

Screenshots

Question 1

The image shows a Mac desktop with four terminal windows open, each displaying command-line output. The desktop bar at the bottom has icons for various applications like Mail, Calendar, and Finder.

- Terminal 1 - ci:** Shows the compilation of `ci_q1.c` and execution of the resulting binary `./ci`. It outputs "Marks of Students : Student ID 1 -".
- Terminal 2 - st:** Shows the compilation of `student_q1.c` and execution of the resulting binary `./st`. It outputs "Marks of Students : Student ID 1 -".
- Terminal 3 - ta:** Shows the compilation of `TA_q1.c` and execution of the resulting binary `./ta`. It outputs "Marks of Students : Student ID 1 -".
- Terminal 4 - bash:** Shows the compilation of `ci_q1.c` and execution of the resulting binary `./ci`. It outputs "Marks of Students : Student ID 1 - 10, 2 - 20, 3 - 30, 4 - 40, 5 - 50". It then sends marks to TA and calculates average grades. The output includes:
 - sent marks to Student with ID 1 : 10.000000 marks
 - sent marks to Student with ID 2 : 20.000000 marks
 - sent marks to Student with ID 3 : 30.000000 marks
 - sent marks to Student with ID 4 : 40.000000 marks
 - sent marks to Student with ID 5 : 50.000000 marksIt also displays the average grade as "Average:30.000000".
- Terminal 5 - bash:** Shows the compilation of `TA_q1.c` and execution of the resulting binary `./ta`. It outputs "Marks Recieved by TA : Student ID 0 - 10.000000, 1 - 20.000000, 2 - 30.000000, 3 - 40.000000, 4 - 50.000000". It then calculates the average mark as "Average Mark is : 30.000000" and sends the results to the course instructor.

Question 2

```
[Jessiyas-MacBook-Pro:Q2 jessiyajoy$ gcc q2.c -o q2
[Jessiyas-MacBook-Pro:Q2 jessiyajoy$ ./q2
number of processes n read from input file : 5
number of resources m read from input file : 3

Available Resources read from input file ...
Alloc Table read from input file ...
Max Table read from input file ...

Available Resources
3 3 2

Max Table
7 5 3
3 2 2
9 0 2
4 2 2
5 3 3

Alloc Table
0 1 0
2 0 0
3 0 2
2 1 1
0 0 2

Need Table
7 4 3
1 2 2
6 0 0
2 1 1
5 3 1
```

```
~~~~~
```

Following is a Safe Sequence

2 3 1 4 5

input sequence read from input file

Input Sequence : 1 2 3 4 5

State is NOT SAFE

input sequence read from input file

Input Sequence : 2 3 1 4 5

State is SAFE

input request read from input file

Request 7 7 7

REQUEST CANNOT BE GRANTED

input request read from input file

Request 1 0 2

REQUEST CAN BE GRANTED

Jessiyas-MacBook-Pro:Q2 jessiyajoy\$ █

Question 3

```
Jessiyas-MacBook-Pro:Q3 jessiyajoy$ ./q3
Philosopher 1 is thinking
Philosopher 2 is thinking
Philosopher 3 is thinking
Philosopher 4 is thinking
Philosopher 5 is thinking
Philosopher 1 is Hungry
Philosopher 3 is Hungry
Philosopher 4 is Hungry
Philosopher 2 is Hungry
Philosopher 5 is Hungry
Philosopher 1 takes fork 5 and 1
Philosopher 1 is Eating
Philosopher 3 takes fork 2 and 3
Philosopher 3 is Eating
Philosopher 2 putting fork 1 and 2 down
Philosopher 2 is thinking
Philosopher 5 putting fork 4 and 5 down
Philosopher 5 is thinking
Philosopher 4 putting fork 3 and 4 down
Philosopher 4 is thinking
Philosopher 4 is Hungry
Philosopher 2 is Hungry
Philosopher 5 is Hungry
Philosopher 1 putting fork 5 and 1 down
Philosopher 1 is thinking
Philosopher 3 putting fork 2 and 3 down
Philosopher 3 is thinking
Philosopher 2 takes fork 1 and 2
Philosopher 2 is Eating
Philosopher 5 takes fork 4 and 5
Philosopher 5 is Eating
Philosopher 3 is Hungry
Philosopher 1 is Hungry
Philosopher 4 putting fork 3 and 4 down
Philosopher 4 is thinking
Philosopher 5 putting fork 4 and 5 down
Philosopher 5 is thinking
Philosopher 2 putting fork 1 and 2 down
Philosopher 2 is thinking
```