# CSE 321 Operating Systems

# Lab Assignment 5

**Total Marks: 20**

**Question 1**

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). [**10 Marks]**

**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**

Write a c program that will generate the safe sequence of process execution for the situation given below:(Use Banker’s Algorithm). **[10 Marks]**

**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