**Tevin Jeffrey CS 388: Android Application Development**

**Java Applet** is a small java program compiled to bytecode and executed within the Java Virtual Machine. They can be embedded within a web browser.

import java.applet.\*;

import java.awt.\*;

public class Main extends Applet{

public void paint(Graphics g){

g.drawString("Welcome in Java Applet.",40,20);

}

}

<HTML>

<HEAD>

</HEAD>

<BODY>

<div >

<APPLET CODE="Main.class" WIDTH="800" HEIGHT="500">

</APPLET>

</div>

</BODY>

</HTML>

The above code will produce this:

Welcome in Java Applet.

**Java Program** is compiled java file with a main method. Usually executed with the command ‘java progName’ in the command line.

public class Program{  
 public static void main(String[] args) {

System.out.println(“Hello World”);

}

}

$ javac Program.java

$ java Program

Hello World

**JavaScript** is a programming language for the web, usually coupled with HTML and CSS.

My personal website (blog.tevindev.me) is an example of a pure HTML CSS JS website.

**AngularJS** aims to extend the HTML by allowing custom HTML tag attributes and provides other extension to allow robust single page websites when data is dynamically loaded.

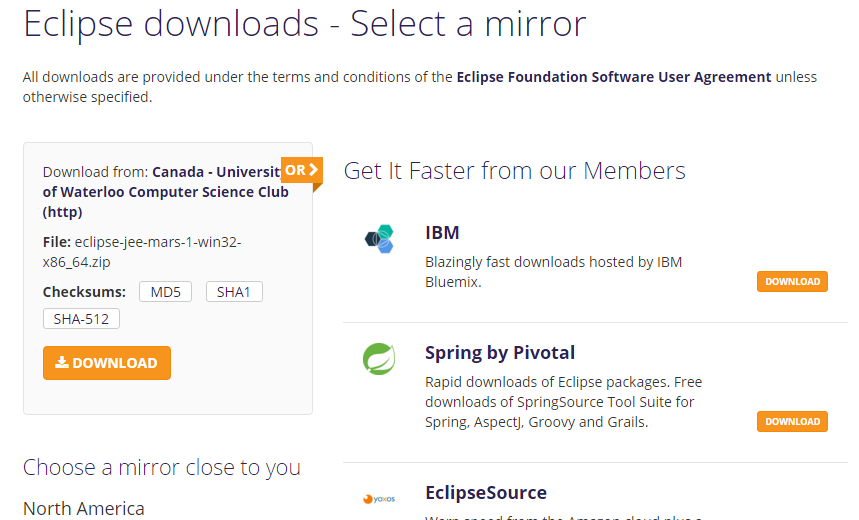
Netflix and Wikipedia are examples of and AngularJS websites.

A company like Google or Goldman Sachs will choose one other the other depending on the the maturity of the software. This includes the execution speed of the of the program, reliability and security. Java Applets are notorious for its security vulnerably in the browser. Google for example have move more towards JS websites, going so far as to develop their own JS framework and engine (V8).

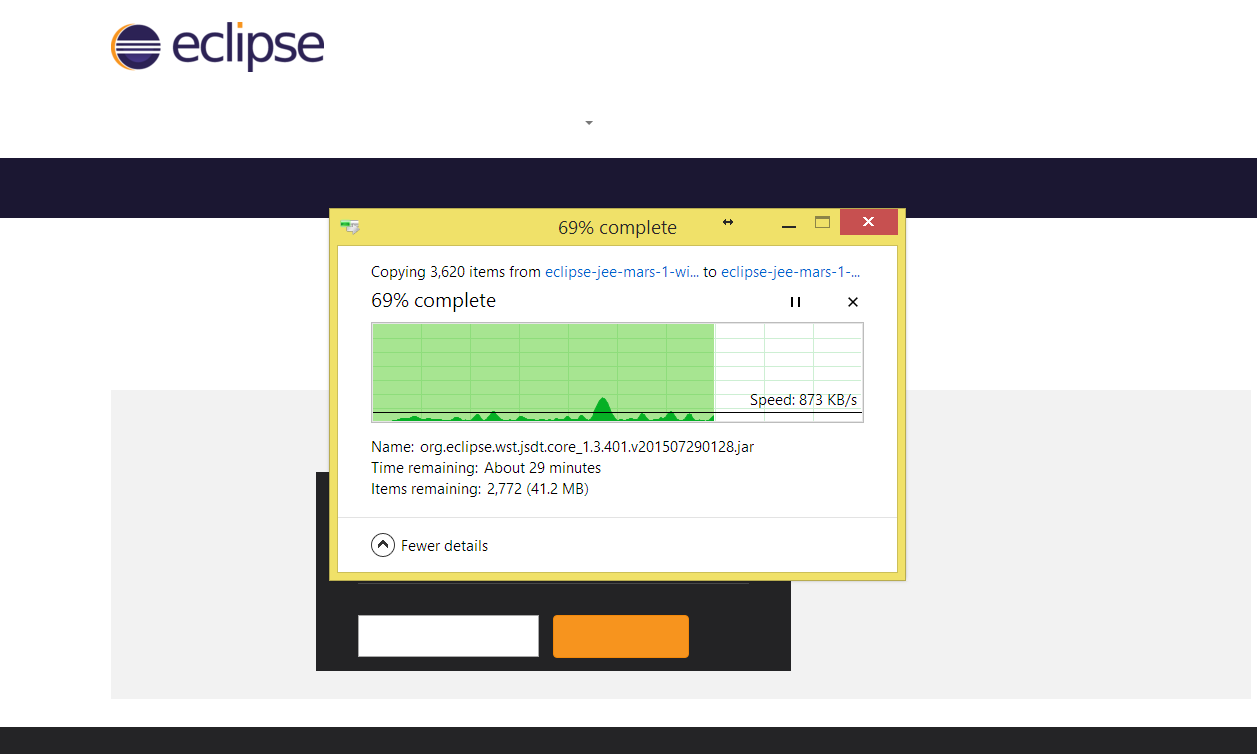
**How to install Eclipse**

To download Eclipse, goto <https://eclipse.org/downloads/>

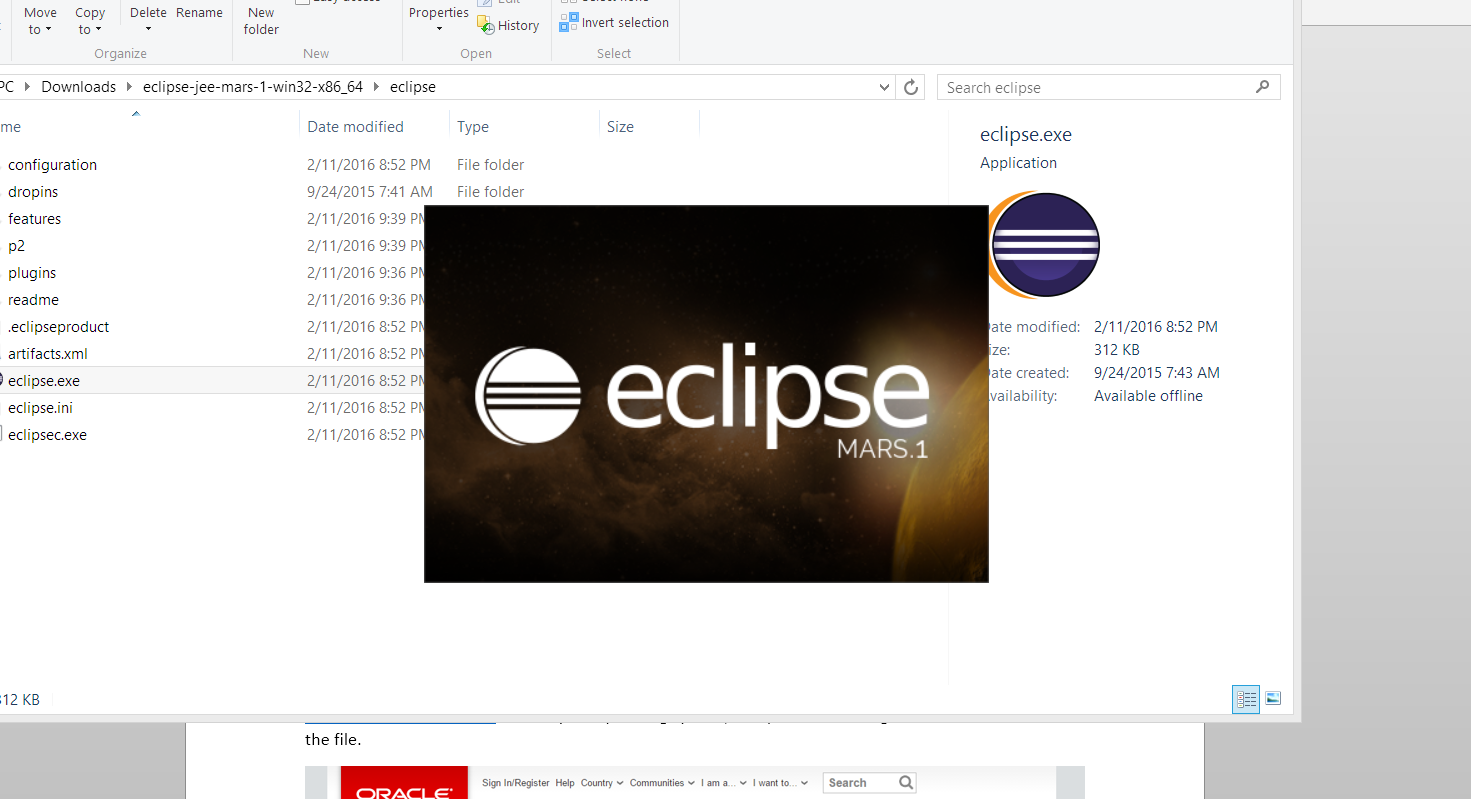
Choose you operating system and click Downlaod



Once the archive is downloaded, extract the containing files.

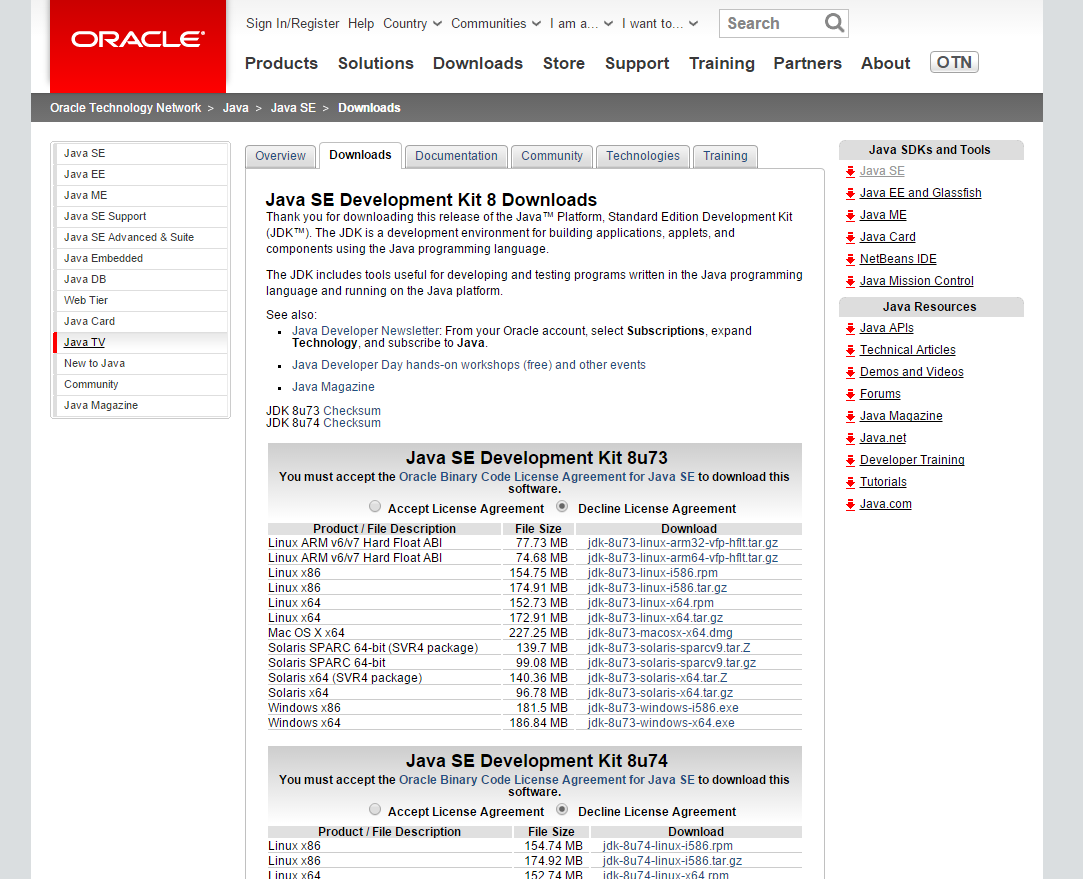


Once extraction is complete execute the eclipse.exe file to launch the program. Congrats you now have Eclipse.

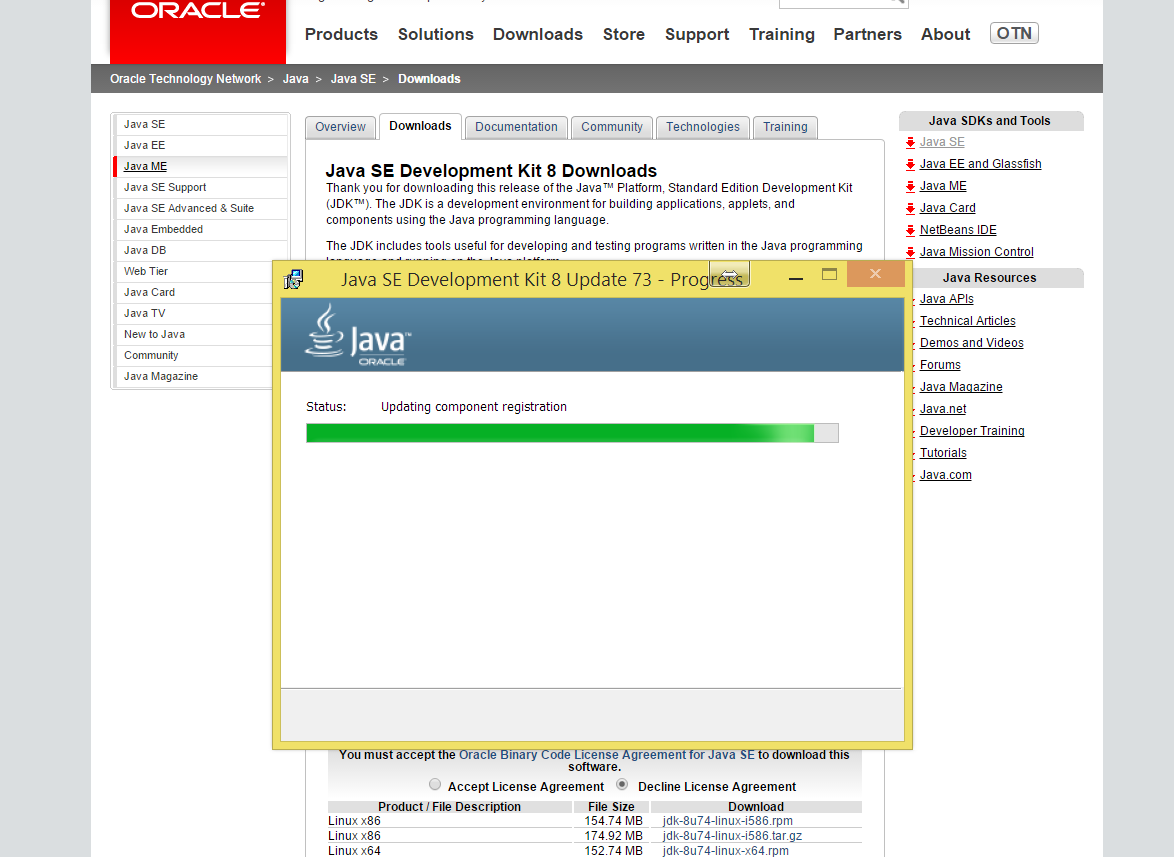


**How to install Java Development Kit (JDK)**

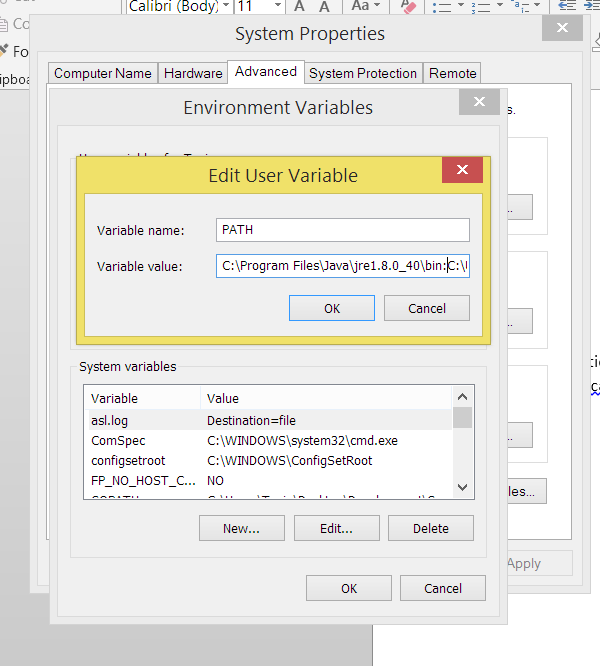
To download the JDK goto <http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html> choose your operating system, accept the license agreement and download the file.

****

Once downloaded, execute the executable file to install the JDK.

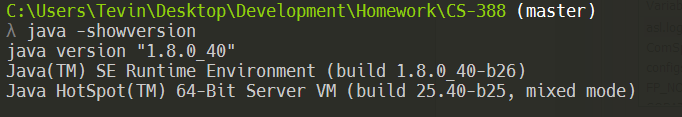


Once installation is complete find the install location and copy the location of the /bin directory. In my case it was located at C:\Program Files\Java\jre1.8.0\_40\bin. Once found open control panel and search system environment variable. Add the URL to your PATH variable.



Now can compile and execute Java programs. Open command prompt and run the command

*java –showversion*



3.a How GradeBookTest.java works, page 393

GradeBookTest.java in a small java program with a main method that creates an instance of a Gradebook object, then calls two methods, *displayMessage* and *determineClassAverage*.

3.b How Craps.java page, page 436

The program defines some common dice rolls and game status constants. The main method has variable keeping track of the points, game status, and the sum of the dice rolls. After the first roll the game determines if any terminal state has been reached depending on the sum of the roll. If a terminal state wasn’t reached the game continues and rolls the dice again. This procedure is reflective until a terminal state is reached. There is a *rollDice* method that sums up two random numbers from 1-6.

3.c How MathTest.java works, page 447

This class prints the out of executing the many static methods in the Math class. This includes the absolute value, ceiling and floor of a decimal number, cosine, sine, tangent, exponential, logarithmic, square root and the maximum and minimum of two numbers.

3.e How DeckOfCardsTest.java works, page 463

DeckOfCardsTest.java has a main method the creates an instance of a DeckOfCards. Thedeck is then shuffled. A loop is then created and loops 52 times each time, dealing one card and printing it’s value/identity in four columns.

3.f How EmployeeTest.java works, page 522

EmployeeTest.java instantiates two Employee objects and print the number of Employee object before and after the instantiation. It then prints out the first and last name of the two employees, then sets the references to those two objects to null.

3.g How PolymorphismTest.java works, page 556

PolymorphismTest.java illustrates the Polymorphism and dynamic binding capabilities of Java. A class CommissionEmployee is a base class of BasePlusCommissionEmployee. Assigning an instance of BasePlusCommissionEmployee to CommissionEmployee then calling the *toString* method on the CommissionEmployee object result in a call to *toString* method of the BasePlusCommissionEmployee class.