Experiment 2.1

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Branch: B.E. CSE **Section: 21BCS_CC-646-A**
Semester: 6TH **Date of Performance: 26-02-24**
Subject Name: CCDS **Subject Code: 21CSP-378**

1. Aim:
Simulate a cloud scenario using Matlab and run a scheduling algorithm.

2. Objective:
The objective is to simulate a cloud computing environment in MATLAB and evaluate the effectiveness of scheduling algorithms in optimizing resource utilization and minimizing task completion time. This aims to inform decision-making in cloud infrastructure management and algorithm selection.

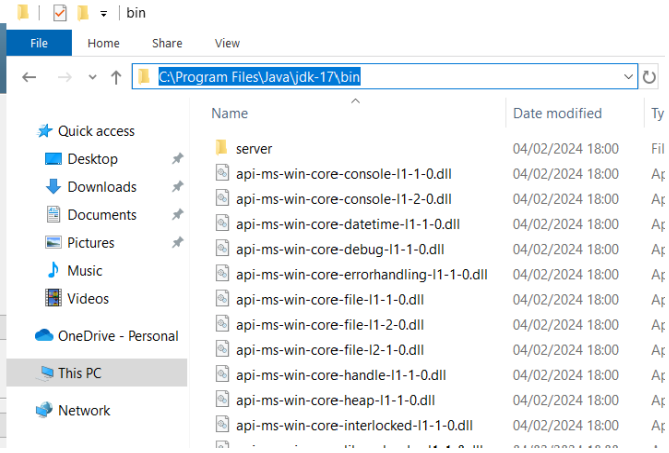
3. Theory:

MATLAB: MATLAB is a high-level programming language and interactive environment primarily used for numerical computation, data analysis, and visualization. It offers powerful tools for matrix computation, numerical analysis, data visualization, algorithm development, and integration with other languages.

Scheduling Algorithms: Scheduling algorithms are essential in computer science and operating systems for managing tasks and resources efficiently. Common algorithms include FCFS, SJF, priority scheduling, round-robin, multi-level queues, and deadline-based scheduling. Each algorithm aims to optimize metrics like throughput, latency, fairness, and resource utilization based on specific system requirements and objectives.

4. Script and Output:
Step 1: Install jdk-17 and Set up its path in Environment Variables in Advance System Settings.


Java(TM) SE Development Kit 17.0.10 (64-bit) - Destination Folder
Java
ORACLE
This will install the Java(TM) SE Development Kit 17.0.10 (64-bit), which requires 420MB on your hard drive. Click the "Change" button to change the installation folder.
Install Java(TM) SE Development Kit 17.0.10 (64-bit) to:
C:\Program Files\Java\jdk-17\
Change...
Back
Next
Cancel


bin
File
Home
Share
View
C:\Program Files\Java\jdk-17\bin
Quick access
Desktop
Downloads
Documents
Pictures
Music
Videos
OneDrive - Personal
This PC
Network
Name
Date modified
server
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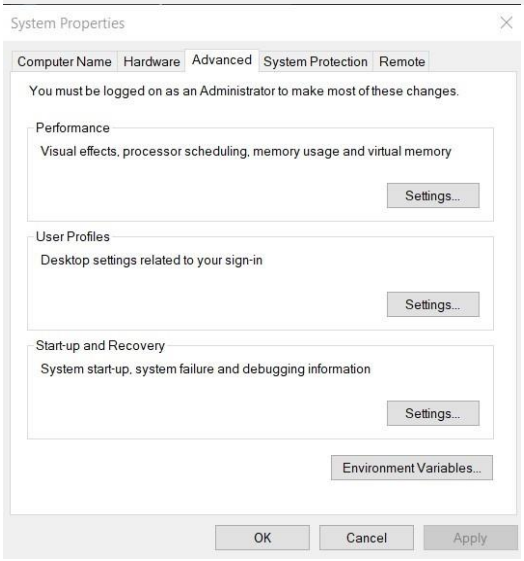
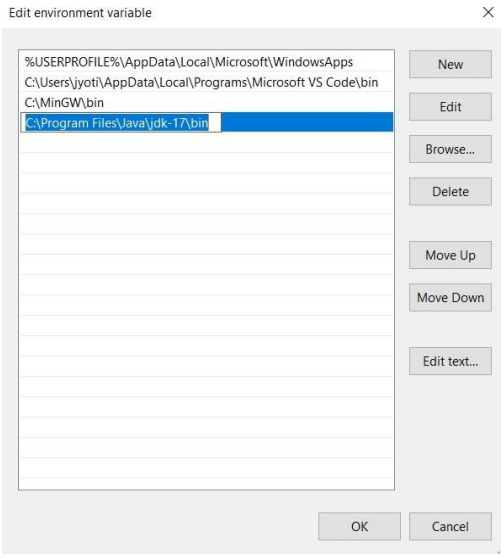
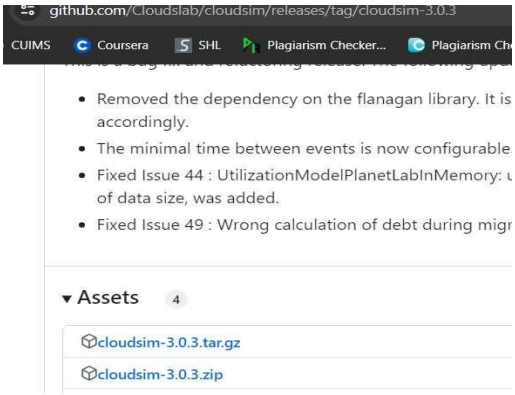
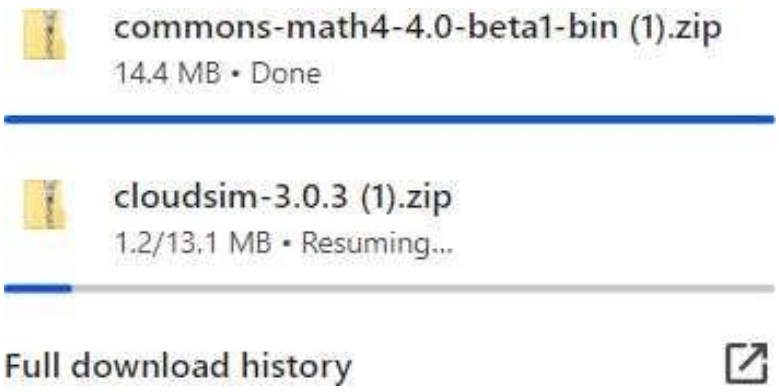
04/02/2024 18:00


System Properties
Computer Name
Hardware
Advanced
System Protection
Remote
You must be logged on as an Administrator to make most of these changes.
Performance
Visual effects, processor scheduling, memory usage and virtual memory
Settings...
User Profiles
Desktop settings related to your sign-in
Settings...
Start-up and Recovery
System start-up, system failure and debugging information
Settings...
Environment Variables...
OK
Cancel
Apply


Edit environment variable
%USERPROFILE%\AppData\Local\Microsoft\WindowsApps
C:\Users\jyoti\AppData\Local\Programs\Microsoft VS Code\bin
C:\MinGW\bin
C:\Program Files\Java\jdk-17\bin
New
Edit
Browse...
Delete
Move Up
Move Down
Edit text...
OK
Cancel

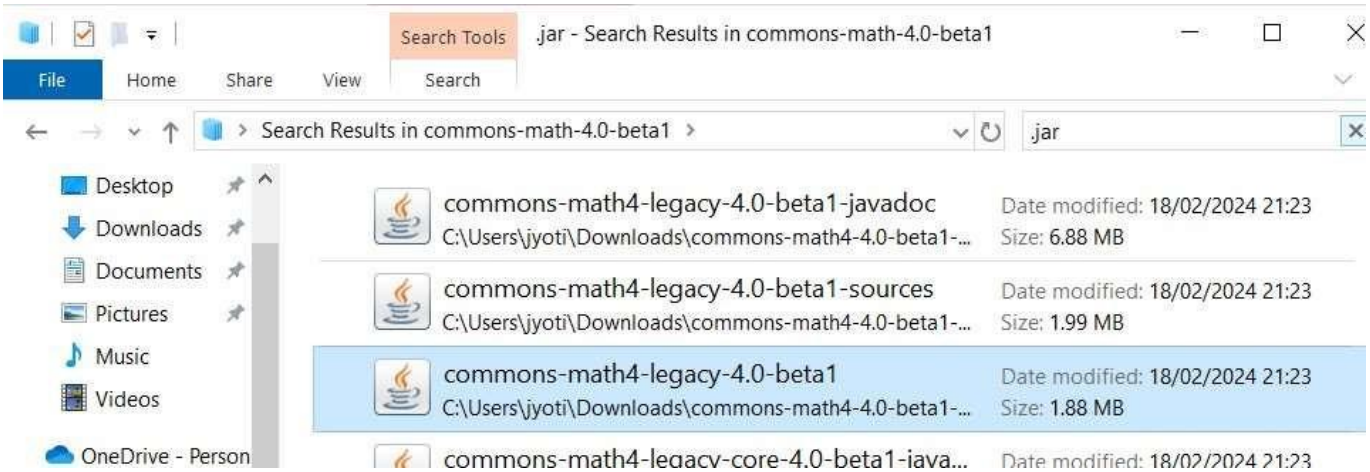
Step 2: Download Cloud Sim 3.0.3 zip file and common-math zip file



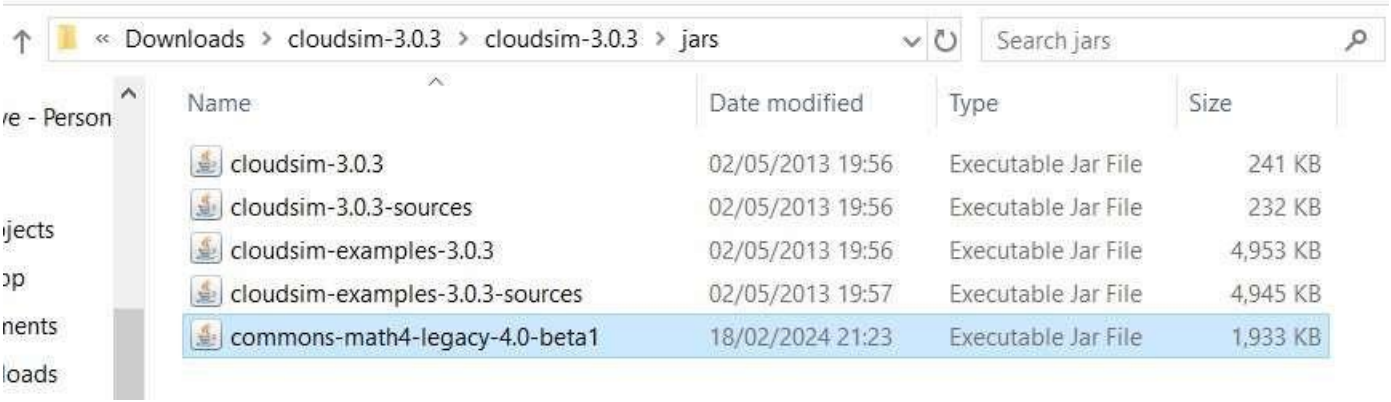


Step 3: Now download Eclipse IDE

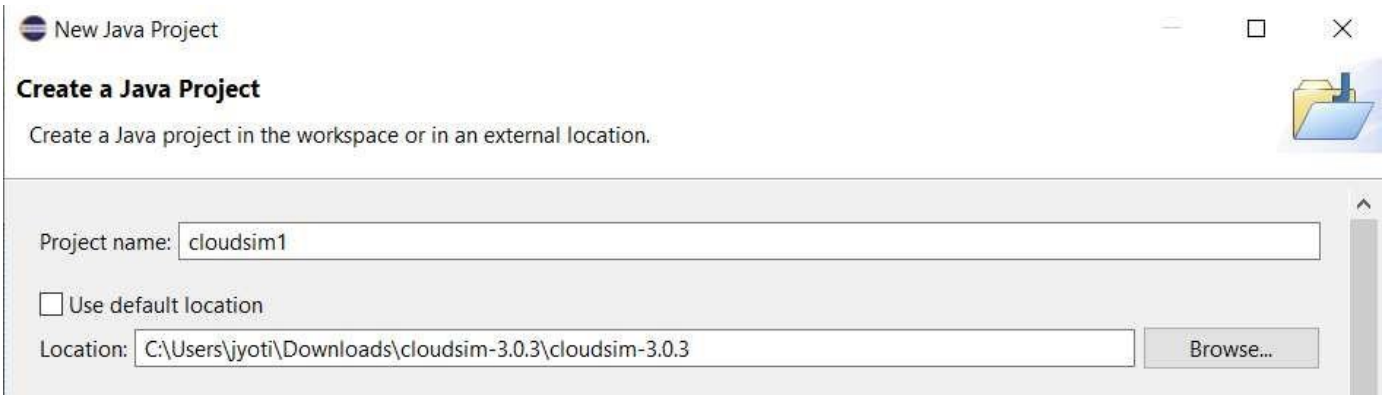
Step 4: Put the common math jar file into the jar folder in cloud sim.



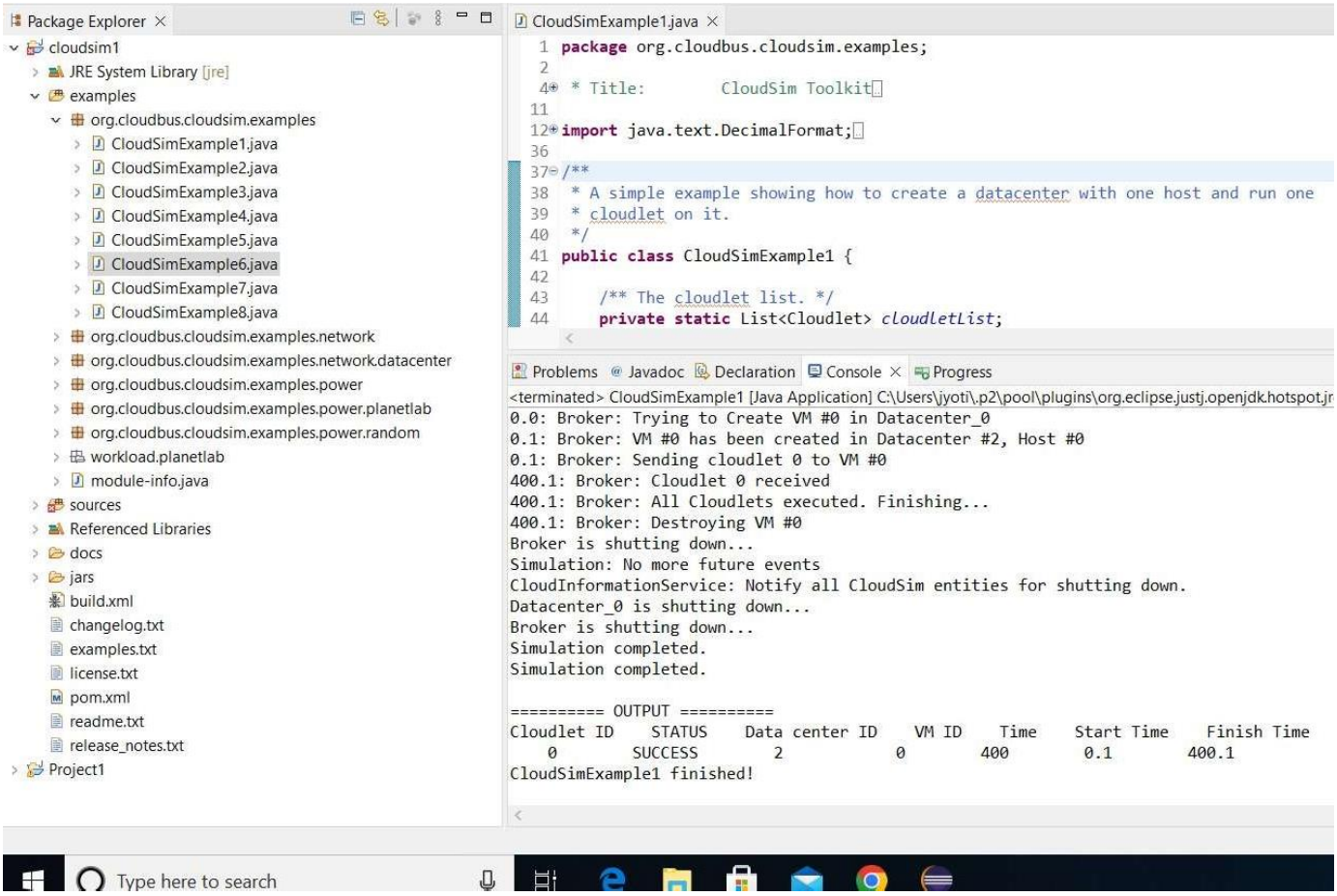
Step 5: Paste the common jar file in Cloud Sim 3.0.3 jar files.



Step 6: Build a new Java Project say cloudsim1 and browse any location.



Step 7: Run the Cloud Sim Example.



5. Learning Outcomes:

- I have learned decision-making in cloud infrastructure management.
- I have learned data analysis and visualization.
- I have learned critical thinking and problem-solving.