MINISTRY OF EDUCATION AND SCIENTIFIC RESEARCH

TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA

FACULTY OF AUTOMATION AND COMPUTER SCIENCE
COMPUTER SCIENCE DEPARTMENT

DISTRIBUTED SYSTEMS

Lab Resources

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Contents

1 Java

1.1 Java JDK and JRE

1) Access the next link: http://www.oracle.com/technetwork/java/javase/downloads/index.html

2) Click on the icon which is above Java Platform (JDK). You will be redirected to Java downloads.

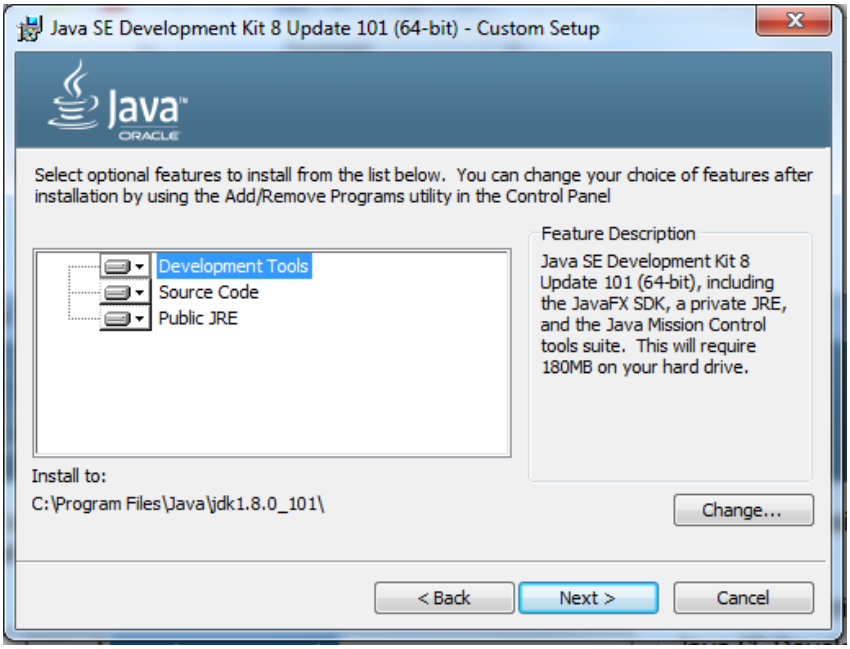
Java SE Development Kit 8u101

You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

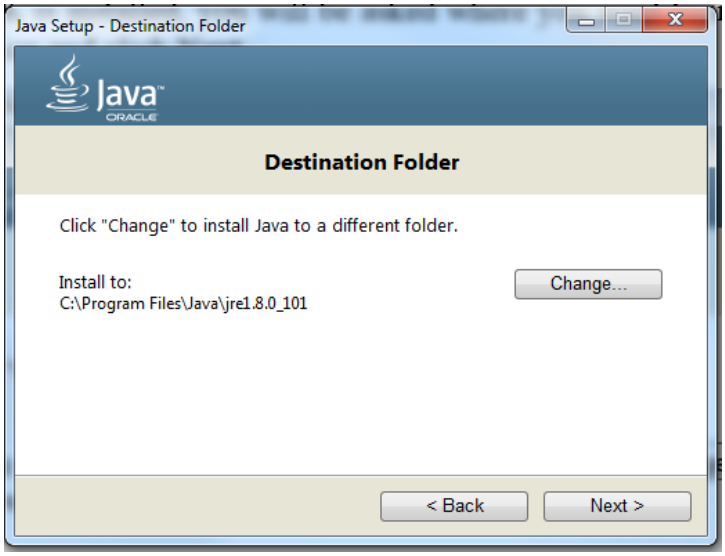
○ Accept License Agreement ◉ Decline License Agreement

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	77.77 MB	jdk-8u101-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	74.72 MB	jdk-8u101-linux-arm64-vfp-hflt.tar.gz
Linux x86	160.28 MB	jdk-8u101-linux-i586.rpm
Linux x86	174.96 MB	jdk-8u101-linux-i586.tar.gz
Linux x64	158.27 MB	jdk-8u101-linux-x64.rpm
Linux x64	172.95 MB	jdk-8u101-linux-x64.tar.gz
Mac OS X	227.36 MB	jdk-8u101-macosx-x64.dmg
Solaris SPARC 64-bit	139.66 MB	jdk-8u101-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	98.96 MB	jdk-8u101-solaris-sparcv9.tar.gz
Solaris x64	140.33 MB	jdk-8u101-solaris-x64.tar.Z
Solaris x64	96.78 MB	jdk-8u101-solaris-x64.tar.gz
Windows x86	188.32 MB	jdk-8u101-windows-i586.exe
Windows x64	193.68 MB	jdk-8u101-windows-x64.exe

3) Click on the link Accept License Agreement.
4) Click on the link which corresponds to your version of the Operating System. In the example the version which is used corresponds to Windows x64 and the file is named jdk-8u101-windows-x64.exe.
5) After *java-version*.exe is pressed, a file with the same name will be downloaded.
6) Click on *java-version*.exe.
7) You will be asked the next question: Do you want to allow the following program to make changes to this computer? Click Yes.
8) Click Next.
9) You will be asked where you want to install Java. Use the default location and click Next.



10) After the JDK is installed, you will be asked where you want to install the JRE. Use the default location and click Next.



11) After the installation is completed click Close.

1.2 Set JAVA_HOME and JAVA_JRE variables

1) Click Start.
2) Right-Click on Computer.
3) Select Properties.
4) Click on Advanced System Settings.
5) Click on Environment Variables.

6) Under System Variables click New.
7) In the text field associated with the name of the variable insert JAVA_HOME and in the field associated with the value of the variable insert C:\Program Files\Java\j*ava_version*;.
8) Click OK.
9) Under System Variables click New again.
10) In the text field associated with the name of the variable insert JRE_HOME and in the field associated with the value of the variable insert C:\Program Files\Java\j*ava_version*;.
11) Click OK.

2 Eclipse IDE for Java EE Developers

1) Access the next link: http://www.eclipse.org/downloads/packages/eclipse-ide-java-ee-developers/mars2.

2) In Package Solutions search for Eclipse IDE for Java EE Developers, and click on the version which is appropriate for your computer: 32 bit or 64 bit.

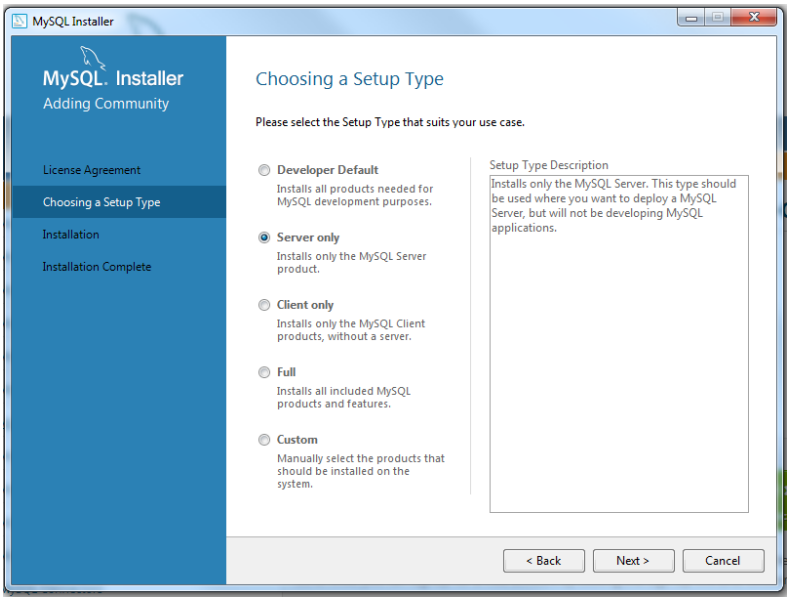
3) After clicking on 32 bit or 64 bit you will be redirected to a page where you will be asked to select a mirror. Click on Download.
4) You will obtain a file named eclipse-jee-mars-2-win32-x86_64.zip.
5) Open the archive eclipse-jee-mars-2-win32-x86_64.zip and extract it to C:\.
6) You can open Eclipse by clicking on the file eclipse.exe which should be at the location C:\eclipse\eclipse.exe.

3 MySQL

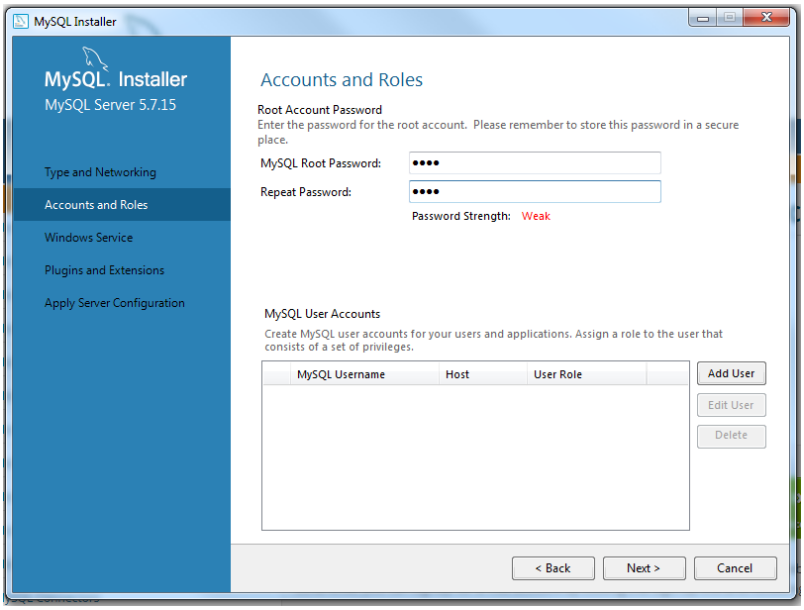
3.1 MySQL Server

1) Click on the next link: https://dev.mysql.com/downloads/windows/installer/.

2) Click on the second Download button.
3) Click on No thanks, just start my download.
4) Click on the file mysql-installer-community-5.7.15.0.msi.
5) Click Run.
6) Click Yes.
7) Click Yes.
8) Click I accept the license terms and then Next.
9) You will be asked to select the Setup Type that suits your use case. Select Server only and click Next.



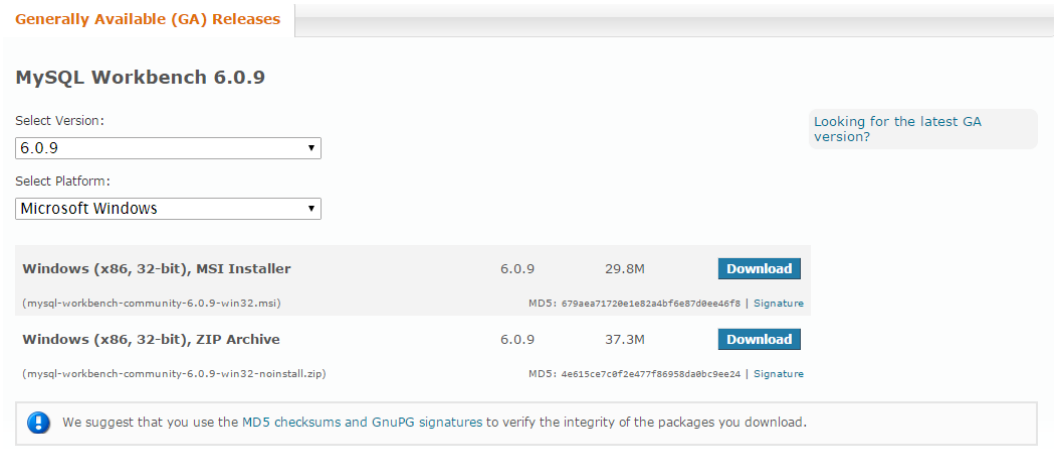
10) Click Next.
11) Click Execute.
12) After the product is installed, click Next.
13) Click Next.
14) Click Next.
15) Select a password, type it in the required fields and click Next.



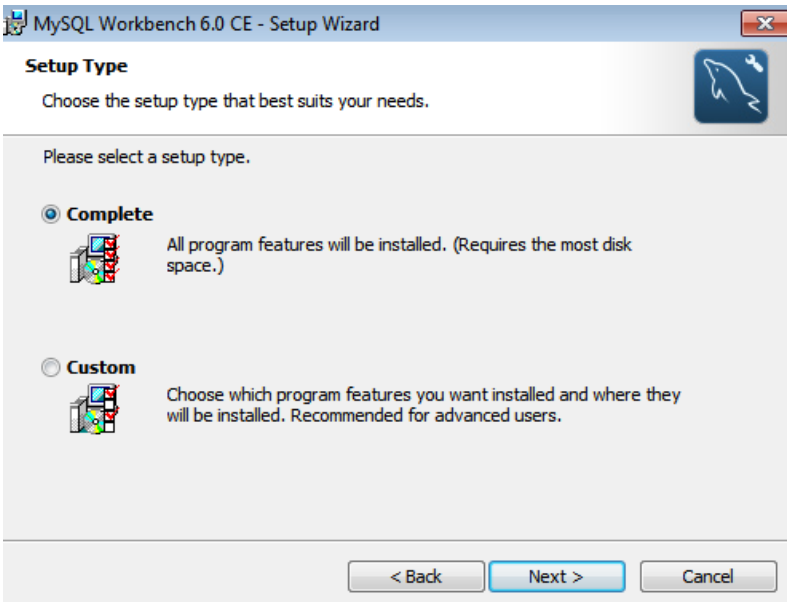
16) Use the default settings and click Next.
17) Click Next.
18) Click Execute.
19) After the server configuration is completed, click Finish.
20) Click Next.
21) Finally, after the installation is completed, click Finish.

3.2 MySQL Workbench

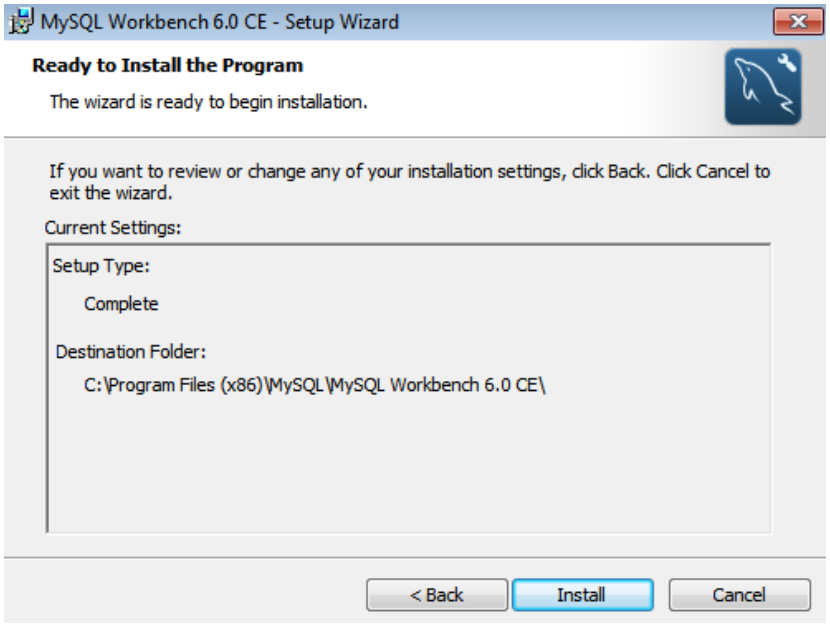
1) Click on the next link: https://dev.mysql.com/downloads/workbench/.
2) Click on the link: Looking for previous GA versions?
3) Select version 6.0.9 and click on the first Download button.



4) Click on the link No thanks, just start my download.
5) Open the file mysql-workbench-community-6.0.9-win32.msi.
6) Click Next.



7) Use the default location C:\ProgramFiles(x86)\MySQL\MySQLWorkbench 6.0 CE\ and click Next.

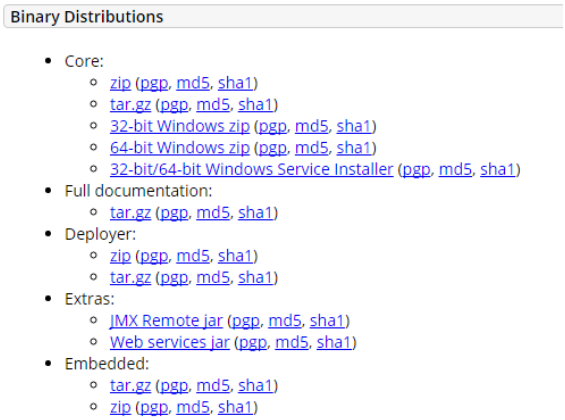


8) Select Complete for the setup type and click Next.
9) Click Install.
10) Click Yes.
11) Click Finish.

4 Web Server

4.1 Apache Tomcat

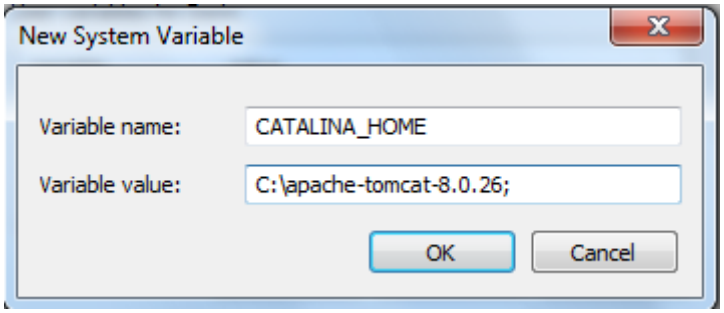
1) Click on the next link: https://tomcat.apache.org/download-80.cgi.
2) Under Binary Distributions look for Core and click on zip.



3) A file called apache-tomcat-*version*.zip is downloaded.
4) Extract the content of this file on C:\. The file startup.bat should be at the location C:\apache-tomcat-*version*\bin.

4.2 Set the CATALINA_HOME variable

1) Click Start.
2) Right-Click on Computer.
3) Select Properties.
4) Click on Advanced System Settings.
5) Click on Environment Variables.
6) Under System Variables click New.
7) In the text field associated with the name of the variable insert CATALINA_HOME and in the field associated with the value of the variable insert C:\apache-tomcat-*version*;.

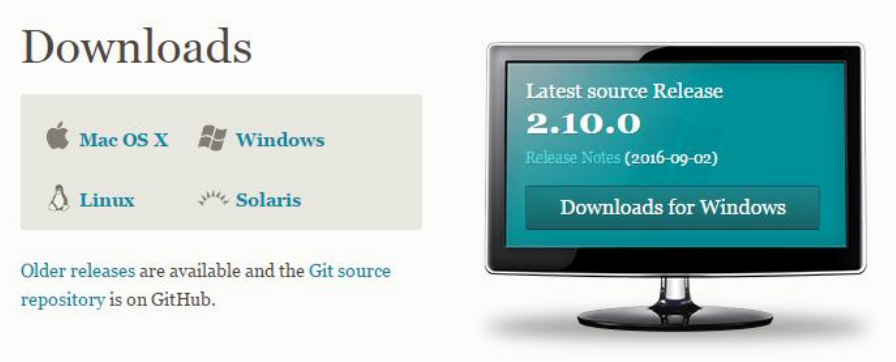


8) Click OK.

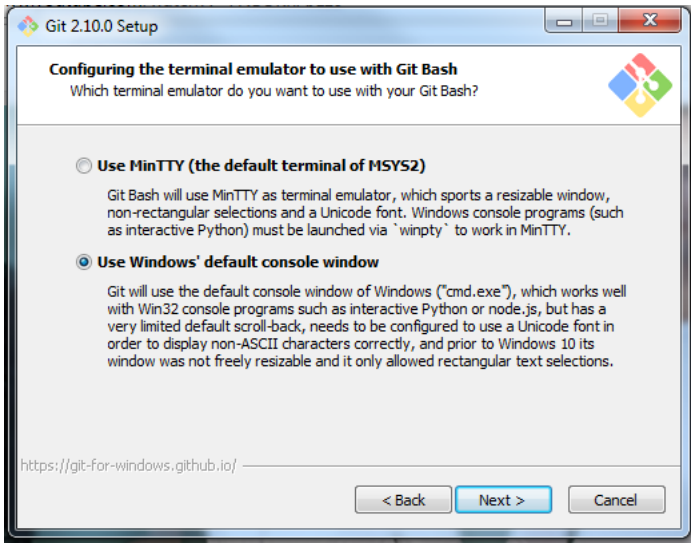
5 Git

5.1 Git installation

1) Click on https://git-scm.com/downloads.
2) Select your operating system.

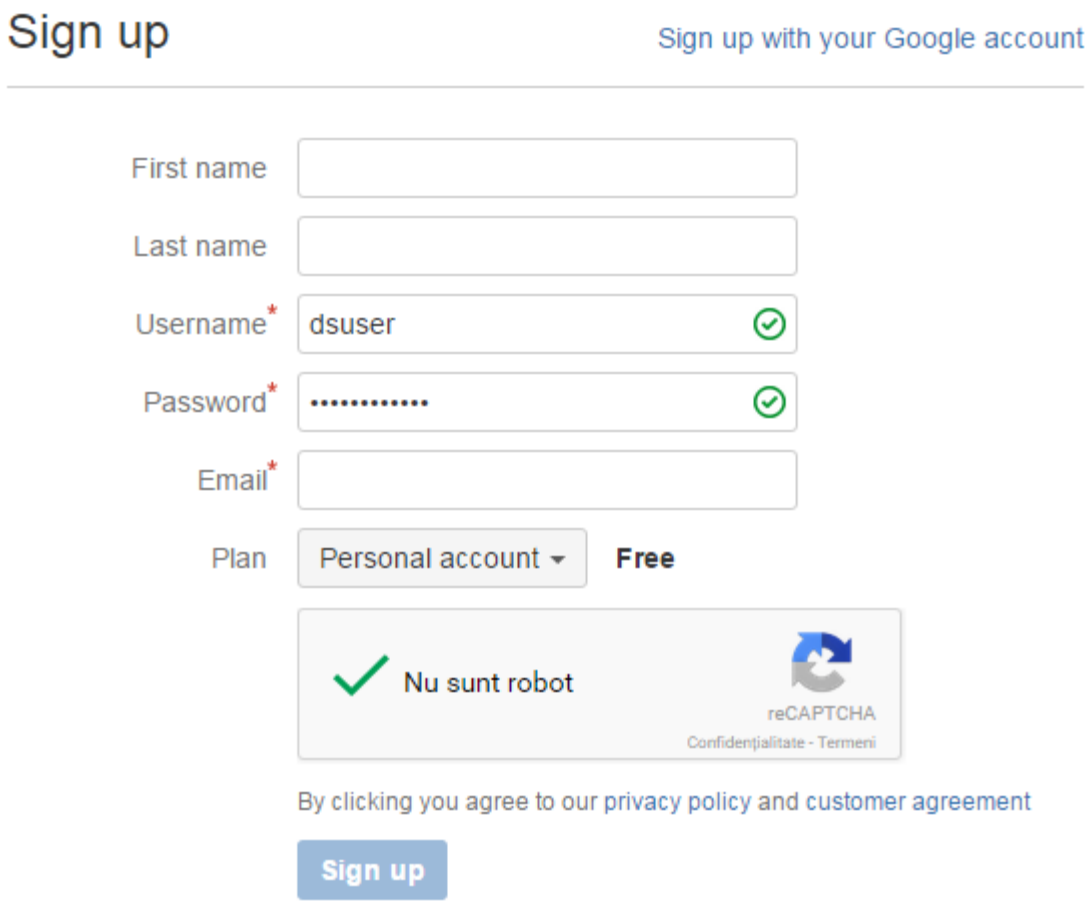


3) If you select Windows, a file called *Git-2.10.0-64-bit.exe* should be downloaded. In the case you select another operating system or if your system is on 32 bits then a file with a similar name should be downloaded.
4) Click on this file and follow the default installation guidelines, with the exception of the step where you are asked which terminal emulator you want to use. Select the second option.



5.2 Bitbucket

1) Click on https://bitbucket.org/.
2) Click on *Get Started*. You will be asked to introduce your personal information.



3) You will be asked to create a new repository. Choose *Empty* and give the name *DS_Group_LastName_FirstName* to your new repository.
4) Click *Done*.

5.3 Basic Instructions

5.3.1 Create a project from scratch

1) Create the folder *DS_Group_LastName_FirstName* on *D:*.
2) Right click on this folder and click *Git Bash Here*.
3) Introduce the next commands:
   a) git init
   b) git remote add origin
      https://dsuser@bitbucket.org/dsuser/ds_group_lastname_firstname.git
4) Open Eclipse, select *File -> New -> Project… -> Maven -> Maven Project* and click *Next*.
5) Instead of using the default Workspace location use this one:
   D:\DS_Group_LastName_FirstName
6) Click *Next*.
7) Introduce the next parameters:
   a) Group id: *ds.demo*

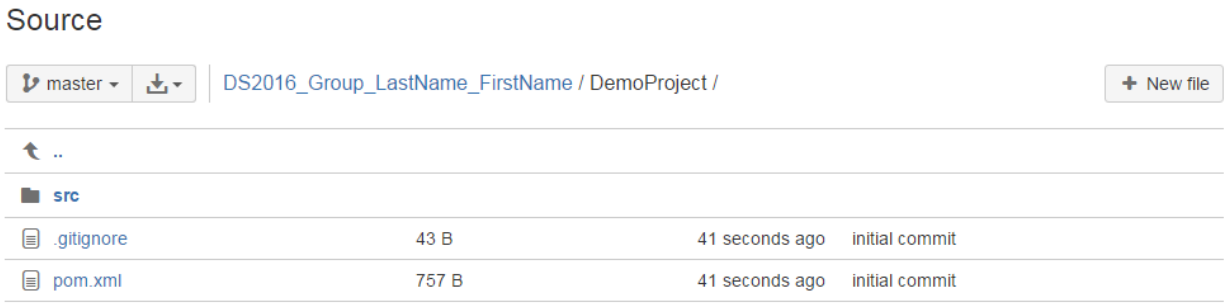
b) Artifact id: *DemoProject*

8) Click *Finish*.
9) In order to see the files of the form *.filename* click on *View Menu -> Filters…* and unselect the option *.* resources*.

10) Right click on the files *.settings, target, .classpath, .project* and select *Team -> Ignore*.
11) The file *.gitignore* will contain the files which will not be committed to the repository. You can also edit this file manually.

```
1 /target/
2 /.settings/
3 /.classpath
4 /.project
5
```

12) Right click on the folder *DS_Group_LastName_FirstName* and introduce the next commands:
    a) git add .
    b) git commit –a –m "initial commit"
    c) git push –u origin master
13) If you select Source on bitbucket.org, and click on the *DemoProject* you should see:



5.3.2 Update the project

1) Create a new class named *Main* in the same package as the class *App*.
2) Right click on *DS_Group_LastName_FirstName* and select *Git Bash*
3) Insert the next commands:
    a) git add .
    b) git commit –a –m "add new class"
    c) git pull origin master
    d) git push –u origin master
4) You can always see the modification that were not committed yet by using:
    a) git status

5.3.3. Getting git to work with a proxy server

1) In the UTCN laboratories you need to set the proxy server in order to use GIT bash
2) Open Git Bash
3) Insert the following commands:

a) git config --global http.proxy http://proxy.utcluj.ro:3128
b) git config –global --get http.proxy

4) In order to unset the proxy, use the following command:
   a) git config --global --unset http.proxy

5.3.4. Getting MAVEN to work with a proxy server

1) In the UTCN laboratories you need to set the proxy server in order to use MAVEN projects
2) Go to Windows Explorer-> Drive C-> Users -> *Your User* -> .m2
3) Create the folder **conf**
4) Go to conf folder and create the file **settings.xml** with the following content:

```
<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/>
  <interactiveMode/>
  <usePluginRegistry/>
  <offline/>
  <pluginGroups/>
  <servers/>
  <mirrors/>
  <proxies>
    <proxy>
      <id>myproxy</id>
      <active>true</active>
      <protocol>http</protocol>
      <host>proxy.utcluj.ro</host>
      <port>3128</port>
      <username></username>
      <password></password>
      <nonProxyHosts>localhost,127.0.0.1</nonProxyHosts>
    </proxy>
  </proxies>
  <profiles/>
  <activeProfiles/>
</settings>
```

5) Go back to folder **.m2**
6) Delete the folder **repository**
7) Open **Eclipse**
8) Go to **Window->|Preferences->|Maven->|User Settings**
9) At the **User Settings** tab browse for the **settings.xml** file created at step 4
10) Click **Apply** and **OK**
11) Go on the project, right click and go to **Maven->Update Project**