

Ex.No:12**SIMULATION OF CLOUD SCENARIOS USING
CLOUDSIM****Date:****AIM:**

To implement the simulation of cloud scenario using cloudsim.

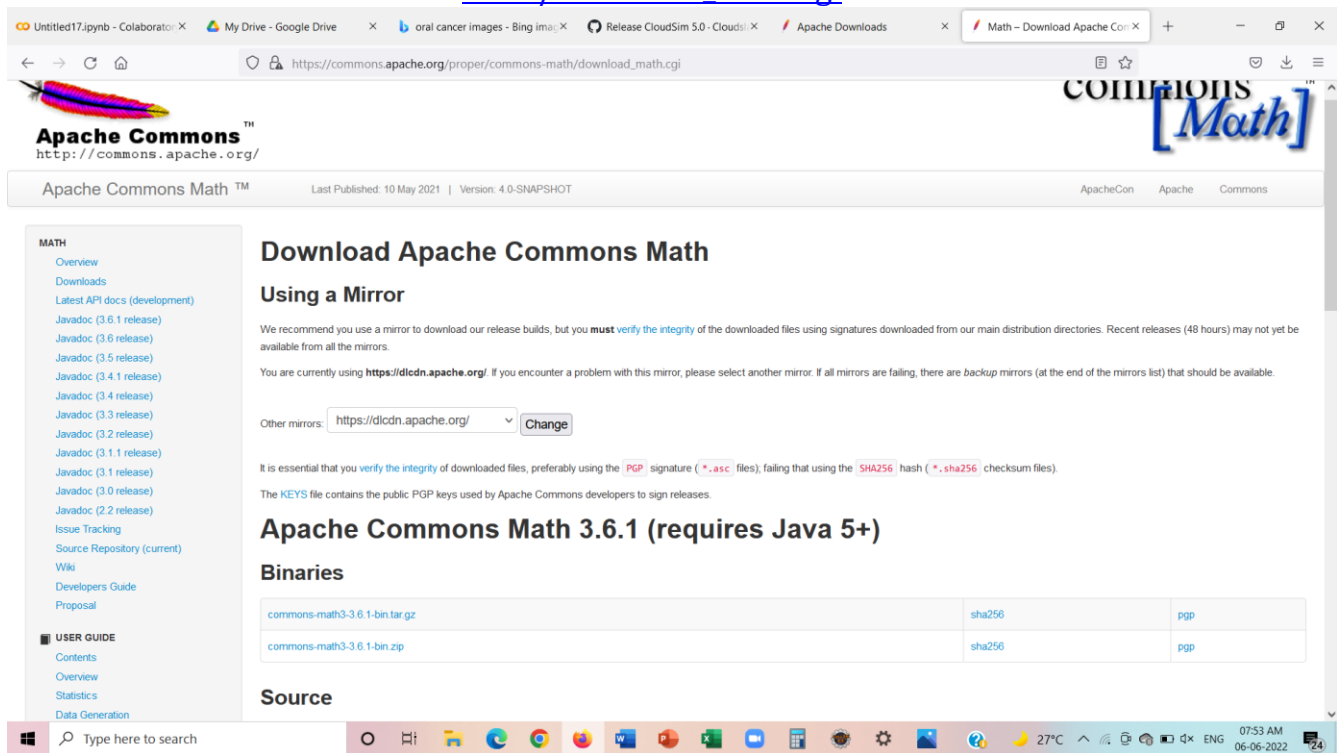
PROCEDURE:

1. Download Cloudsim5.0 from
<https://github.com/Cloudslab/cloudsim/releases/tag/5.0>

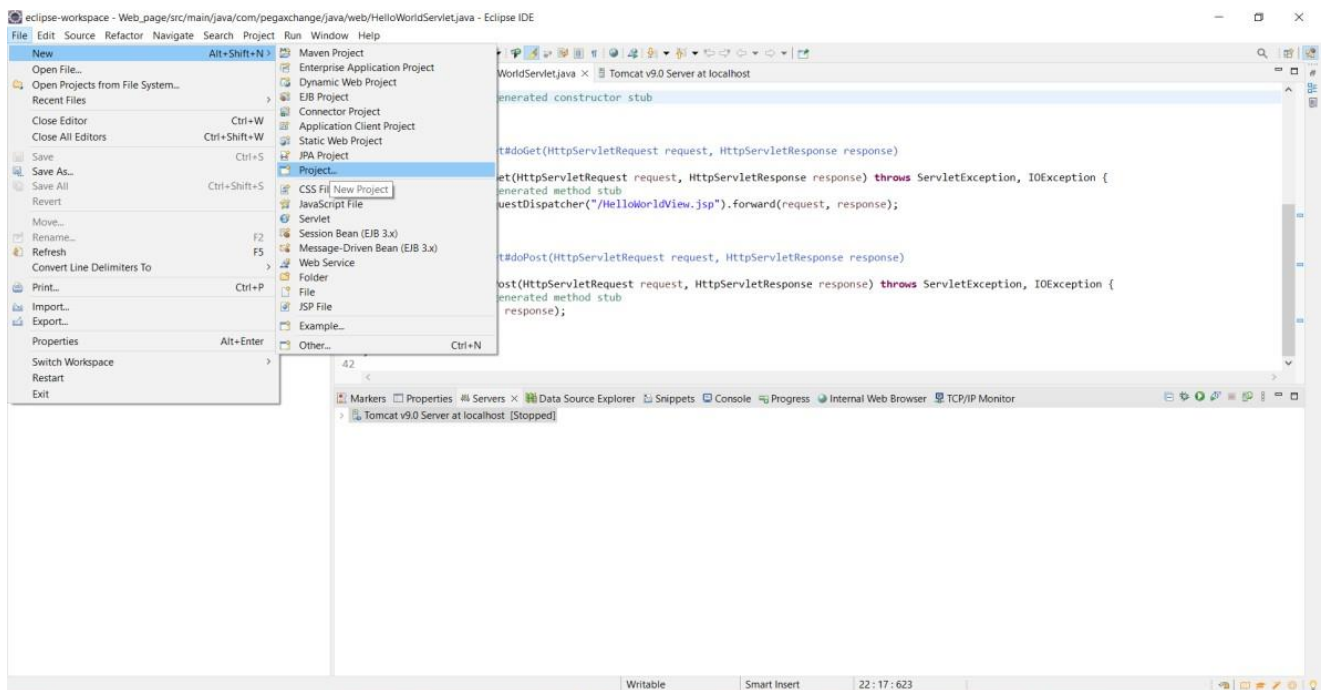
The screenshot shows a web browser window displaying the GitHub release page for CloudSim 5.0. The browser's address bar shows the URL <https://github.com/Cloudslab/cloudsim/releases/tag/5.0>. The page header includes the GitHub logo, navigation links (Product, Team, Enterprise, Explore, Marketplace, Pricing), a search bar, and buttons for Sign in and Sign up. Below the header, the repository name 'Cloudslab / cloudsim' is shown with a 'Public' label. The release page for 'CloudSim 5.0' is displayed, marked as 'Pre-release'. It shows that 'skardani' released this version on 07 Jun 2019, with 13 commits to dev since this release. The description states: 'Cloudsim 5.0 toolkit combines various releases including containers, VM extensions with performance monitoring features and modelling of Web applications on multi-clouds. This will also work with other simulation models such as Software-defined Networks (SDN) / Service Function Chaining (SFC)'. Under the 'Assets' section, two source code files are listed: 'Source code (zip)' and 'Source code (tar.gz)', both dated 05 Jun 2019. The page also shows 6 thumbs up, 1 thumbs down, 7 reactions, and 17 people reacted. The Windows taskbar at the bottom shows the search bar, task view button, and several application icons, along with the system clock showing 09:37 PM on 05-06-2022.

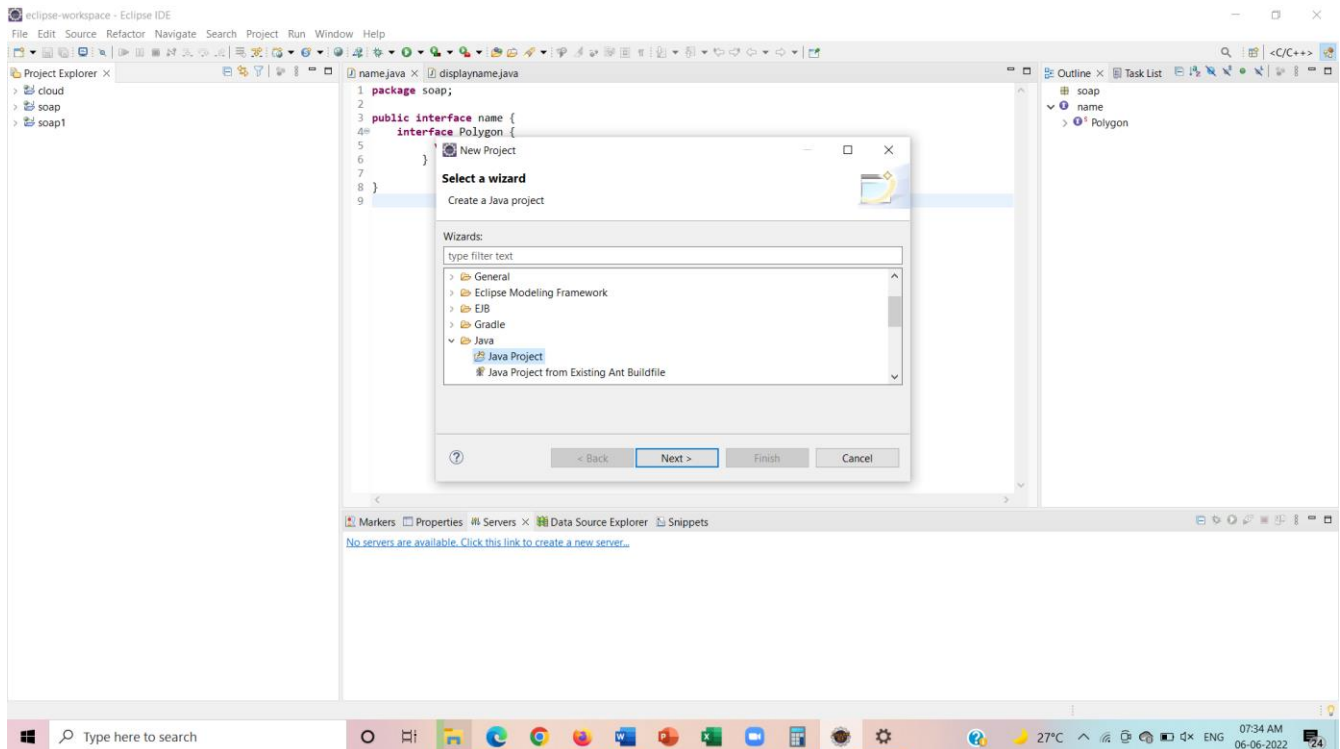
2. Add common math library

https://commons.apache.org/proper/commons-math/download_math.cgi

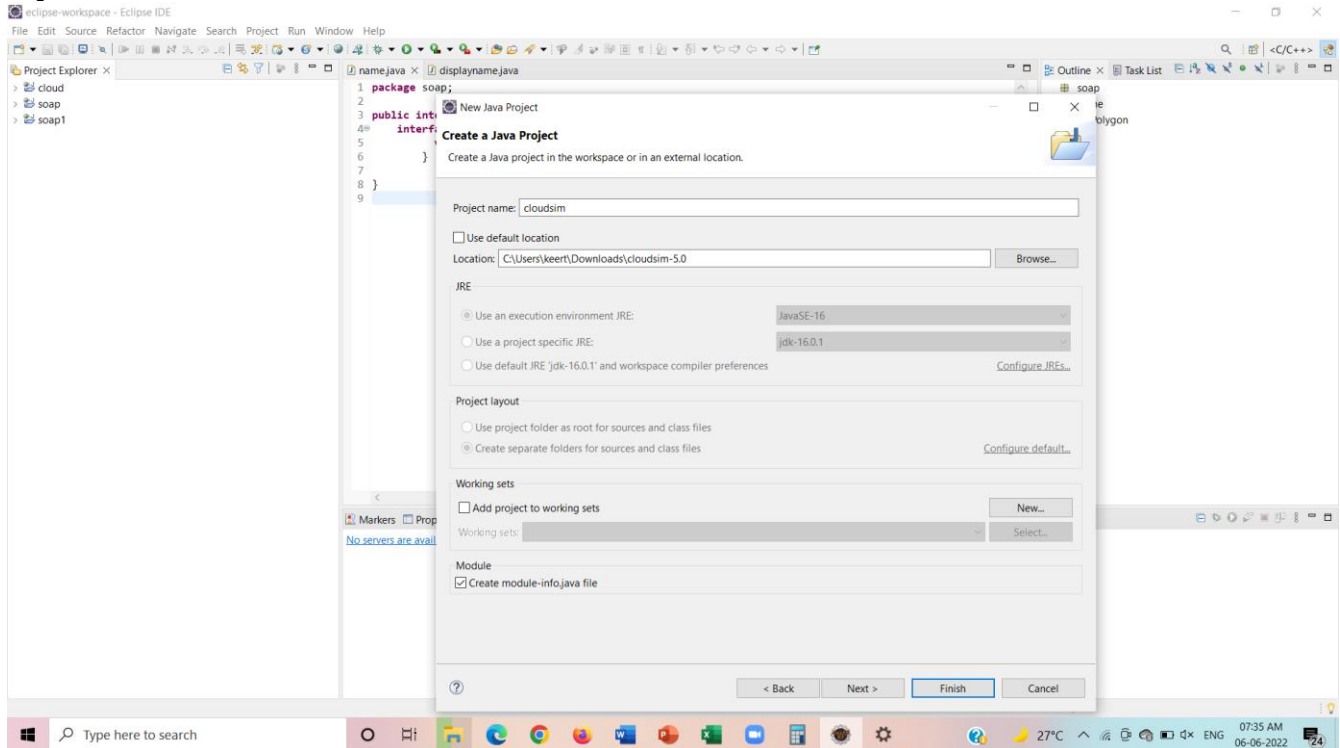


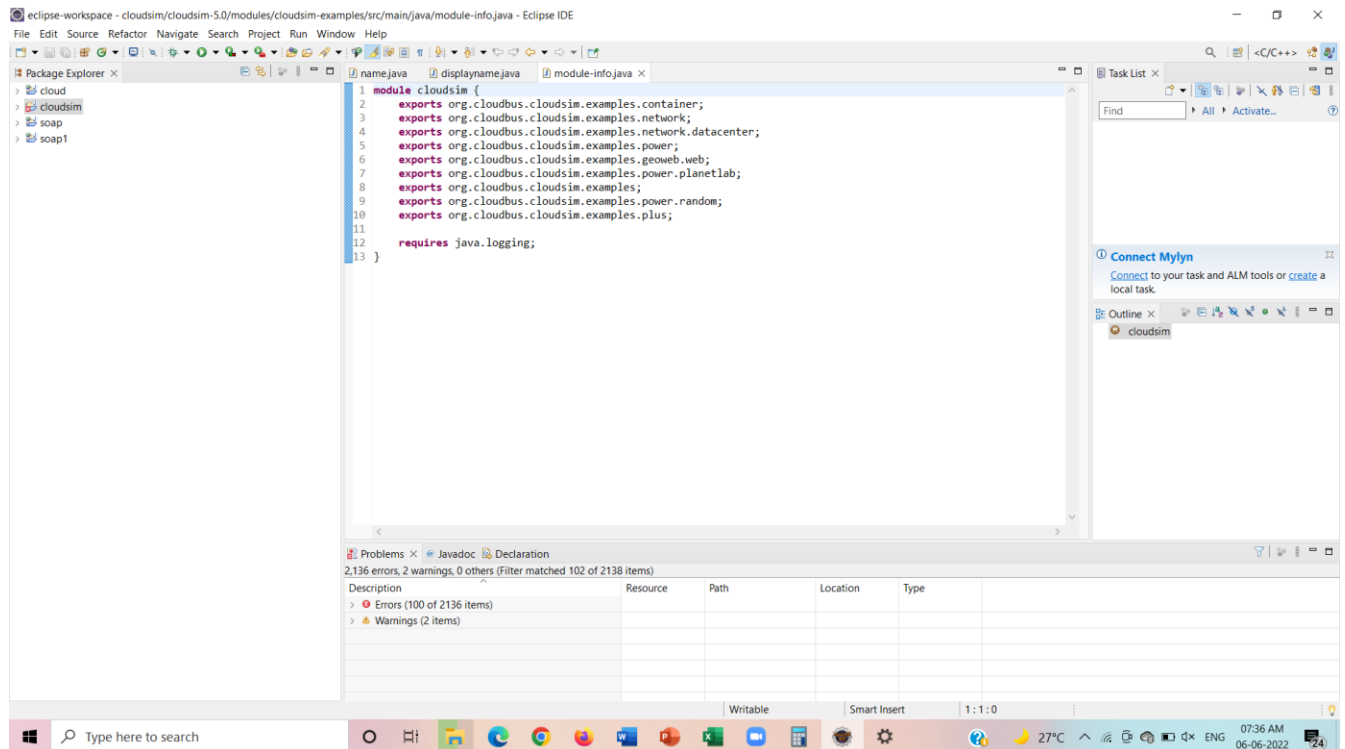
3. OpenEclipse.SelectNew>Project>JavaProject



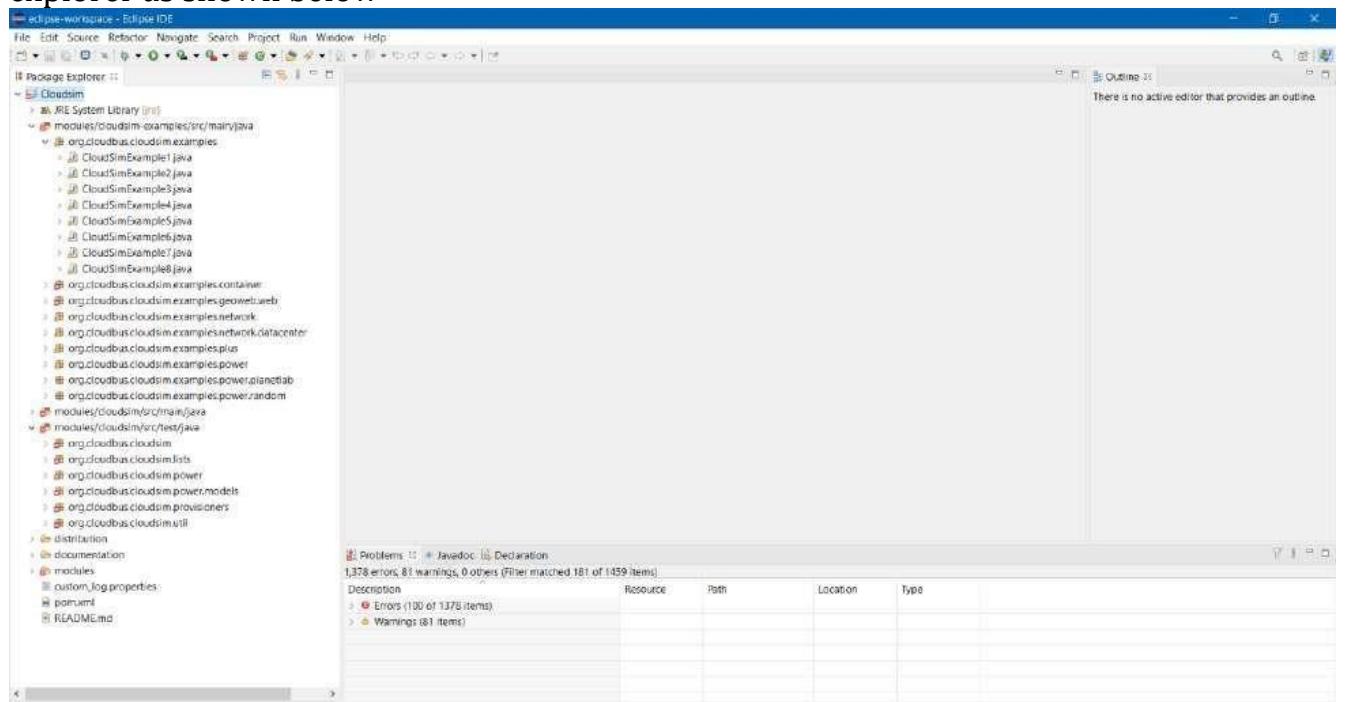


4. The project is named as Cloudsim and the location of the downloaded folder is specified.

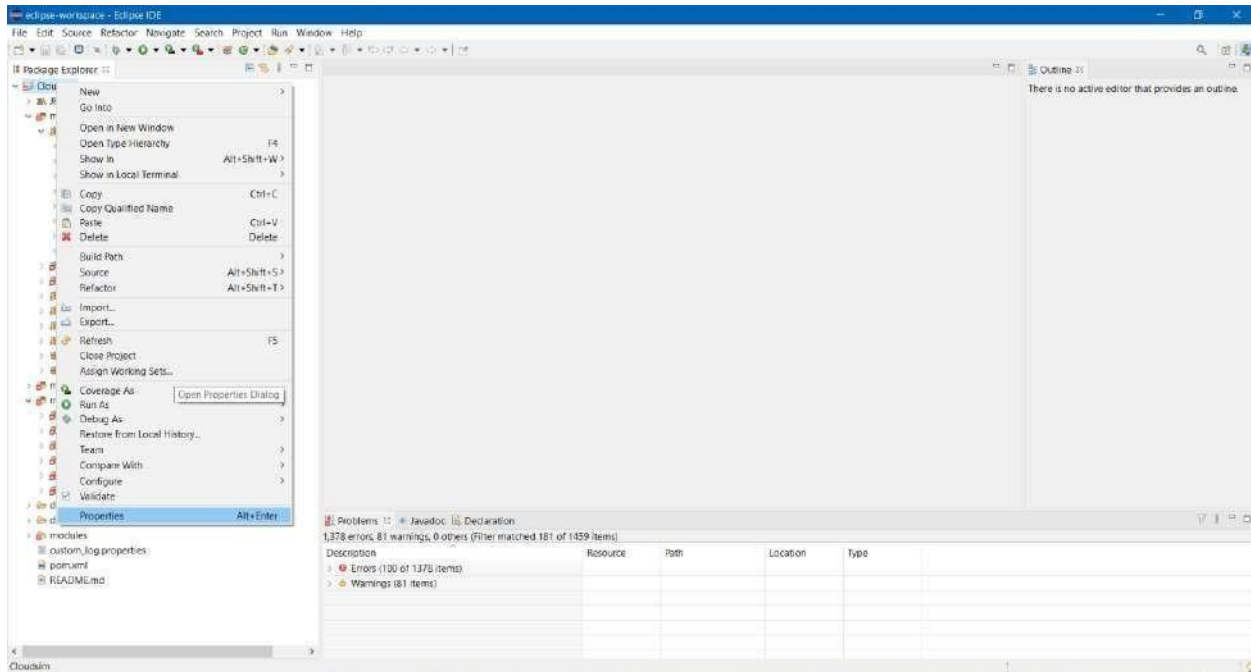




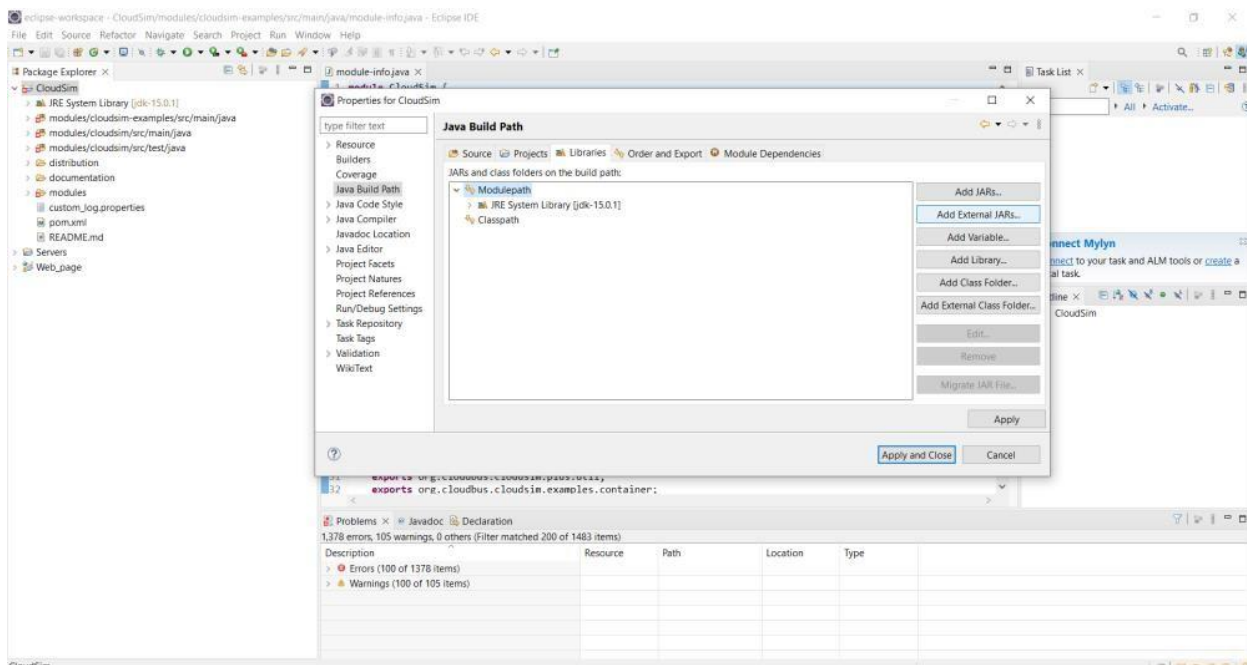
Once you click finish , the cloudsim project becomes view able in your package explorer as shown below

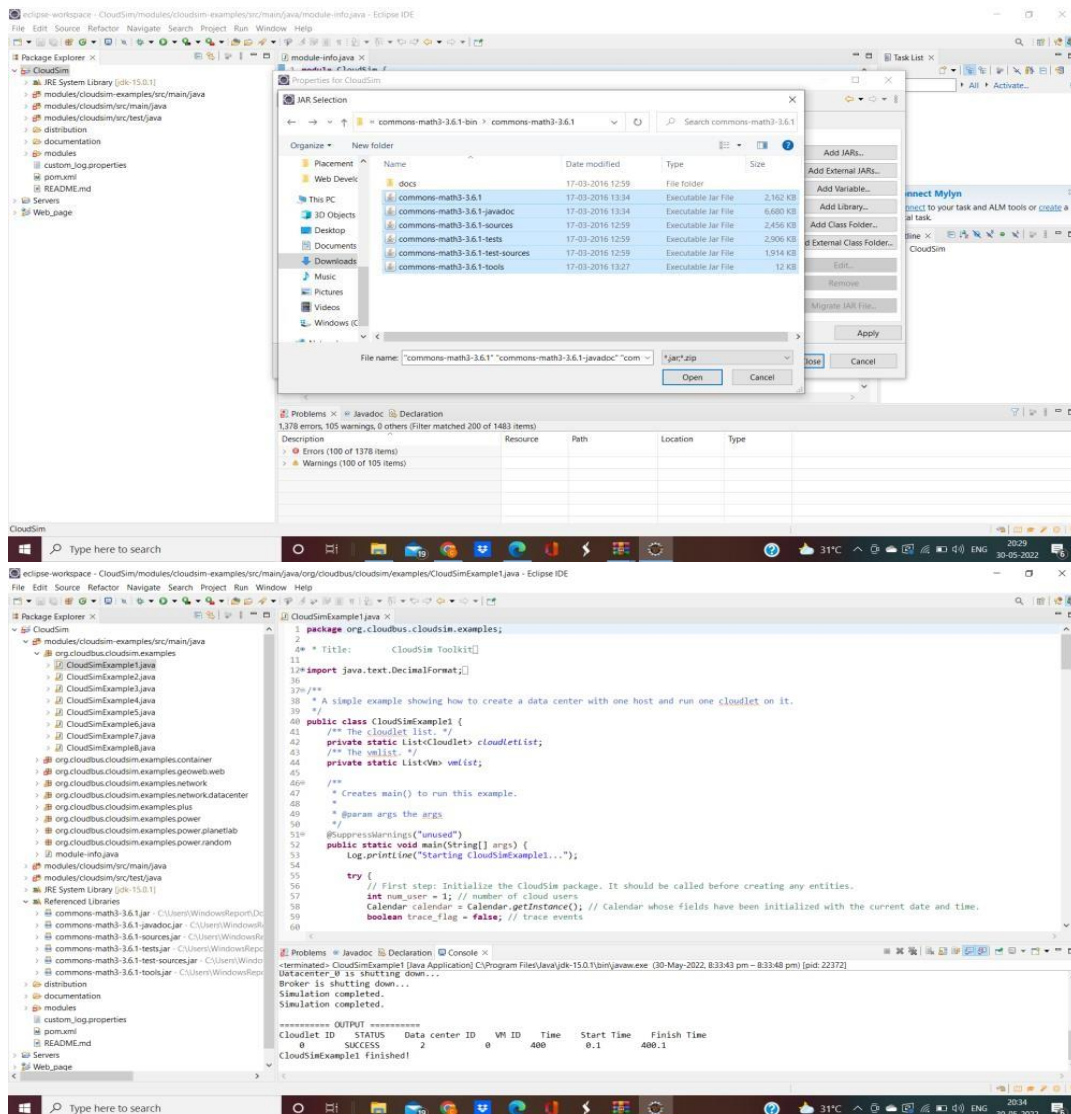


5. Click the created java project “Cloudsim” and select the properties.



6. Click Java Build Path and select Module path and add external JARs





Hence, the installation is completed.

To simulate the cloud services, the Cloudsim Example codes are executed.

Cloudsim example 6:

An example showing how to create scalable simulations. It means varying numbers of cloudlets as well as varying numbers of VMs.

Description:

- Create VM, datacenters, cloudlets by its respective methods.
- To create power datacenter we need to create a list to store one or more machines. A machine contains one or more PEs or CPUs/Cores. Therefore, should create a list to store these PEs before creating a machine.
- Create hosts with its id and list of PEs and add them to the list of machines.
- Create a DatacenterCharacteristics object that stores the properties of a data center: architecture, OS, list of Machines, allocation policy: time- or space-shared, time zone and its price.

Finally prints the Cloudlet objects

The screenshot shows the Eclipse IDE with the CloudSim Toolkit.java file open. The console output displays the following messages:

```

<terminated> CloudSimExample6 [Java Application] C:\Program Files\Java\jdk-15.0.1\bin\javaw.exe (30-May-2022, 8:34:50 pm - 8:34:53 pm) [pid: 14692]
Starting CloudSimExample6...
Initialising...
Starting CloudSim version 3.0
Datacenter_0 is starting...
Datacenter_1 is starting...
Broker is starting...
Entities started.
0.0: Broker: Cloud Resource List received with 2 resource(s)
0.0: Broker: Trying to Create VM #0 in Datacenter_0
0.0: Broker: Trying to Create VM #1 in Datacenter_0
0.0: Broker: Trying to Create VM #2 in Datacenter_0
0.0: Broker: Trying to Create VM #3 in Datacenter_0
0.0: Broker: Trying to Create VM #4 in Datacenter_0
0.0: Broker: Trying to Create VM #5 in Datacenter_0
0.0: Broker: Trying to Create VM #6 in Datacenter_0
0.0: Broker: Trying to Create VM #7 in Datacenter_0
0.0: Broker: Trying to Create VM #8 in Datacenter_0
0.0: Broker: Trying to Create VM #9 in Datacenter_0
0.0: Broker: Trying to Create VM #10 in Datacenter_0
0.0: Broker: Trying to Create VM #11 in Datacenter_0
0.0: Broker: Trying to Create VM #12 in Datacenter_0
0.0: Broker: Trying to Create VM #13 in Datacenter_0
0.0: Broker: Trying to Create VM #14 in Datacenter_0
0.0: Broker: Trying to Create VM #15 in Datacenter_0
0.0: Broker: Trying to Create VM #16 in Datacenter_0
0.0: Broker: Trying to Create VM #17 in Datacenter_0
0.0: Broker: Trying to Create VM #18 in Datacenter_0
0.0: Broker: Trying to Create VM #19 in Datacenter_0
[Webscheduler.vmlcreate] Allocation of VM #6 to Host #0 failed by RAM
[Webscheduler.vmlcreate] Allocation of VM #6 to Host #0 failed by RAM

```

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<terminated> CloudSimExample6 [Java Application] C:\Program Files\Java\jdk-15.0.1\bin\javaw.exe (30-May-2022, 8:34:50 pm - 8:34:53 pm) [pid: 14692]
4.198: Broker: Destroying VM #6
4.198: Broker: Destroying VM #7
4.198: Broker: Destroying VM #8
4.198: Broker: Destroying VM #9
4.198: Broker: Destroying VM #10
4.198: Broker: Destroying VM #11
Broker is shutting down...
Simulation: No more future events
CloudInformationService: Notify all CloudSim entities for shutting down.
Datacenter_0 is shutting down...
Datacenter_1 is shutting down...
Broker is shutting down...
Simulation completed.
Simulation completed.

```

Cloudlet ID	STATUS	Data center ID	VM ID	Time	Start Time	Finish Time
4	SUCCESS	2	4	3	0.2	3.2
16	SUCCESS	2	4	3	0.2	3.2
28	SUCCESS	2	4	3	0.2	3.2
5	SUCCESS	2	5	3	0.2	3.2
17	SUCCESS	2	5	3	0.2	3.2
29	SUCCESS	2	5	3	0.2	3.2
6	SUCCESS	3	6	3	0.2	3.2
18	SUCCESS	3	6	3	0.2	3.2
30	SUCCESS	3	6	3	0.2	3.2
7	SUCCESS	3	7	3	0.2	3.2
19	SUCCESS	3	7	3	0.2	3.2
31	SUCCESS	3	7	3	0.2	3.2

RESULT:

Hence the simulation of cloud scenario using cloudsims is verified.