Spring 2022
CSE 321 Operating Systems
Lab Assignment 6
Total Marks: 20
Deadline: 28th April, 11:59 PM

Question 1 {10 Marks}

Write a program in c to detect if the system will face any deadlock in the future. If a deadlock is detected then print “Deadlock Ahead” otherwise print “Safe here”. The situation is given below. (Allowed to use Banker’s Algorithm).

Note: The code can be implemented in several different ways, but make sure the parameter remains the same as shown below.

```
n = 5; // Number of processes
m = 4; // Number of resources
int alloc[5][4] = { { 0, 1, 0, 3 }, // P0 // Allocation Matrix
                    { 2, 0, 0, 0 }, // P1
                    { 3, 0, 2, 0 }, // P2
                    { 2, 1, 1, 5 }, // P3
                    { 0, 0, 2, 2 } }; // P4

int max[5][4] = { { 6, 4, 3, 4 }, // P0  // MAX Matrix
                  { 3, 2, 2, 1 }, // P1
                  { 9, 1, 2, 6 }, // P2
                  { 2, 2, 2, 8 }, // P3
                  { 4, 3, 3, 7 } }; // P4

int avail[4] = { 3, 3, 2, 1 };      //Available resources
```

Question 2 {10 Marks}

Write a c program that will generate the safe sequence of process execution for the situation given below:(Use Banker's Algorithm).

Note: The code can be implemented in several different ways, but make sure the parameter remains the same as shown below.

```
n = 6; // Number of processes
m = 4; // Number of resources
int alloc[6][4] = { { 0, 1, 0, 3 }, // P0 // Allocation Matrix
                    { 2, 0, 0, 3 }, // P1
                    { 3, 0, 2, 0 }, // P2
                    { 2, 1, 1, 5 }, // P3
                    { 0, 0, 2, 2 }, // P4
                    {1, 2 , 3, 1 } }; //P5

int max[6][4] = { { 6, 4, 3, 4 }, // P0 // MAX Matrix
                  { 3, 2, 2, 4 }, // P1
                  { 9, 1, 2, 6 }, // P2
                  { 2, 2, 2, 8 }, // P3
                  { 4, 3, 3, 7 }, // P4
                  { 6, 2 , 6, 5 } }; //P5

int avail[4] = { 2, 2, 2, 1 };      //Available resources
```