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SE-4-D

EXPERIMENT N0-7

Write a program to demonstrate the concept of deadlockavoidance through Banker's Algorithm

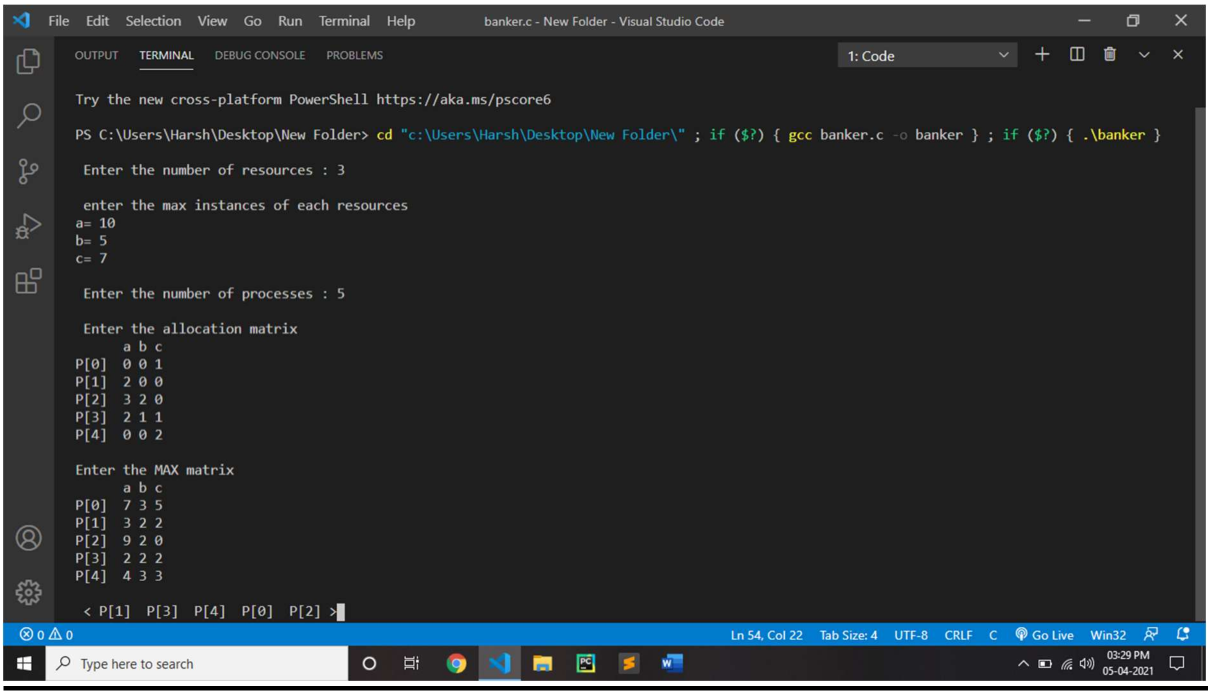
CODE:

```
#include<stdio.h>

#include<conio.h>

void main() {

        int
k=0,output[10],d=0,t=0,ins[5],i,avail[5],allocated[10][5],need[10][5],MAX[10][
5],pno,P[10],j,rz, count=0;

        printf("\n Enter the number of resources : ");

        scanf("%d", &rz);

        printf("\n enter the max instances of each resources\n");

        for (i=0;i<rz;i++) {

                avail[i]=0;

                printf("%c= ",(i+97));

                scanf("%d",&ins[i]);

        }

        printf("\n Enter the number of processes : ");

        scanf("%d", &pno);

        printf("\n Enter the allocation matrix \n     ");

        for (i=0;i<rz;i++)

        printf(" %c",(i+97));

        printf("\n");

        for (i=0;i <pno;i++) {

                P[i]=i;

                printf("P[%d]  ",P[i]);

                for (j=0;j<rz;j++) {
```

```
                scanf("%d",&allocated[i][j]);
                avail[j]+=allocated[i][j];
        }
}
printf("\nEnter the MAX matrix \n     ");
for (i=0;i<rz;i++) {
        printf(" %c",(i+97));
        avail[i]=ins[i]-avail[i];
}
printf("\n");
for (i=0;i <pno;i++) {
        printf("P[%d]  ",i);
        for (j=0;j<rz;j++)
         scanf("%d", &MAX[i][j]);
}
printf("\n");
A: d=-1;
for (i=0;i <pno;i++) {
        count=0;
        t=P[i];
        for (j=0;j<rz;j++) {
                need[t][j] = MAX[t][j]-allocated[t][j];
                if(need[t][j]<=avail[j])
                 count++;
        }
        if(count==rz) {
                output[k++]=P[i];
```

```
                    for (j=0;j<rz;j++)
                    avail[j]+=allocated[t][j];
            } else
             P[++d]=P[i];
        }
        if(d!=-1) {
            pno=d+1;
            goto A;
        }
        printf(" <");
        for (i=0;i<k;i++)
        printf(" P[%d] ",output[i]);
        printf(">");
        getch();
}
```

OUTPUT:



File Edit Selection View Go Run Terminal Help
banker.c - New Folder - Visual Studio Code
OUTPUT TERMINAL DEBUG CONSOLE PROBLEMS
1: Code
Ln 54, Col 22 Tab Size: 4 UTF-8 CRLF C Go Live Win32
Type here to search
03:29 PM
05-04-2021

```
Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Harsh\Desktop\New Folder> cd "c:\Users\Harsh\Desktop\New Folder\" ; if ($?) { gcc banker.c -o banker } ; if ($?) { .\banker }

 Enter the number of resources : 3

 enter the max instances of each resources
a= 10
b= 5
c= 7

 Enter the number of processes : 5

 Enter the allocation matrix
      a b c
P[0]  0 0 1
P[1]  2 0 0
P[2]  3 2 0
P[3]  2 1 1
P[4]  0 0 2

Enter the MAX matrix
      a b c
P[0]  7 3 5
P[1]  3 2 2
P[2]  9 2 0
P[3]  2 2 2
P[4]  4 3 3

 < P[1]  P[3]  P[4]  P[0]  P[2] >
```