COMSATS UNIVERSITY ISLAMABAD
ATTOCK CAMPUS

Lab Report 10 : Operating System

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Rubrics Assessment Sheet for Operating System	
Lab #:	**Lab no 10**
Lab Title:	**Banker Algorithm and Deadlock Avoidance**
Submitted by:	

Names	**Registration**
Muaaz Shoaib	**FA20-BCS-074**
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Rubrics name & number		Marks	
		ln-Lab	Post lab
Engineering Knowledge	*R2:* Use of Engineering Knowledge and follow Experiment Procedures: *Ability to follow experimental procedure,control variables,and record Procedural steps on lab report.*		
Problem Analysis	*R6: Experimental Data Analysis :* *Ability to interept findings,compare them to values in the literature,identify weaknesses and limitations*		
Design	*RS: Best Coding Staudards:* *Ability lo follow the* coding standards and programming practices		
Modem Tools Usage	*R9: Undcrsta11d Tools: Ability to describe and explain the principles behind applicability of engineering tools*.		
Individual and Teamwork	*R9:Management of Team Work:* *Ability to appreciate, understand and work multidisciplinary team members*		

Rubrics #	R2	R6	RS	R9	Rl3
Jn -Lab					
Post- Lab					

IN-LAB QUESTIONS

Q : Write a C program to simulate Bankers algorithm for the purpose of deadlock avoidance.

Answer :

Code :

```
#include<stdio.h>
struct file {
  int all[100];
  int max[100];
  int need[100];
  int flag;
};
void main() {
  struct file f[100];
  int fl;

  int i, j, k, p, b, n, r, g, cnt = 0, id, newr;
  int avail[100], seq[100];
  //clrscr();
  printf("Enter number of processes -- ");
  scanf("%d", & n);
  printf("Enter number of resources -- ");
  scanf("%d", & r);
  for (i = 0; i < n; i++) {
    printf("Enter details for P%d", i);
    printf("\nEnter allocation\t -- \t");
  for (i = 0; i < n; i++) {
    printf("P%d\t", i);
    for (j = 0; j < r; j++)
```

```
    printf("%6d", f[i].all[j]);
  for (j = 0; j < r; j++)
    printf("%6d", f[i].max[j]);
  for (j = 0; j < r; j++)
    printf("%6d", f[i].need[j]);
  printf("\n");
 }
 getch();
```

Output :

```
Enter Request for Resources      --     1
2
3
4
5

 REQUEST NOT GRANTED -- DEADLOCK OCCURRED
 SYSTEM IS IN UNSAFE STATE
Process         Allocation                  Max                     Need
P0          1     2     3     4     5     3     7     8     9     1     2     5     5     5     0
P1          1     2     3     4     5     9     0     7     1     6     8     0     4     0     1
P2          1     2     3     4     5     8     7     6     5     4     7     5     3     1     0
P3          1     2     3     4     5     1     2     3     4     5     0     0     0     0     0
P4          1     2     3     4     5     7     6     5     8     9     6     4     2     4     4
P5          1     2     3     4     5     1     2     3     4     5     0     0     0     0     0
P6          1     2     3     4     5     6     9     2     5     1     5     7     0     1     0
P7          1     2     3     4     5     1     2     3     4     5     0     0     0     0     0
P8          1     2     3     4     5     1     2     3     4     5     0     0     0     0     0
P9          1     2     3     4     5     1     2     3     4     5     0     0     0     0     0
P10         1     2     3     4     5     9     8     7     6     5     8     6     4     2     0
P11         1     2     3     4     5     5     4     3     2     1     4     2     0     0     0
P12         1     2     3     4     5     1     2     3     4     5     0     0     0     0     0
P13         1     2     3     4     5     0     9     8     7     6     0     7     5     3     1
P14         1     2     3     4     5     6     7     8     9     0     5     5     5     5     0
P15         1     2     3     4     5     1     2     3     4     5     0     0     0     0     0
P16         1     2     3     4     5     5     4     3     2     1     4     2     0     0     0
P17         1     2     3     4     5     6     7     8     9     0     5     5     5     5     0
```