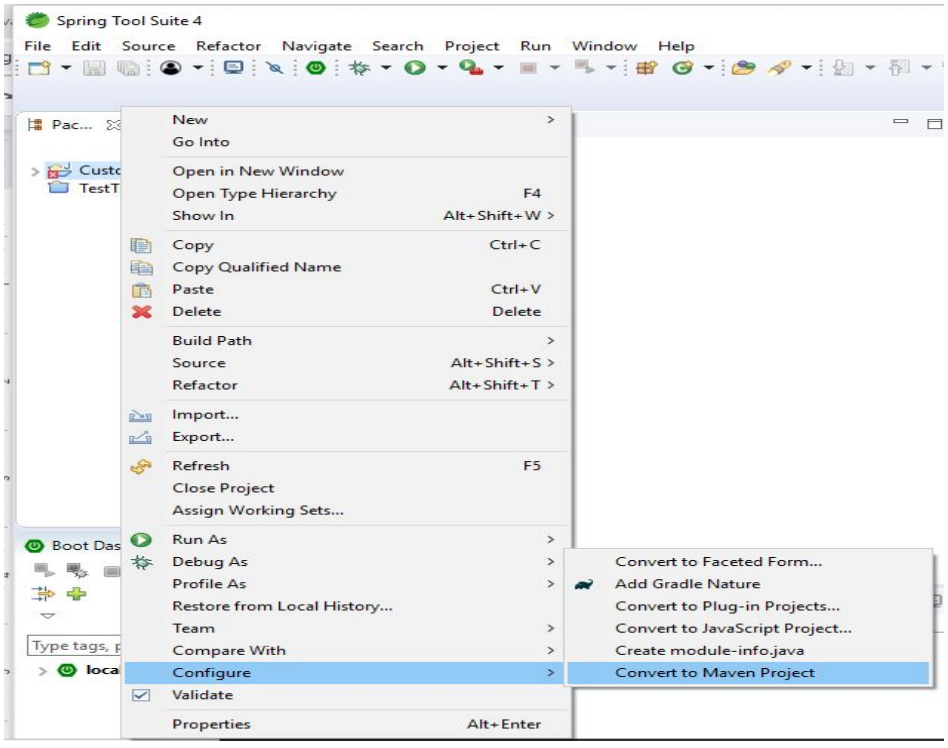
- choose file “webscrabber2” →



- choose option “Import as general project” **(“Import as Eclipse project”, if imported once before)** → click Finish



5. Imported `File → Configure → Convert to maven project` (if it is already a maven project,not only as git project , then it is not needed)



Appendix A.1: Maven settings.xml sample

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<settings xmlns="http://maven.apache.org/SETTINGS/1.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/SETTINGS/1.0.0
http://maven.apache.org/xsd/settings-1.0.0.xsd">

  <localRepository>N:\.m2\repository</localRepository>

  <mirrors>
    <mirror>
      <id>maven-mirror</id>
      <mirrorOf>naztech</mirrorOf>
      <url>http://dac-repo.ntdac.naztech.local:8080/artifactory/nazdaq-repo</url>
    </mirror>
  </mirrors>

  <profiles>
    <profile>
      <id>naztech</id>
      <activation> <activeByDefault>true</activeByDefault> </activation>
      <repositories>
        <repository>
          <snapshots> <enabled>false</enabled> </snapshots>
          <id>naztech</id>
          <name>nazdaq-repo</name>
          <url>http://dac-repo.ntdac.naztech.local:8080/artifactory/nazdaq-repo</url>
        </repository>
        <repository>
          <snapshots/>
          <id>snapshots</id>
          <name>nazdaq-repo</name>
          <url>http://dac-repo.ntdac.naztech.local:8080/artifactory/nazdaq-repo</url>
        </repository>
        <repository>
          <snapshots> <enabled>false</enabled> </snapshots>
          <id>handchina</id>
          <name>handchina-rdc</name>
          <url>http://nexus.saas.hand-china.com/content/repositories/rdc</url>
        </repository>
        <repository>
          <snapshots> <enabled>false</enabled> </snapshots>
          <id>clojars</id>
          <name>clojars-repo</name>
          <url>http://clojars.org/repo</url>
```

```
        </repository>
      </repositories>

      <pluginRepositories>
        <pluginRepository>
          <snapshots> <enabled>false</enabled> </snapshots>
          <id>naztech</id>
          <name>plugins-release</name>
          <url>http://dac-repo.ntdac.naztech.local:8080/artifactory/plugins-release</url>
        </pluginRepository>
        <pluginRepository>
          <snapshots/>
          <id>snapshots</id>
          <name>plugins-snapshot</name>
          <url>http://dac-repo.ntdac.naztech.local:8080/artifactory/plugins-snapshot</url>
        </pluginRepository>
      </pluginRepositories>
    </profile>

    <profile>
      <id>downloadSources</id>
      <activation> <activeByDefault>true</activeByDefault> </activation>
      <properties>
        <downloadSources>true</downloadSources>
        <downloadJavadocs>false</downloadJavadocs>
      </properties>
    </profile>

  </profiles>

  <servers>
    <server> <id>naztech</id> <username>[ADusername]</username>
              <password>[ADpasswordEncrypted]</password> </server>
    <server> <id>snapshots</id> <username>[ADusername]</username>
              <password>[ADpasswordEncrypted]</password> </server>
  </servers>
</settings>
```

Appendix A.2: Maven settings-security.xml sample

```
<?xml version="1.0"?>
<settingsSecurity>
  <master>{kyW42XDIkg0HfkTqc1hSNiqq9beQ13vBWmpA8YdCgM0=}</master>
</settingsSecurity>
```

Appendix B: Necessary Git Basics

1. Pro Git Book
2. https://git-scm.com/book/en/v2/Getting-Started-Git-Basics (1.3)
3. https://git-scm.com/book/en/v2/Distributed-Git-Distributed-Workflows (5.1)
4. https://git-scm.com/book/en/v2/Distributed-Git-Contributing-to-a-Project (5.2)
5. When do you use git rebase instead of git merge?
6. https://www.atlassian.com/git/tutorials/merging-vs-rebasing