To Simulate bankers algorithm for DeadLock Avoidance (Banker's Algorithm)

```
#include <stdio.h>

int main() {

    int n, m, all[10][10], req[10][10], ava[10], need[10][10]; int i,
    j, k, flag[10], prev[10], c, count = 0;

    printf("Enter number of processes and number of resources required \n");
    scanf("%d %d", &n, &m);

    printf("Enter total number of required resources %d for each process\n", n); for (i =
    0; i < n; i++)
        for (j = 0; j < m; j++)
            scanf("%d", &req[i][j]);

    printf("Enter number of allocated resources %d for each process\n", n); for (i =
    0; i < n; i++)
        for (j = 0; j < m; j++)
            scanf("%d", &all[i][j]);

    printf("Enter number of available resources \n");
    for (i = 0; i < m; i++) scanf("%d", &ava[i]);

    for (i = 0; i < n; i++)
        for (j = 0; j < m; j++)
            need[i][j] = req[i][j] - all[i][j];

    for (i = 0; i < n; i++) flag[i] =
        1;

    k = 1;

    while (k) {
        k = 0;
```

```
        for (i = 0; i < n; i++) { if
            (flag[i]) { c = 0; for (j = 0; j
            < m; j++) {
                    if (need[i][j] <= ava[j]) {
                        c++;
                    }
                }
                if (c == m) {
                    printf("Resouces can be allocated to Process:%d and available resources
are: ", (i + 1));
                    for (j = 0; j < m; j++) {
                        printf("%d ", ava[j]);
                    }
                    printf("\n");

                    for (j = 0; j < m; j++) {
                        ava[j] += all[i][j]; all[i][j]
                        = 0;
                    }

                    flag[i] = 0; count++;
                }
            }
        }

        for (i = 0; i < n; i++) {
            if (flag[i] != prev[i]) { k
                = 1;
                break;
            }
        }

        for (i = 0; i < n; i++) { prev[i] =
            flag[i];
        }
    }
    if (count == n) {
```

```
        printf("\nSystem is in safe mode ");
    } else { printf("\nSystem is not in safe mode deadlock occurred
        \n");
    }
    return 0;
}
```