

CLOUD SIMULATION

**IMPLEMENT ROUND ROBIN TASK SCHEDULING IN BOTH TIME SHARED AND
SPACE SHARED CPU ASSIGNMENT**

AIM:

Implement Round Robin task scheduling in both Timeshared and Space Shared CPU assignments.

PROCEDURE:

1. Create a new project by selecting java console line application template and JDK 18.
2. Open project settings from the file menu of the options window.
3. Navigate to project dependencies and select on add external jars and then click on 'Browse' to open the path where you have unzipped the Cloud Sim Jars and click on apply.
4. Create a java file with the cloud Sim code to implement the round robin scheduling algorithm.
5. Run the application as a java file to see the output in the console below.

OUTPUT:

New Java Project

Create a Java Project

Enter a project name.

Project name:

☒ Use default location

Location: [Browse...](#)

JRE

☐ Use an execution environment JRE: [Configure JREs...](#)

☐ Use a project specific JRE: [Configure JREs...](#)

☒ Use default JRE 'jdk-20' and workspace compiler preferences

Project layout

☐ Use project folder as root for sources and class files

☒ Create separate folders for sources and class files [Configure default...](#)

Working sets

☐ Add project to working sets [New...](#)

Working sets: [Select...](#)

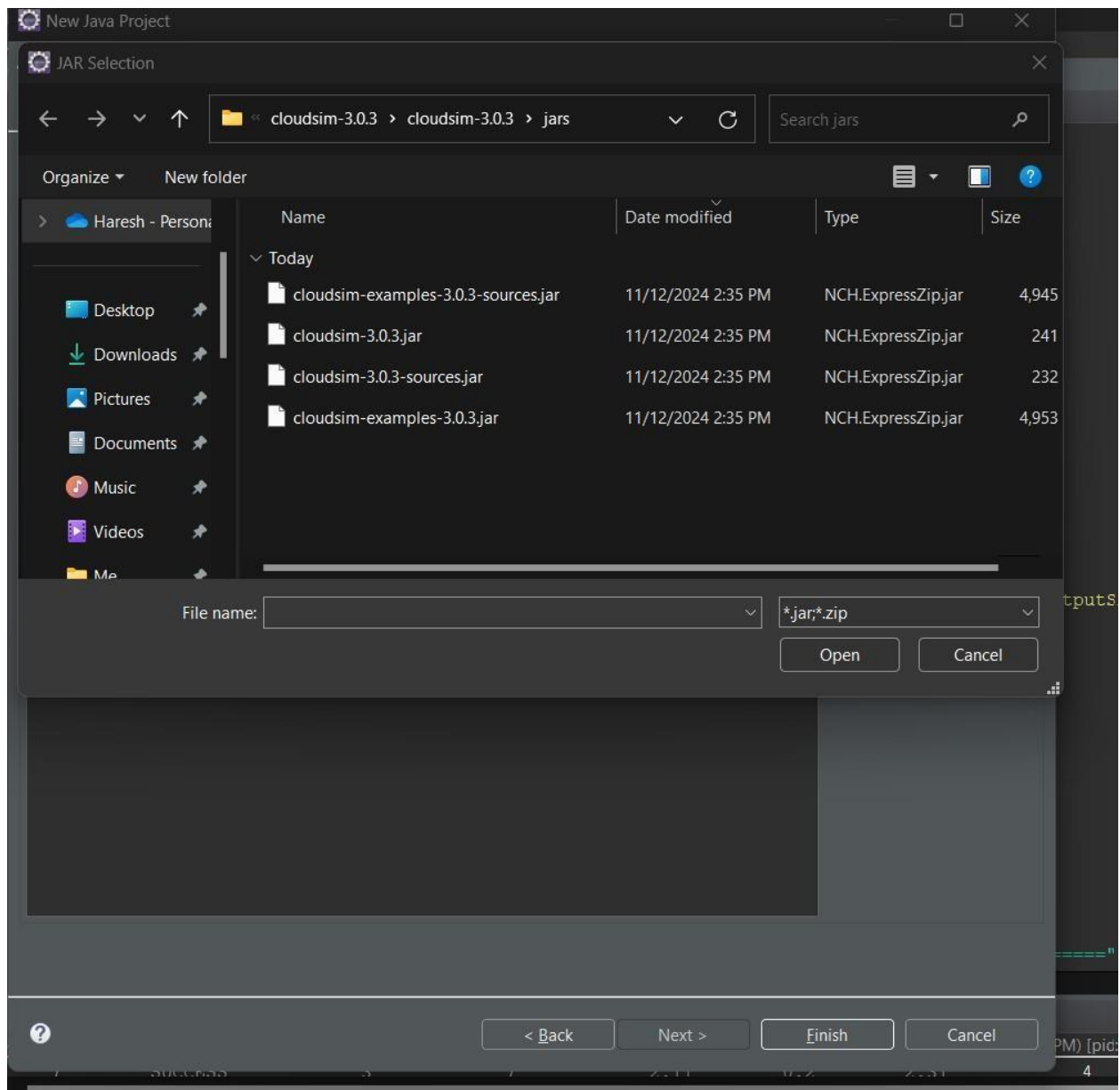
Module

☒ Create module-info.java file

Module name:

☒ Generate comments

[?](#) [< Back](#) [Next >](#) [Finish](#) [Cancel](#)



```
Problems Javadoc Declaration Console X
<terminated> RoundRobinTaskSceduling (1) [Java Application] C:\Program Files\Java\jdk-20\bin\javaw.exe (Nov 12, 2024, 3:42:27 PM - 3:42:27 PM) [pid: 21712]
===== Round Robin Task Scheduling Algorithm Implementation =====
===== Starting Execution =====
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.vmmCreate] Allocation of VM #6 to Host #0 failed by RAM
[VmScheduler.vmmCreate] Allocation of VM #6 to Host #1 failed by MIPS
[VmScheduler.vmmCreate] Allocation of VM #7 to Host #0 failed by RAM
[VmScheduler.vmmCreate] Allocation of VM #7 to Host #1 failed by MIPS
[VmScheduler.vmmCreate] Allocation of VM #8 to Host #0 failed by RAM
[VmScheduler.vmmCreate] Allocation of VM #8 to Host #1 failed by MIPS
[VmScheduler.vmmCreate] Allocation of VM #9 to Host #0 failed by RAM
[VmScheduler.vmmCreate] 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
0.1: Broker: Creation of VM #7 failed in Datacenter #2
0.1: Broker: Creation of VM #8 failed in Datacenter #2
0.1: Broker: Creation of VM #9 failed in Datacenter #2

Problems Javadoc Declaration Console X
<terminated> RoundRobinTaskSceduling (1) [Java Application] C:\Program Files\Java\jdk-20\bin\javaw.exe (Nov 12, 2024, 3:42:27 PM - 3:42:27 PM) [pid: 21712]
===== OUTPUT =====
-----
Cloudlet      Burst Time      Waiting Time      Turn Around Time
-----
Cloudlet: 2      1.03           0.0              1.03
Cloudlet: 9      1.47           1.03             2.5
Cloudlet: 0      1.52           2.5              4.02
Cloudlet: 4      1.64           4.02             5.66
Cloudlet: 6      1.99           5.66             7.6499996
Cloudlet: 7      2.11           7.6499996        9.759999
Cloudlet: 3      2.54           9.759999         12.299999
Cloudlet: 1      2.65           12.299999        14.949999
Cloudlet: 8      2.79           14.949999        17.739998
Cloudlet: 5      2.86           17.739998        20.599998
Cloudlet: 10     1.45           20.599998        22.05
```

| Cloudlet: 35 2.73 80.56 83.29 Average Waiting Time on Total: 40.25475 Average Turn Around Time on Total: 42.336998 | | | | | | | | | | |
|---|---------|----------------|-------|------|------------|-------------|---------|--------------|------------------|--|
| Cloudlet ID | STATUS | Data center ID | VM ID | Time | Start Time | Finish Time | User ID | Waiting Time | Turn Around Time | |
| 2 | SUCCESS | 2 | 2 | 1.03 | 0.2 | 1.23 | 4 | 0.0 | 1.03 | |
| 9 | SUCCESS | 3 | 9 | 1.47 | 0.2 | 1.67 | 4 | 1.03 | 2.5 | |
| 0 | SUCCESS | 2 | 0 | 1.52 | 0.2 | 1.72 | 4 | 2.5 | 4.02 | |
| 4 | SUCCESS | 2 | 4 | 1.64 | 0.2 | 1.84 | 4 | 4.02 | 5.66 | |
| 6 | SUCCESS | 3 | 6 | 1.99 | 0.2 | 2.19 | 4 | 5.66 | 7.6499996 | |
| 7 | SUCCESS | 3 | 7 | 2.11 | 0.2 | 2.31 | 4 | 7.6499996 | 9.759999 | |
| 3 | SUCCESS | 2 | 3 | 2.54 | 0.2 | 2.74 | 4 | 9.759999 | 12.299999 | |
| 1 | SUCCESS | 2 | 1 | 2.65 | 0.2 | 2.85 | 4 | 12.299999 | 14.949999 | |
| 8 | SUCCESS | 3 | 8 | 2.79 | 0.2 | 2.99 | 4 | 14.949999 | 17.739998 | |
| 5 | SUCCESS | 2 | 5 | 2.86 | 0.2 | 3.06 | 4 | 17.739998 | 20.599998 | |
| 10 | SUCCESS | 2 | 0 | 1.45 | 1.72 | 3.17 | 4 | 20.599998 | 22.05 | |
| 14 | SUCCESS | 2 | 4 | 1.69 | 1.84 | 3.53 | 4 | 22.05 | 23.74 | |
| 19 | SUCCESS | 3 | 9 | 2.09 | 1.67 | 3.76 | 4 | 23.74 | 25.83 | |
| 16 | SUCCESS | 3 | 6 | 1.83 | 2.19 | 4.02 | 4 | 25.83 | 27.66 | |
| 12 | SUCCESS | 2 | 2 | 2.94 | 1.23 | 4.17 | 4 | 27.66 | 30.6 | |
| 15 | SUCCESS | 2 | 5 | 2 | 3.06 | 5.06 | 4 | 30.6 | 32.6 | |
| 24 | SUCCESS | 2 | 4 | 1.67 | 3.53 | 5.2 | 4 | 32.6 | 34.269997 | |
| 18 | SUCCESS | 3 | 8 | 2.29 | 2.99 | 5.27 | 4 | 34.269997 | 36.55999 | |
| 11 | SUCCESS | 2 | 1 | 2.45 | 2.85 | 5.31 | 4 | 36.559998 | 39.01 | |
| 17 | SUCCESS | 3 | 7 | 3.07 | 2.31 | 5.38 | 4 | 39.01 | 42.079998 | |
| 13 | SUCCESS | 2 | 3 | 2.91 | 2.74 | 5.65 | 4 | 42.079998 | 44.98999 | |
| 20 | SUCCESS | 2 | 0 | 2.72 | 3.17 | 5.89 | 4 | 44.989998 | 47.71 | |
| 26 | SUCCESS | 3 | 6 | 1.88 | 4.02 | 5.9 | 4 | 47.71 | 49.59 | |
| 29 | SUCCESS | 3 | 9 | 2.44 | 3.76 | 6.2 | 4 | 49.59 | 52.03 | |
| 34 | SUCCESS | 2 | 4 | 1.43 | 5.2 | 6.63 | 4 | 52.03 | 53.46 | |
| 22 | SUCCESS | 2 | 2 | 2.59 | 4.17 | 6.76 | 4 | 53.46 | 56.05 | |
| 23 | SUCCESS | 2 | 3 | 1.34 | 5.65 | 6.99 | 4 | 56.05 | 57.39 | |
| 25 | SUCCESS | 2 | 5 | 2.04 | 5.06 | 7.1 | 4 | 57.39 | 59.43 | |
| 39 | SUCCESS | 3 | 9 | 1.06 | 6.2 | 7.26 | 4 | 59.43 | 60.49 | |
| 28 | SUCCESS | 3 | 8 | 2.36 | 5.27 | 7.63 | 4 | 60.49 | 62.850002 | |
| 32 | SUCCESS | 2 | 2 | 1.13 | 6.76 | 7.88 | 4 | 62.850002 | 63.98000 | |
| Round Robin has finished executing! | | | | | | | | | | |
| 20 | SUCCESS | 2 | 0 | 2.72 | 3.17 | 5.89 | 4 | 44.989998 | 47.71 | |
| 26 | SUCCESS | 3 | 6 | 1.88 | 4.02 | 5.9 | 4 | 47.71 | 49.59 | |
| 29 | SUCCESS | 3 | 9 | 2.44 | 3.76 | 6.2 | 4 | 49.59 | 52.03 | |
| 34 | SUCCESS | 2 | 4 | 1.43 | 5.2 | 6.63 | 4 | 52.03 | 53.46 | |
| 22 | SUCCESS | 2 | 2 | 2.59 | 4.17 | 6.76 | 4 | 53.46 | 56.05 | |
| 23 | SUCCESS | 2 | 3 | 1.34 | 5.65 | 6.99 | 4 | 56.05 | 57.39 | |
| 25 | SUCCESS | 2 | 5 | 2.04 | 5.06 | 7.1 | 4 | 57.39 | 59.43 | |
| 39 | SUCCESS | 3 | 9 | 1.06 | 6.2 | 7.26 | 4 | 59.43 | 60.49 | |
| 28 | SUCCESS | 3 | 8 | 2.36 | 5.27 | 7.63 | 4 | 60.49 | 62.850002 | |
| 32 | SUCCESS | 2 | 2 | 1.13 | 6.76 | 7.88 | 4 | 62.850002 | 63.98000 | |
| 27 | SUCCESS | 3 | 7 | 2.52 | 5.38 | 7.9 | 4 | 63.980003 | 66.5 | |
| 30 | SUCCESS | 2 | 0 | 2.13 | 5.89 | 8.02 | 4 | 66.5 | 68.63 | |
| 36 | SUCCESS | 3 | 6 | 2.2 | 5.9 | 8.09 | 4 | 68.63 | 70.829994 | |
| 21 | SUCCESS | 2 | 1 | 2.97 | 5.31 | 8.28 | 4 | 70.829994 | 73.79999 | |
| 33 | SUCCESS | 2 | 3 | 1.97 | 6.99 | 8.96 | 4 | 73.799995 | 75.77 | |
| 31 | SUCCESS | 2 | 1 | 1.01 | 8.28 | 9.29 | 4 | 75.77 | 76.78 | |
| 38 | SUCCESS | 3 | 8 | 1.96 | 7.63 | 9.59 | 4 | 76.78 | 78.74 | |
| 37 | SUCCESS | 3 | 7 | 1.82 | 7.9 | 9.72 | 4 | 78.74 | 80.56 | |
| 35 | SUCCESS | 2 | 5 | 2.73 | 7.1 | 9.83 | 4 | 80.56 | 83.29 | |

RESULT: Round Robin task scheduling in both Timeshared and Space Shared CPU assignments has been successfully implemented.