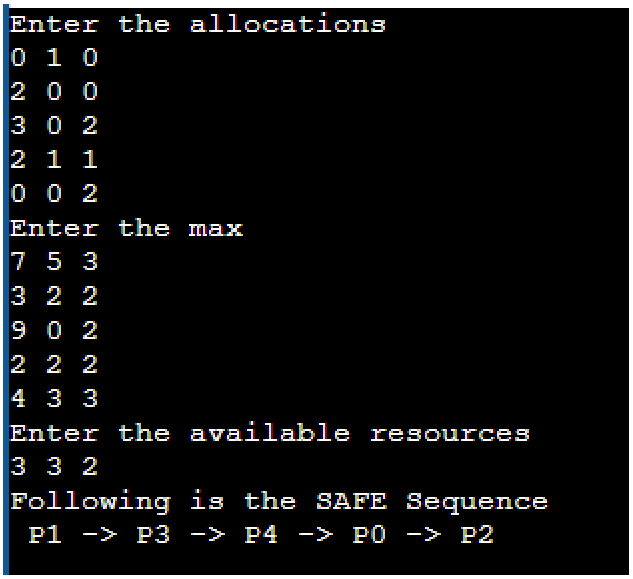
bankers algorithm

```
#include <stdio.h>
int alloc[10][10],avail[3],need[10][10],max[10][10];
int n=5,m=3;
void banker(){
    int f[n], ans[n], ind = 0;
    for (int k = 0; k < n; k++) {
        f[k] = 0;
    }
    int need[n][m];
    for (int i = 0; i < n; i++) {
        for (int j = 0; j < m; j++)
            need[i][j] = max[i][j] - alloc[i][j];
    }
    int y = 0;
    for (int k = 0; k < 5; k++) {
        for (int i = 0; i < n; i++) {
            if (f[i] == 0) {
                int flag = 0;
                for (int j = 0; j < m; j++) {
                    if (need[i][j] > avail[j]){
                        flag = 1;
                        break;
                    }
                }
                if (flag == 0) {
                    ans[ind++] = i;
                    for (y = 0; y < m; y++)
                        avail[y] += alloc[i][y];
                    f[i] = 1;
                }
            }
        }
    }
    int flag = 1;
    for(int i=0;i<n;i++){
        if(f[i]==0){
            flag=0;
            printf("The following system is not safe");
            break;
        }
    }
    if(flag==1){
        printf("Following is the SAFE Sequence\n");
        for (int i = 0; i < n - 1; i++)
            printf(" P%d ->", ans[i]);
        printf(" P%d", ans[n - 1]);
    }
}
int main(){
    int c,pro,res[3];
    printf("Enter the allocations\n");
    int i, j, k;
    for(i=0;i<5;i++){
        for(j=0;j<3;j++){
            scanf("%d",&alloc[i][j]);
        }
    }
    printf("Enter the max\n");
    for(i=0;i<5;i++){
        for(j=0;j<3;j++){
            scanf("%d",&max[i][j]);
        }
    }
    printf("Enter the available resources\n");
    for(int i=0;i<3;i++)
        scanf("%d",&avail[i]);
    banker();
    return (0);
}
```

OUTPUT:



```
Enter the allocations
0 1 0
2 0 0
3 0 2
2 1 1
0 0 2
Enter the max
7 5 3
3 2 2
9 0 2
2 2 2
4 3 3
Enter the available resources
3 3 2
Following is the SAFE Sequence
 P1 -> P3 -> P4 -> P0 -> P2
```