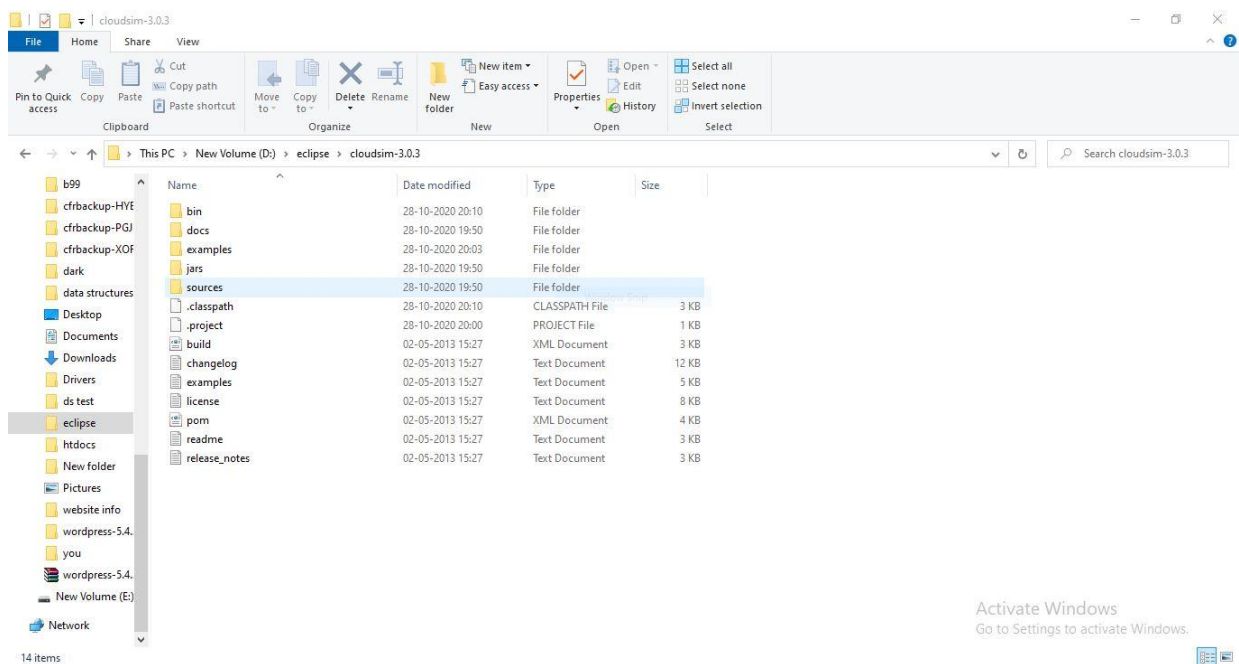
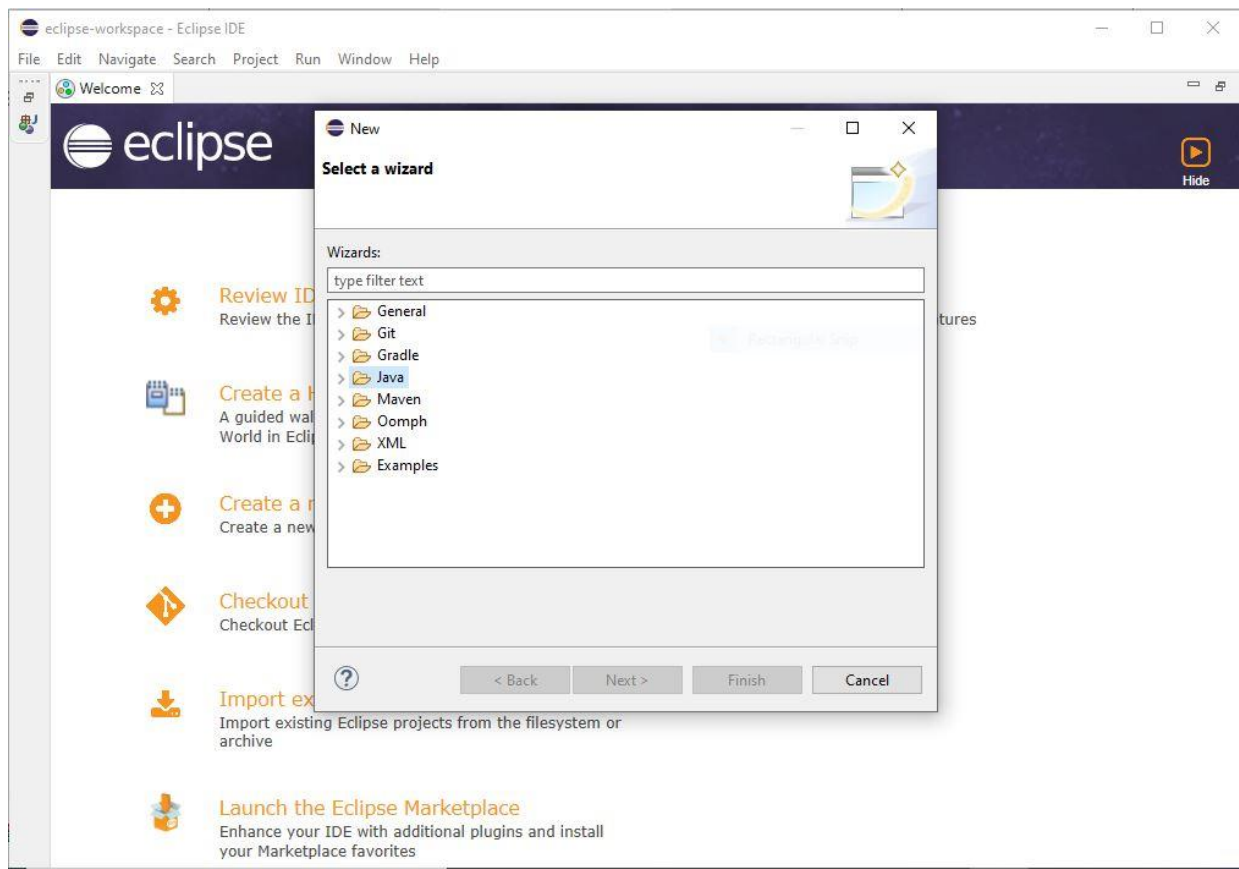


EX-NO:6

CLOUDSIM AND ECLIPSE INSTALLATION:



SAMPLE CLOUD SCENARIO:

```
eclipse-workspace - cloudsim/sample/examples/org/cloudsim/cloudsim/examples/CloudSimExample1.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

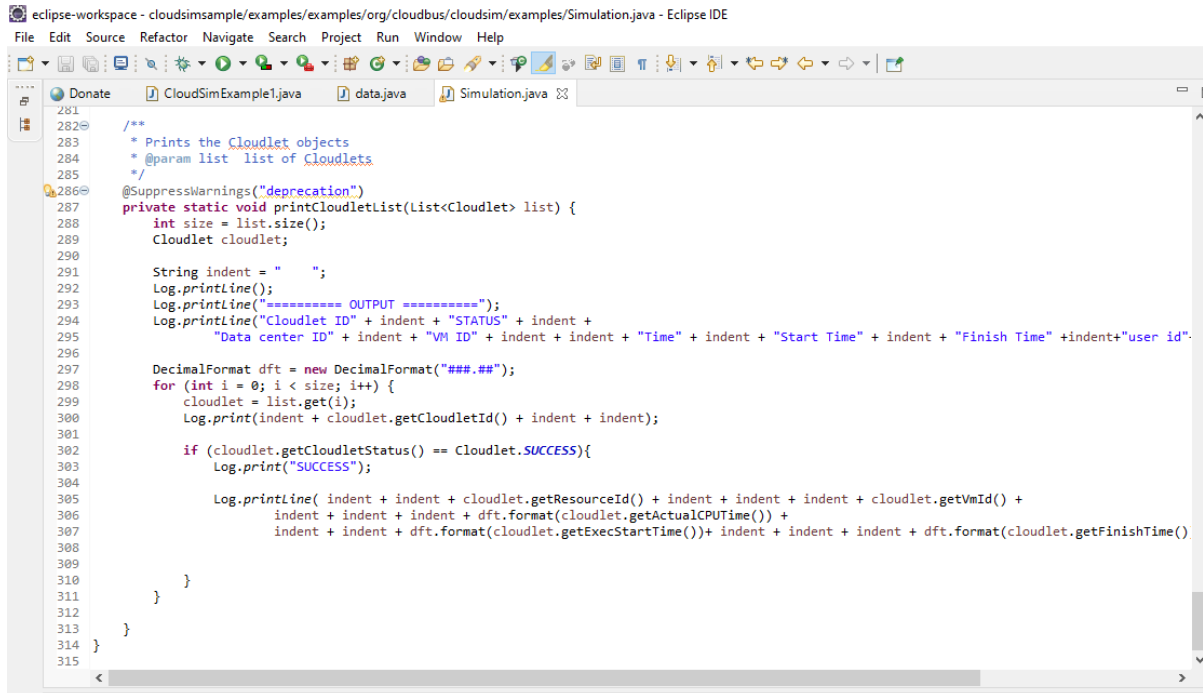
39 * cloudlet on it.
40 */
41 public class CloudSimExample1 {
42
43     /** The cloudlet list. */
44     private static List<Cloudlet> cloudletList;
45
46     /** The vmlist. */
47     private static List<Vm> vmlist;
48
49     /**
50      * Creates main() to run this example.
51      *
52      * @param args the args
53      */
54     @SuppressWarnings("unused")
55     public static void main(String[] args) {
56
57         Log.println("Starting CloudSimExample1...");
58
59         try {
60             // First step: Initialize the CloudSim package. It should be called
61             // before creating any entities.
62             int num_user = 1; // number of cloud users
63             Calendar calendar = Calendar.getInstance();
64             boolean trace_flag = false; // mean trace events
65
66             // Initialize the CloudSim library
67             CloudSim.init(num_user, calendar, trace_flag);
68
69             // Second step: Create Datacenters
70             // Datacenters are the resource providers in CloudSim. We need at
71             // list one of them to run a CloudSim simulation
72             Datacenter datacenter0 = createDatacenter("Datacenter_0");
73
```

OUTPUT:

```
Initialising...
Starting CloudSim version 3.0
Datacenter_0 is starting...
Broker is starting...
Entities started.
0.0: Broker: Cloud Resource List received with 1 resource(s)
0.0: Broker: Trying to Create VM #0 in Datacenter_0
0.1: Broker: VM #0 has been created in Datacenter #2, Host #0
0.1: Broker: Sending cloudlet 0 to VM #0
400.1: Broker: Cloudlet 0 received
400.1: Broker: All Cloudlets executed. Finishing...
400.1: Broker: Destroying VM #0
Broker is shutting down...
Simulation: No more future events
CloudInformationService: Notify all CloudSim entities for shutting down.
Datacenter_0 is shutting down...
Broker is shutting down...
Simulation completed.
Simulation completed.

===== OUTPUT =====
Cloudlet ID   STATUS   Data center ID   VM ID   Time   Start Time   Finish Time
0            SUCCESS   2                0       400    0.1          400.1
CloudSimExample1 finished!
```

SCHEDULING ALGORITHM:(SJF)



```
eclipse-workspace - cloudsimsample/examples/org/cloudbus/cloudsim/examples/Simulation.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

281
282 /**
283  * Prints the Cloudlet objects
284  * @param list list of Cloudlets
285  */
286 @SuppressWarnings("deprecation")
287 private static void printCloudletList(List<Cloudlet> list) {
288     int size = list.size();
289     Cloudlet cloudlet;
290
291     String indent = "    ";
292     Log.println();
293     Log.println("===== OUTPUT =====");
294     Log.println("Cloudlet ID" + indent + "STATUS" + indent +
295         "Data center ID" + indent + "VM ID" + indent + indent + "Time" + indent + "Start Time" + indent + "Finish Time" + indent + "user id".
296
297     DecimalFormat dft = new DecimalFormat("###.##");
298     for (int i = 0; i < size; i++) {
299         cloudlet = list.get(i);
300         Log.print(indent + cloudlet.getCloudletId() + indent + indent);
301
302         if (cloudlet.getCloudletStatus() == Cloudlet.SUCCESS){
303             Log.print("SUCCESS");
304
305             Log.println( indent + indent + cloudlet.getResourceId() + indent + indent + indent + cloudlet.getVmId() +
306                 indent + indent + indent + dft.format(cloudlet.getActualCPUTime()) +
307                 indent + indent + dft.format(cloudlet.getExecStartTime()) + indent + indent + indent + dft.format(cloudlet.getFinishTime())
308
309         }
310     }
311 }
312
313 }
314 }
315 }
```

```
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
[VmScheduler.vmCreate] Allocation of VM #6 to Host #0 failed by RAM
[VmScheduler.vmCreate] Allocation of VM #6 to Host #1 failed by MIPS
[VmScheduler.vmCreate] Allocation of VM #7 to Host #0 failed by RAM
[VmScheduler.vmCreate] Allocation of VM #7 to Host #1 failed by MIPS
[VmScheduler.vmCreate] Allocation of VM #8 to Host #0 failed by RAM
[VmScheduler.vmCreate] Allocation of VM #8 to Host #1 failed by MIPS
[VmScheduler.vmCreate] Allocation of VM #9 to Host #0 failed by RAM
[VmScheduler.vmCreate] Allocation of VM #9 to Host #1 failed by MIPS
0.1: Broker: VM #0 has been created in Datacenter #2, Host #0
0.1: Broker: VM #1 has been created in Datacenter #2, Host #0
0.1: Broker: VM #2 has been created in Datacenter #2, Host #0
0.1: Broker: VM #3 has been created in Datacenter #2, Host #1
0.1: Broker: VM #4 has been created in Datacenter #2, Host #0
0.1: Broker: VM #5 has been created in Datacenter #2, Host #1
0.1: Broker: Creation of VM #6 failed in Datacenter #2
```

```
0.2: Broker: Sending cloudlet 2 to VM #2
0.2: Broker: Sending cloudlet 3 to VM #3
0.2: Broker: Sending cloudlet 4 to VM #4
0.2: Broker: Sending cloudlet 5 to VM #5
0.2: Broker: Sending cloudlet 6 to VM #6
0.2: Broker: Sending cloudlet 7 to VM #7
0.2: Broker: Sending cloudlet 8 to VM #8
0.2: Broker: Sending cloudlet 9 to VM #9
0.2: Broker: Sending cloudlet 10 to VM #0
0.2: Broker: Sending cloudlet 11 to VM #1
0.2: Broker: Sending cloudlet 12 to VM #2
0.2: Broker: Sending cloudlet 13 to VM #3
0.2: Broker: Sending cloudlet 14 to VM #4
0.2: Broker: Sending cloudlet 15 to VM #5
0.2: Broker: Sending cloudlet 16 to VM #6
0.2: Broker: Sending cloudlet 17 to VM #7
0.2: Broker: Sending cloudlet 18 to VM #8
0.2: Broker: Sending cloudlet 19 to VM #9
0.2: Broker: Sending cloudlet 20 to VM #0
0.2: Broker: Sending cloudlet 21 to VM #1
0.2: Broker: Sending cloudlet 22 to VM #2
0.2: Broker: Sending cloudlet 23 to VM #3
0.2: Broker: Sending cloudlet 24 to VM #4
0.2: Broker: Sending cloudlet 25 to VM #5
0.2: Broker: Sending cloudlet 26 to VM #6
0.2: Broker: Sending cloudlet 27 to VM #7
0.2: Broker: Sending cloudlet 28 to VM #8
0.2: Broker: Sending cloudlet 29 to VM #9
0.2: Broker: Sending cloudlet 30 to VM #0
0.2: Broker: Sending cloudlet 31 to VM #1
0.2: Broker: Sending cloudlet 32 to VM #2
0.2: Broker: Sending cloudlet 33 to VM #3
0.2: Broker: Sending cloudlet 34 to VM #4
```

```
1.3539999999999999: Broker: Cloudlet 7 received
1.377: Broker: Cloudlet 5 received
1.6349999999999998: Broker: Cloudlet 6 received
1.781: Broker: Cloudlet 2 received
2.299: Broker: Cloudlet 1 received
2.471: Broker: Cloudlet 13 received
2.532: Broker: Cloudlet 8 received
2.826: Broker: Cloudlet 9 received
2.831: Broker: Cloudlet 4 received
2.941: Broker: Cloudlet 12 received
3.0509999999999997: Broker: Cloudlet 0 received
3.0509999999999997: Broker: Cloudlet 15 received
3.459: Broker: Cloudlet 17 received
4.514: Broker: Cloudlet 16 received
4.55: Broker: Cloudlet 23 received
4.752: Broker: Cloudlet 10 received
4.8619999999999999: Broker: Cloudlet 14 received
5.0819999999999999: Broker: Cloudlet 11 received
5.352: Broker: Cloudlet 19 received
5.4799999999999999: Broker: Cloudlet 22 received
5.48300000000000005: Broker: Cloudlet 18 received
5.88099999999999985: Broker: Cloudlet 25 received
5.976000000000000001: Broker: Cloudlet 27 received
6.3539999999999998: Broker: Cloudlet 24 received
7.0429999999999998: Broker: Cloudlet 35 received
7.105: Broker: Cloudlet 28 received
7.36799999999999986: Broker: Cloudlet 33 received
7.4779999999999998: Broker: Cloudlet 20 received
7.4779999999999998: Broker: Cloudlet 21 received
7.481000000000000001: Broker: Cloudlet 26 received
7.9649999999999998: Broker: Cloudlet 32 received
7.973000000000000001: Broker: Cloudlet 29 received
8.0749999999999998: Broker: Cloudlet 34 received
```

```
===== OUTPUT =====
```

Cloudlet ID	ID	STATUS	Data	center ID	VM ID	Time	Start Time	Finish Time	user id
3		SUCCESS	2	3		1.07	0.2	1.27	4
7		SUCCESS	3	7		1.15	0.2	1.35	4
5		SUCCESS	2	5		1.18	0.2	1.38	4
6		SUCCESS	3	6		1.43	0.2	1.63	4
2		SUCCESS	2	2		1.58	0.2	1.78	4
1		SUCCESS	2	1		2.1	0.2	2.3	4
13		SUCCESS	2	3		1.2	1.27	2.47	4
8		SUCCESS	3	8		2.33	0.2	2.53	4
9		SUCCESS	3	9		2.63	0.2	2.83	4
4		SUCCESS	2	4		2.63	0.2	2.83	4
12		SUCCESS	2	2		1.16	1.78	2.94	4
0		SUCCESS	2	0		2.85	0.2	3.05	4
15		SUCCESS	2	5		1.67	1.38	3.05	4
17		SUCCESS	3	7		2.11	1.35	3.46	4
16		SUCCESS	3	6		2.88	1.63	4.51	4
23		SUCCESS	2	3		2.08	2.47	4.55	4
10		SUCCESS	2	0		1.7	3.05	4.75	4
14		SUCCESS	2	4		2.03	2.83	4.86	4
11		SUCCESS	2	1		2.78	2.3	5.08	4
19		SUCCESS	3	9		2.53	2.83	5.35	4
22		SUCCESS	2	2		2.54	2.94	5.48	4
18		SUCCESS	3	8		2.95	2.53	5.48	4
25		SUCCESS	2	5		2.83	3.05	5.88	4
27		SUCCESS	3	7		2.52	3.46	5.98	4
24		SUCCESS	2	4		1.49	4.86	6.35	4
35		SUCCESS	2	5		1.16	5.88	7.04	4
28		SUCCESS	3	8		1.62	5.48	7.11	4
33		SUCCESS	2	3		2.82	4.55	7.37	4
20		SUCCESS	2	0		2.73	4.75	7.48	4
21		SUCCESS	2	1		2.4	5.08	7.48	4
26		SUCCESS	3	6		2.97	4.51	7.48	4