DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

CHANDIGARH UNIVERSITY
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Experiment 1.1

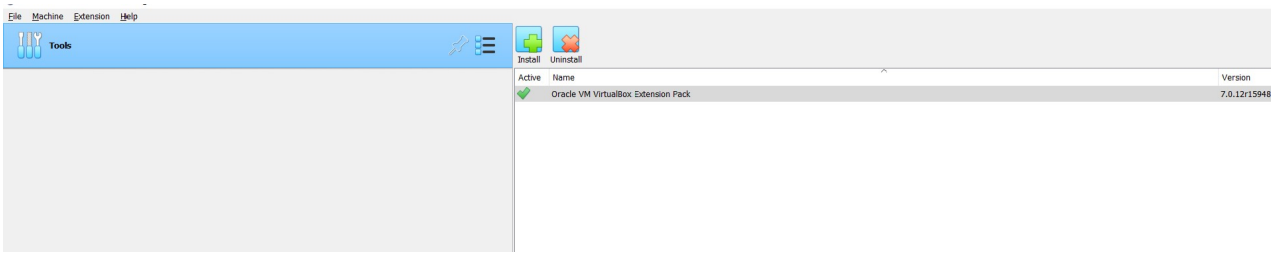
Student Name: Debdulal Das **UID: 21BCS9011**
Branch: BE-CSE **Section/Group: 21BCS_CC-646-A**
Semester: 6
Date of Performance: 16 January 2024
Subject Name: Cloud Computing and Distributed Systems Lab
Subject Code: 21CSP-378

1. **Aim:** Install VirtualBox or VMware Workstation on a Windows 7 or 8 operating system and set up various flavors of Linux or Windows as virtual machines

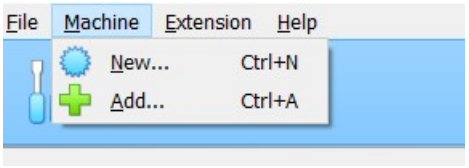
2. **Objective:** To install and configure virtualization software, specifically VirtualBox or VMware Workstation, on a Windows 7 or 8 operating system.

3. **Script and Output:**
   a. Download VirtualBox. Visit the official VirtualBox website at https://www.virtualbox.org/. Download installer for Windows.
   b. Run the installer and follow the on-screen instructions to install VirtualBox.
   c. During installation, allow the installation of additional network interfaces, so make sure to accept any prompts.

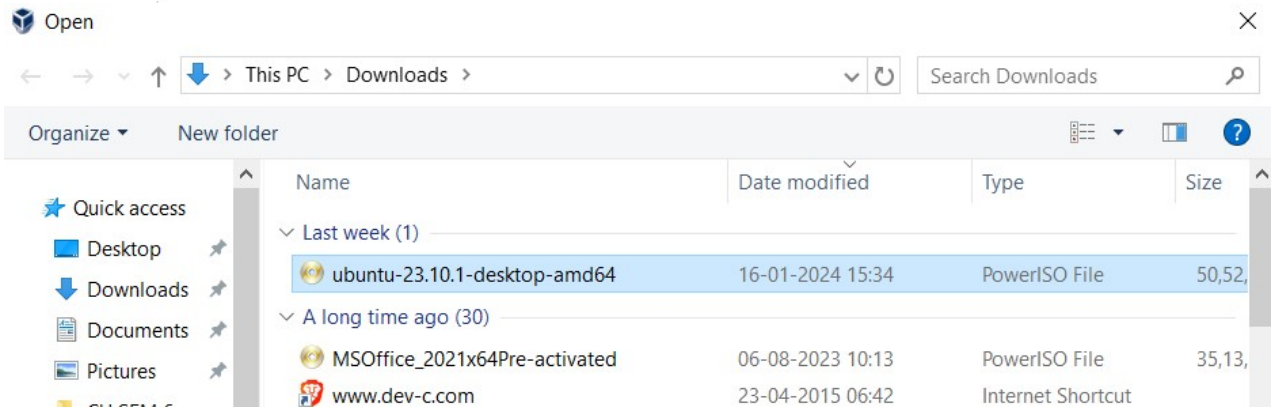
d. Open virtual box



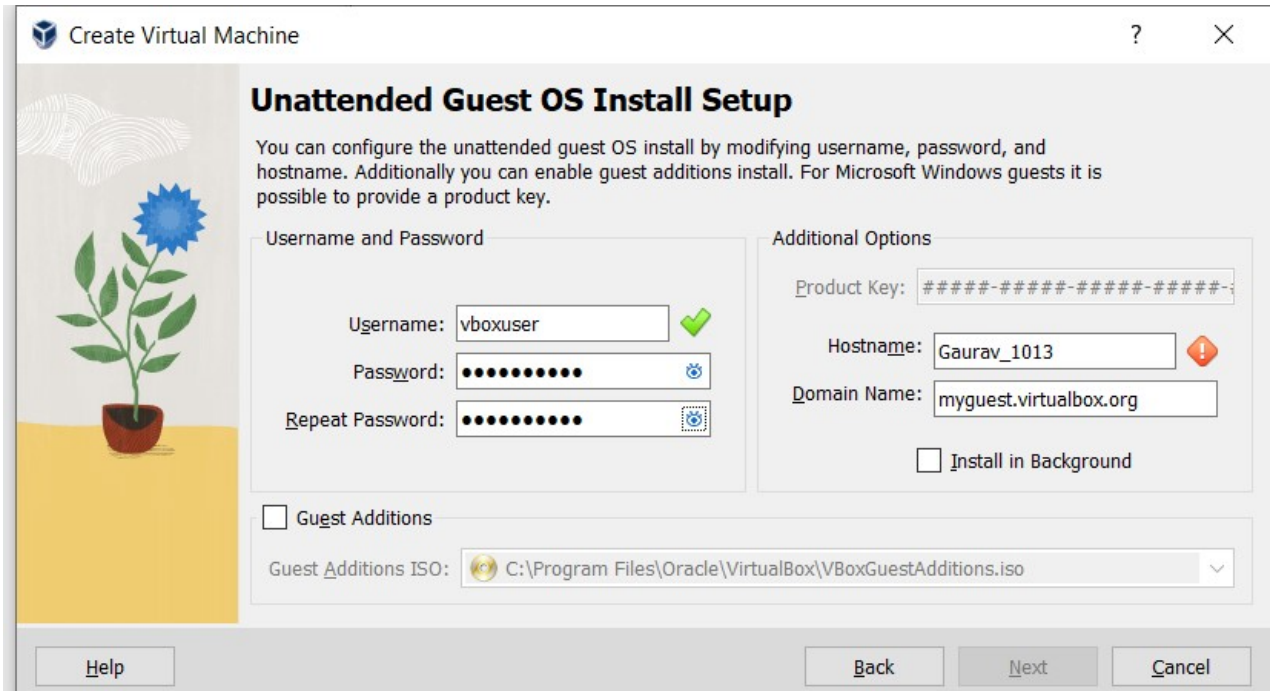
e. Click on Machine option present on the header and select New.



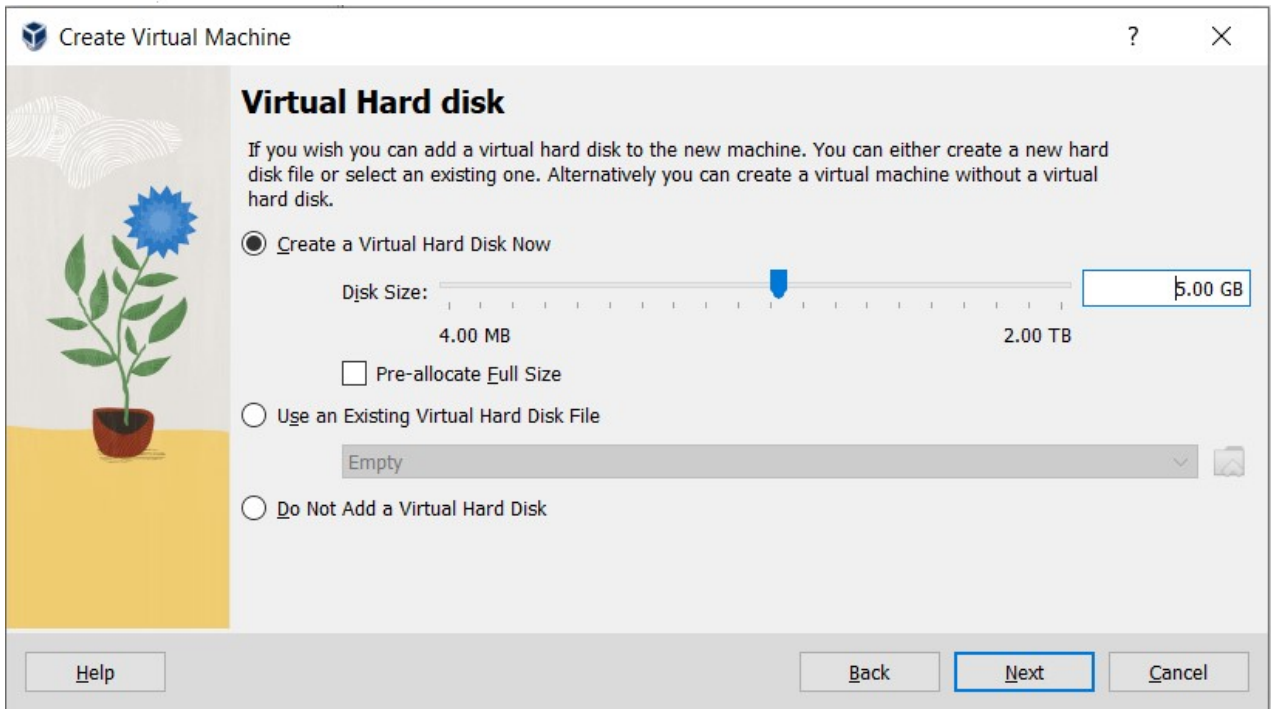
f. Name the virtual machine as per your need and select the ISO image.



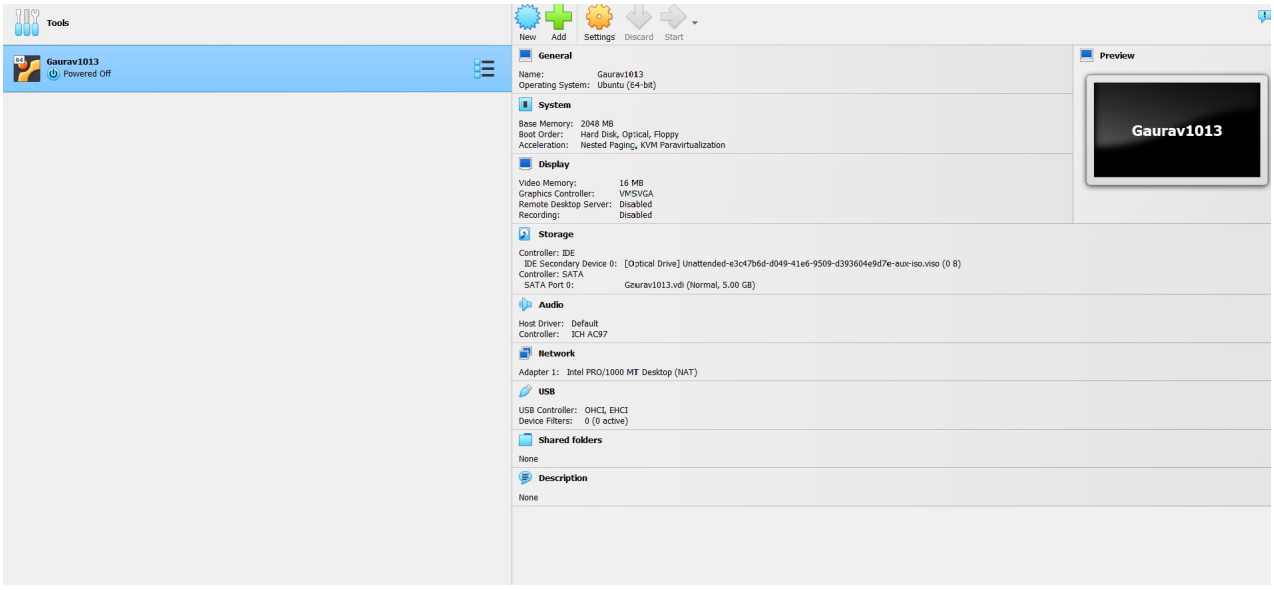
g. After selecting the ubuntu software as a ISO image click on next. Fill the id password as per your need



h. Allocate the Memory according to the user.



i. Your Virtual Machine is set and ready to go.



4. Learning Outcome :

a. Gain exposure to different operating systems
b. Develop basic troubleshooting skills by overcoming potential challenges during the installation and execution process
c. Gain knowledge about virtualization concepts and the ability to create virtual machines using VirtualBox
d. Understand the process of setting up a development environment

UNIVERSITY INSTITUTE OF ENGINEERING

Department of Computer Science & Engineering

(BE-CSE/IT-6th Sem)

Subject Name: Cloud Computing and Distributed Systems Lab

Subject Code: 21CSP-378

Submitted to:

Babita Sharma

Submitted by:

Name: Debdulal Das

UID: 21BCS9011

Section: 21BCS_CC-646

Group: A

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Name: Debdulal Das **UID: 21BCS9011**

Ex. No	Name of Experiments	Date	Conduct (MM: 12)	Viva (MM: 10)	Worksheet (Record) (MM: 8)	Total (MM: 30)	Remarks	Signature (with date)
1	Install VirtualBox or VMware Workstation on a Windows 7 or 8 operating system and set up various flavors of Linux or Windows as virtual machines.							
2	To install a C compiler within the virtual machine established using VirtualBox and run basic programs.							
3	Installation of Cloud Sim tool and IDE.							
4	Use of GAE launcher to launch the web applications.							
5	Simulate a cloud scenario using Matlab and run a scheduling algorithm.							
6	To find a procedure to transfer the files from one virtual machine to another virtual machine.							
7	Discover a method for initiating a virtual machine using the TryStack (Online OpenStack Demo Version).							
8	Install Hadoop single node cluster and run simple applications like word count.							
9	Case Studies on Cloud based machine-learning solutions in healthcare.							
10	Lab based Mini Project							

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Experiment 1.3

Student Name: Debdulal Das **UID: 21BCS9011**
Branch: BE-CSE **Section/Group: CC-646-A**
Semester: 6th **Subject Code: 21CSP-378**
Subject Name: Cloud Computing and Distributed Systems Lab
Date - 30 January 2023

1. Aim: Installation of Cloud Sim tool and IDE

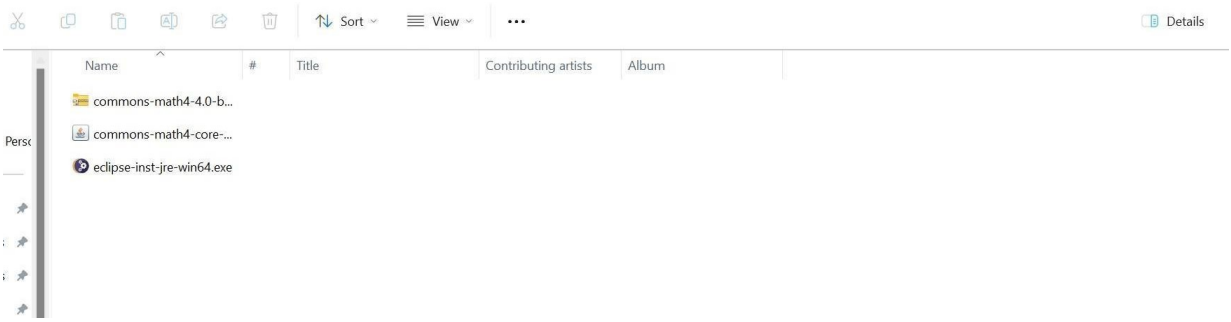
2. Objective: To install cloud sim tool , IDE and simulate core functionality of cloud

3. Procedure:

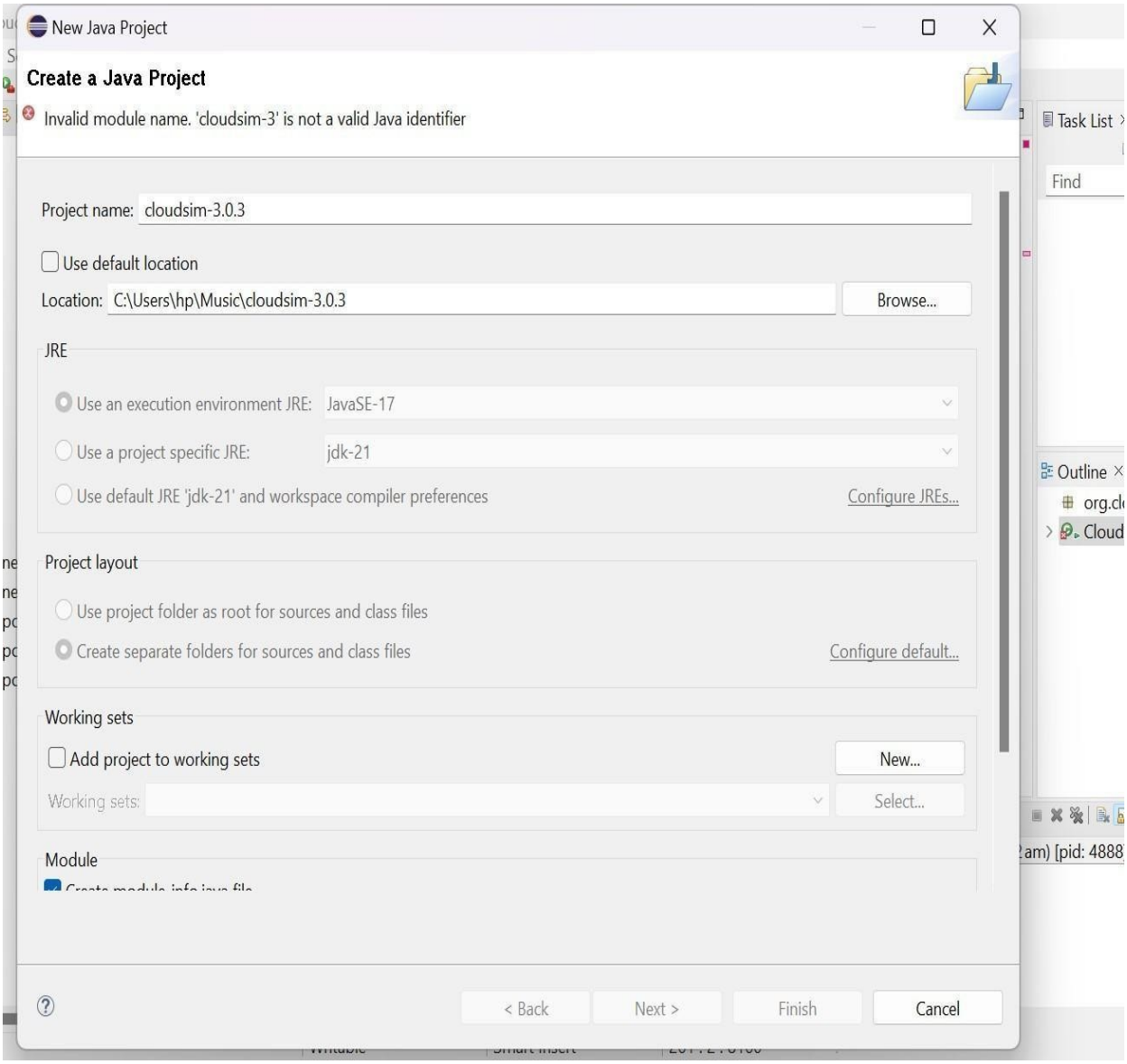
Step 1: Install Eclipse IDE for java developers:

Step 2: Download Cloud Sim source Code.

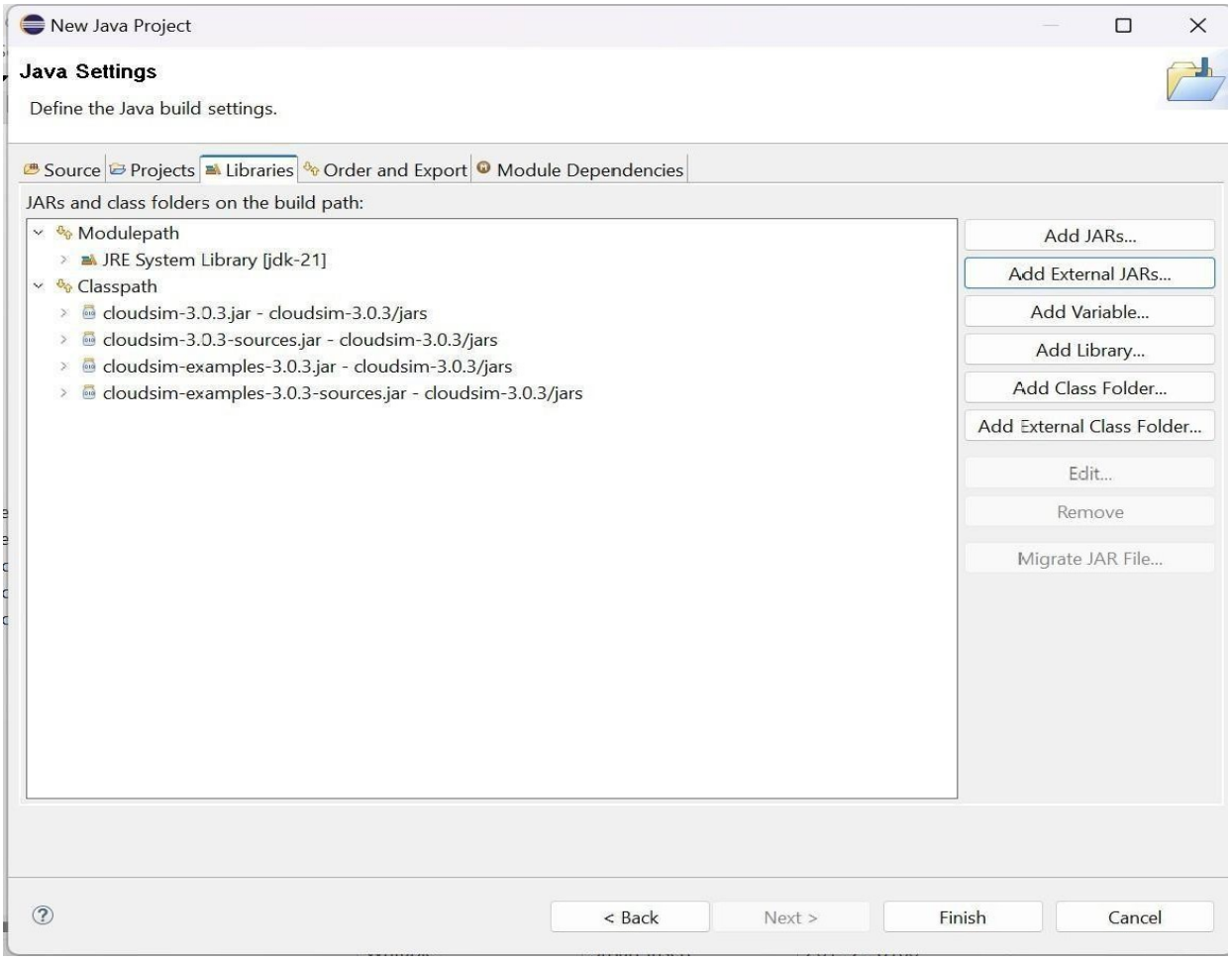
Step 3: Download the Common math package from apache website.



Step 4: Open Eclipse IDE, Create a new java project and add path of Cloud sim Source code.

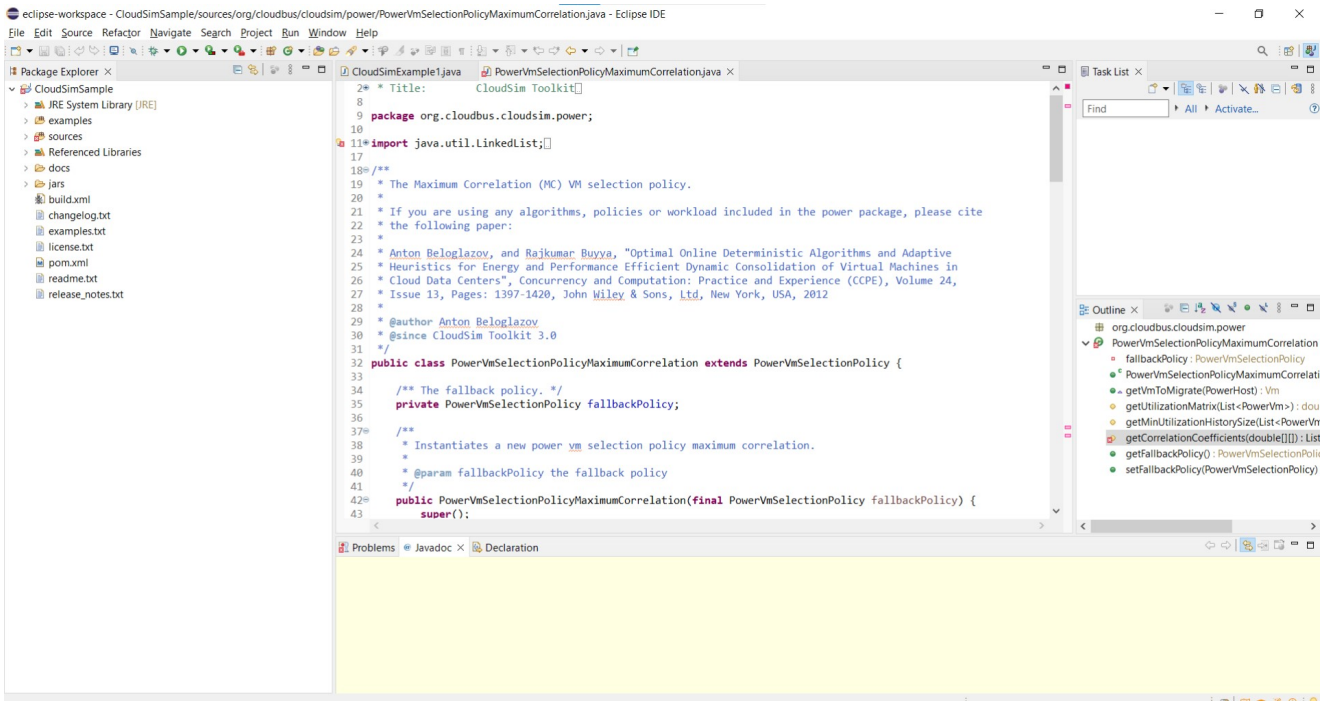


Step 5: Click on Next, then go to libraries , Add external JARs and add the JAR file from the common math package downloaded from apache website and then click on finish.



Step 6: After configuring the new Project, Go to file and open a new java executable file , Write the source code for the application and run the application.

Output:


eclipse-workspace - CloudSimSample/sources/org/cloudbus/cloudsim/power/PowerVmSelectionPolicyMaximumCorrelation.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
CloudSimSample
JRE System Library [JRE]
examples
sources
Referenced Libraries
docs
jars
build.xml
changelog.txt
examples.txt
license.txt
pom.xml
readme.txt
release_notes.txt
CloudSimExample1.java
PowerVmSelectionPolicyMaximumCorrelation.java
* Title: CloudSim Toolkit
package org.cloudbus.cloudsim.power;
import java.util.LinkedList;
/**
* The Maximum Correlation (MC) VM selection policy.
*
* If you are using any algorithms, policies or workload included in the power package, please cite
* the following paper:
*
* Anton Beloglazov, and Rajkumar Buyya, "Optimal Online Deterministic Algorithms and Adaptive
* Heuristics for Energy and Performance Efficient Dynamic Consolidation of Virtual Machines in
* Cloud Data Centers", Concurrency and Computation: Practice and Experience (CCPE), Volume 24,
* Issue 13, Pages: 1397-1420, John Wiley & Sons, Ltd, New York, USA, 2012
*
* @author Anton Beloglazov
* @since CloudSim Toolkit 3.0
*/
public class PowerVmSelectionPolicyMaximumCorrelation extends PowerVmSelectionPolicy {
/** The fallback policy. */
private PowerVmSelectionPolicy fallbackPolicy;
/**
* Instantiates a new power vm selection policy maximum correlation.
*
* @param fallbackPolicy the fallback policy
*/
public PowerVmSelectionPolicyMaximumCorrelation(final PowerVmSelectionPolicy fallbackPolicy) {
super();
Task List
Find
All
Activate...
Outline
org.cloudbus.cloudsim.power
PowerVmSelectionPolicyMaximumCorrelation
fallbackPolicy : PowerVmSelectionPolicy
PowerVmSelectionPolicyMaximumCorrelati
getVmToMigrate(PowerHost) : Vm
getUtilizationMatrix(List<PowerVm>) : dou
getMinUtilizationHistorySize(List<PowerVm
getCorrelationCoefficients(double[][]) : List
getFallbackPolicy() : PowerVmSelectionPoli
setFallbackPolicy(PowerVmSelectionPolicy)
Problems
Javadoc
Declaration

4. Learning Outcomes:

i). Learned how to install and use Eclipse IDE ii). Learned how to install Cloud sim IDE and how to use it with eclipse. iii). Learned how to simulate in Eclipse using cloud sim IDE.