**Assignment No-2**

**Problem Statement:**

Project workstation selection, installations along with setup and installation report preparations.

**Theory:**

## 1. Eclipse

## **Eclipse** is an integrated development environment (IDE) used in computer programming, and is the most widely used Java IDE. It contains a base workspace and an extensible plug-in system for customizing the environment.

NetBeans IDE is the official IDE for Java 8. With its editors, code analyzers, and converters, you can quickly and smoothly upgrade your applications to use new Java 8 language constructs, such as lambdas, functional operations, and method references.tools (JDT) for Java and Scala, Eclipse CDT for C/C++, and Eclipse PDT for PHP, among others.

Batch analyzers and converters are provided to search through multiple applications at the same time, matching patterns for conversion to new Java 8 language constructs.

With its constantly improving Java Editor, many rich features and an extensive range of tools, templates and samples, NetBeans IDE sets the standard for developing with cutting edge technologies out of the box.

### Downloading Process:

1. Click Netbeans IDE 8.2  
   A page, with the label Netbeansdownloads, will be displayed in your browser.
2. In the first section, find the text DownloadNow: Netbeans IDE download all (221 MB)
3. Click the icon download under all.
4. It will redirect to another page which will show that Netbeans download started
5. Click the Save button to download, somewhere on your disk,
6. Terminate (X) any windows remaining from this process.

### Installing Process:

## Download the Eclipse Installer

## Start the Eclipse Installer executable

## Select the package to install

The new Eclipse Installer shows the packages available to Eclipse users. You can search for the package you want to install or scroll through the list.

Select and click on the package you want to install.

## Select your installation folder

## Launch Eclipse

**2. MongoDB:**

MongoDB is a free and open-source cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with schemas

**Installation Steps:**

1

### Import the public key used by the package management system.

The Ubuntu package management tools (i.e. dpkg and apt) ensure package consistency and authenticity by requiring that distributors sign packages with GPG keys. Issue the following command to import the [MongoDB public GPG Key](https://docs.mongodb.org/10gen-gpg-key.asc):

sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv 7F0CEB10

2

### Create a list file for MongoDB.

Create the /etc/apt/sources.list.d/mongodb-org-3.0.list list file using the command appropriate for your version of Ubuntu:

Ubuntu 12.04

echo "deb http://repo.mongodb.org/apt/ubuntu precise/mongodb-org/3.0 multiverse" | sudo tee /etc/apt/sources.list.d/mongodb-org-3.0.list

Ubuntu 14.04

echo "deb http://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.0 multiverse" | sudo tee /etc/apt/sources.list.d/mongodb-org-3.0.list

3

### Reload local package database.

Issue the following command to reload the local package database:

sudo apt-get update

4

### Install the MongoDB packages.

You can install either the latest stable version of MongoDB or a specific version of MongoDB.

#### Install the latest stable version of MongoDB.

Issue the following command:

sudo apt-get install -y mongodb-org

#### Install a specific release of MongoDB.

To install a specific release, you must specify each component package individually along with the version number, as in the following example:

sudo apt-get install -y mongodb-org=3.0.13 mongodb-org-server=3.0.13 mongodb-org-shell=3.0.13 mongodb-org-mongos=3.0.13 mongodb-org-tools=3.0.13

If you only install mongodb-org=3.0.13 and do not include the component packages, the latest version of each MongoDB package will be installed regardless of what version you specified.

#### Pin a specific version of MongoDB.

Although you can specify any available version of MongoDB, apt-get will upgrade the packages when a newer version becomes available. To prevent unintended upgrades, pin the package.

**3.RabbitMQ:**

RabbitMQ is lightweight and easy to deploy on premise and in the cloud. It supports multiple messaging protocols. RabbitMQ can be deployed in distributed and federated configurations to meet high-scale, high-availability requirements.

RabbitMQ runs on many operating systems and cloud environments, and provides a [wide range of developer tools for most popular languages](https://www.rabbitmq.com/devtools.html).

**Installation:**

Execute the following command to add the APT repository to your /etc/apt/sources.list.d:

echo 'deb http://www.rabbitmq.com/debian/ testing main' |

sudo tee /etc/apt/sources.list.d/rabbitmq.list

(Please note that the word testing in this line refers to the state of our release of RabbitMQ, not any particular Debian distribution. You can use it with Debian stable, testing or unstable, as well as with Ubuntu. We describe the release as "testing" to emphasise that we release somewhat frequently.)

1. (optional) To avoid warnings about unsigned packages, add our [public key](https://www.rabbitmq.com/rabbitmq-release-signing-key.asc) to your trusted key list using apt-key(8):

wget -O- https://www.rabbitmq.com/rabbitmq-release-signing-key.asc |

sudo apt-key add -

Our public signing key is also [available from Bintray](https://bintray.com/rabbitmq/Keys/download_file?file_path=rabbitmq-release-signing-key.asc).

1. Run the following command to update the package list:

sudo apt-get update

1. Install rabbitmq-server package:

sudo apt-get install rabbitmq-server

**4.Elasticsearch:**

Elasticsearch is a distributed, RESTful search and analytics engine capable of solving a growing number of use cases. As the heart of the Elastic Stack, it centrally stores your data so you can discover the expected and uncover the unexpected.

**Installation:**

1.At the time of this writing, the latest Elasticsearch version is 1.7.2. Download it in a directory of your choosing with the command:

wget https://download.elastic.co/elasticsearch/elasticsearch/elasticsearch-1.7.2.deb

2.Then install it in the usual Ubuntu way with the dpkg command like this:

sudo dpkg -i elasticsearch-1.7.2.deb

3.To start editing the main elasticsearch.yml configuration file:

sudo nano /etc/elasticsearch/elasticsearch.yml

**5.Apache Spark:**

**Apache Spark** is an [open-source](https://en.wikipedia.org/wiki/Open-source_software) [cluster-computing](https://en.wikipedia.org/wiki/Distributed_computing) [framework](https://en.wikipedia.org/wiki/Software_framework). Originally developed at the [University of California, Berkeley](https://en.wikipedia.org/wiki/UC_Berkeley)'s [AMPLab](https://en.wikipedia.org/wiki/AMPLab), the Spark [codebase](https://en.wikipedia.org/wiki/Codebase) was later donated to the [Apache Software Foundation](https://en.wikipedia.org/wiki/Apache_Software_Foundation), which has maintained it since. Spark provides an [interface](https://en.wikipedia.org/wiki/Application_programming_interface) for programming entire clusters with implicit [data parallelism](https://en.wikipedia.org/wiki/Data_parallelism) and [fault-tolerance](https://en.wikipedia.org/wiki/Fault-tolerant_computing).

**Installation:**

### 1.Extracting Spark tar

The following command for extracting the spark tar file.

$ tar xvf spark-1.3.1-bin-hadoop2.6.tgz

### 2.Moving Spark software files

The following commands for moving the Spark software files to respective directory (/usr/local/spark).

$ su –

Password:

# cd /home/Hadoop/Downloads/

# mv spark-1.3.1-bin-hadoop2.6 /usr/local/spark

# exit

### 3.Setting up the environment for Spark

Add the following line to ~/.bashrc file. It means adding the location, where the spark software file are located to the PATH variable.

export PATH = $PATH:/usr/local/spark/bin

4.Use the following command for sourcing the ~/.bashrc file.

$ source ~/.bashrc

## 5.: Verifying the Spark Installation

Write the following command for opening Spark shell.

$spark-shell

**6.Latex:**

LaTeX is a high-quality typesetting system; it includes features designed for the production of technical and scientific documentation. LaTeX is the de facto standard for the communication and publication of scientific documents. LaTeX is available as free software**.** Latexis a document preparation system. When writing, the writer uses [plain text](https://en.wikipedia.org/wiki/Plain_text) as opposed to the [formatted text](https://en.wikipedia.org/wiki/Formatted_text) found in word processors like [Microsoft Word](https://en.wikipedia.org/wiki/Microsoft_Word) or [LibreOffice Writer](https://en.wikipedia.org/wiki/LibreOffice_Writer). The writer uses [markup](https://en.wikipedia.org/wiki/Markup_language) tagging conventions to define the general structure of a document (such as article, book, and letter), to stylise text throughout a document (such as bold and italics), and to add [citations](https://en.wikipedia.org/wiki/Citation) and [cross-references](https://en.wikipedia.org/wiki/Cross-reference). A [TeX](https://en.wikipedia.org/wiki/TeX) distribution such as [TeX Live](https://en.wikipedia.org/wiki/TeX_Live) or [MikTeX](https://en.wikipedia.org/wiki/MikTeX) is used to produce an output file (such as [PDF](https://en.wikipedia.org/wiki/Portable_Document_Format) or [DVI](https://en.wikipedia.org/wiki/Device_independent_file_format)) suitable for printing or [digital distribution](https://en.wikipedia.org/wiki/Digital_distribution). Within the typesetting system, its name is stylised as LaTeX. LaTeX is widely used in [academia](https://en.wikipedia.org/wiki/Academia) for the communication and publication of scientific documents in many fields, including mathematics, statistics, computer science, engineering, chemistry, physics, economics, quantitative psychology, philosophy, and political science.

**Installation Steps:**

* Install TexMaker
* Set the PATH variable
* Install packages in TexMaker
* Install TexWorks

**Conclusion:**

Thus we have successfully selected project workstation and installed it along with setup and installed report preparations software.