Setting Up Your Semantic Web Development Environment in Ubuntu Linux

Step 1: You must first install the Java 1.6 SDK. *Open up a terminal and type:*

sudo apt-get install sun-java6-bin sun-java6-jre sun-java6-jdk

You will need to enter your linux password to continue. After you enter your password you will see the following:

```
joe@joe-Laptop:~$ sudo apt-get install sun-java6-bin sun-java6-jre sun-java6-jdk
[sudo] password for joe:
Reading package lists... Done
Building dependency tree
Reading state information... Done
sun-java6-bin is already the newest version.
sun-java6-bin set to manually installed.
sun-java6-jre is already the newest version.
The following packages were automatically installed and are no longer required:
  libsm-dev libecj-java libice-dev liboro-java libpthread-stubs0 x11proto-kb-dev
  xtrans-dev x11proto-input-dev libxt-dev libantlr-java libxau-dev libx11-dev
  libxcb1-dev openjdk-6-jdk x11proto-core-dev libxdmcp-dev libpthread-stubs0-dev
Use 'apt-get autoremove' to remove them.
Suggested packages:
  sun-java6-demo sun-java6-source
The following NEW packages will be installed:
  sun-java6-jdk
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 20.4MB of archives.
After this operation, 63.0MB of additional disk space will be used.
Do you want to continue [Y/n]? ▊
```

type Y to continue..

Step 2: You must then install the Eclipse IDE. *Open up a terminal and type:*

sudo apt-get install eclipse

You will need to enter your linux password to continue. After you enter your password you will see the following:

```
  libcommons-digester-java libcommons-el-java libcommons-httpclient-java
  libdb-je-java libdb4.7-java libdb4.7-java-gcj libequinox-osgi-java libgcj-bc
  libgcj-common libgcj10 libhamcrest-java libicu4j-java libjasper-java
  libjaxp1.3-java libjetty-java libjline-java libjsch-java libjtidy-java
  liblucene2-java libservlet2.4-java libservlet2.5-java libslf4j-java
  libxerces2-java sat4j
Suggested packages:
  ant-gcj ant-doc libbsf-java libxalan2-java liblog4j1.2-java jython antlr
  libjdepend-java libgnumail-java libxml-commons-resolver1.1-java
  libcommons-net-java javacc ant-optional-gcj junit-doc
  libcommons-beanutils-java-doc libcommons-collections3-java-doc
  libcommons-digester-java-doc libcommons-httpclient-java-doc libgcj10-dbg
  libgcj10-awt libjaxp1.3-java-gcj jetty libjetty-java-doc libjline-java-doc
  libjtidy-java-doc libservlet2.4-java-gcj libjavassist-java
  libxerces2-java-doc libxerces2-java-gcj
The following NEW packages will be installed:
  ant ant-optional default-jdk eclipse eclipse-jdt eclipse-pde
  eclipse-platform eclipse-platform-data eclipse-plugin-cvs eclipse-rcp
  fastjar gcj-4.4-base gcj-4.4-jre-lib jarwrapper junit junit4
  libcommons-beanutils-java libcommons-codec-java libcommons-collections3-java
  libcommons-compress-java libcommons-digester-java libcommons-el-java
  libcommons-httpclient-java libdb-je-java libdb4.7-java libdb4.7-java-gcj
  libequinox-osgi-java libgcj-bc libgcj-common libgcj10 libhamcrest-java
  libicu4j-java libjasper-java libjaxp1.3-java libjetty-java libjline-java
  libjsch-java libjtidy-java liblucene2-java libservlet2.4-java
  libservlet2.5-java libslf4j-java libxerces2-java sat4j
0 upgraded, 44 newly installed, 0 to remove and 0 not upgraded.
Need to get 195MB of archives.
After this operation, 277MB of additional disk space will be used.
Do you want to continue [Y/n]? █
```

type Y to continue..

Step 3: You must then install the Protégé Ontology Editor

For this you must goto the website and download and install the correct version for your operating system. Click the following link

http://protege.stanford.edu/download/protege/4.1/installanywhere/Web_Installers/

Download the version that will work on your distribution. I chose the 64bit linux version. You will see the following:

Protege 4.1 Beta (build 218)

Missing Plug-in

Available Installers

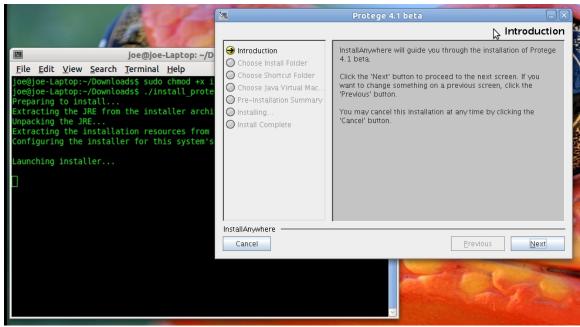|	Platform	includes Java VM	without Java VM	Instructions
X	MacOSX		Download (18.1M)	View
	Windows 64bit	Download (39.7M)	Download (18.7M)	View
	Windows	Download (43.1M)	Download (18.7M)	View
>	**Linux 64bit**	Download (58.4M)	Download (18.5M)	View
>	**Linux**	Download (67.5M)	Download (18.5M)	View
UNIX	Any Unix Platform		Download (18.5M)	View
Sun	Solaris		Download (18.5M)	View
hp	HPUX	Download (81.2M)	Download (18.5M)	View
IBM	AIX	Download (77.2M)	Download (18.5M)	View
	Other Java-enabled Platforms		Download (18.5M)	View

Once downloaded you will need to change the permissions in order to execute the installation file. Open up a terminal and goto the download directory and type:

```
sudo chmod +x install_protege_4.1.bin
```

You may have to enter your password again. Now you can execute the file. Type the following to install:

```
./install_protege_4.1.bin
```

You will then see the following:

Now just follow the instructions on the screen.

Step 4: You must now install the Jena Semantic Web Framework:

Go to http://downloads.sourceforge.net/jena/Jena-2.5.6.zip *and download the latest version of Jena. Extract the directory Jena-2.5.4 to your home directory. Add a generic link to this folder by typing:*

```
ln -s ~/Jena-2.5.4 ~/Jena
```

Now look at the Step-by-step guide to adding the Jena libraries in Eclipse click the following link

http://www.iandickinson.me.uk/articles/jena-eclipse-helloworld

Step 5: You must now install the Pellet Reasoner Plug-in for Protégé 4

Go to the installation section in **http://clarkparsia.com/pellet/protege/** *and follow the steps.*

Now that all of the software has been installed, you have two development tools: Eclipse for Java and Protégé for ontologies. You also have two sets of libraries: Jena for Semantic Web interactions and Pellet as an independent reasoner.