OS LAB MANUAL (CS23431)

Roll No:230701234

EX.NO:10(A)

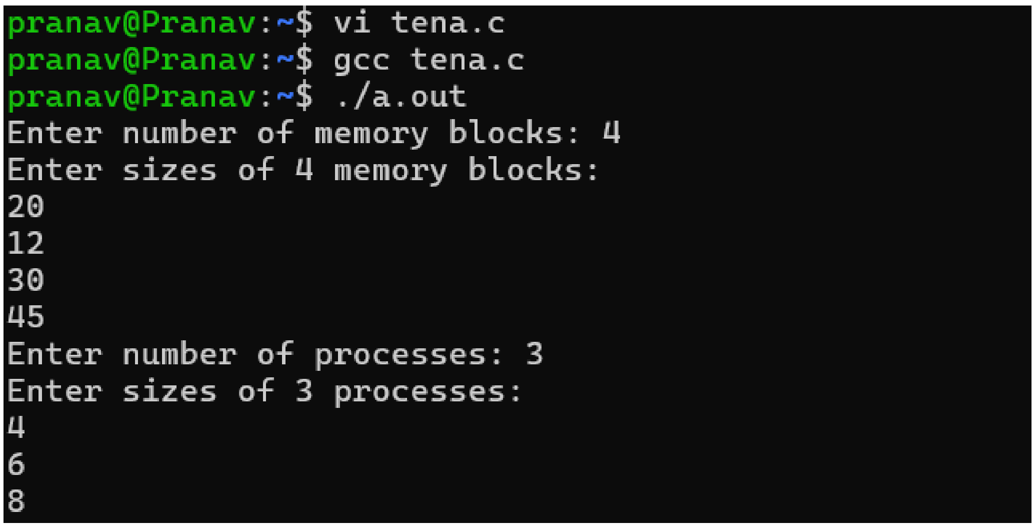
BEST FIT

Aim: To implement Best Fit memory allocation technique using Python.

Program:

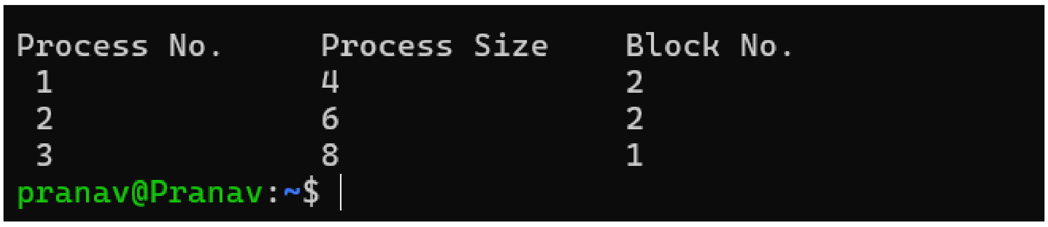
```
#include <stdio.h>

int main() {
    int m, n, i, j;

    printf("Enter number of memory blocks: ");
    scanf("%d", &m);

    int blockSize[m];

    printf("Enter sizes of %d memory blocks:\n", m);
    for (i = 0; i < m; i++) {
        scanf("%d", &blockSize[i]);
    }

    printf("Enter number of processes: ");
    scanf("%d", &n);

    int processSize[n];

    printf("Enter sizes of %d processes:\n", n);
    for (i = 0; i < n; i++) {
        scanf("%d", &processSize[i]);
    }

    int allocation[n];
    for (i = 0; i < n; i++)
        allocation[i] = -1;



    for (i = 0; i < n; i++) {
        int bestIdx = -1;
        for (j = 0; j < m; j++) {
            if (blockSize[j] >= processSize[i]) {
                if (bestIdx == -1 || blockSize[j] < blockSize[bestIdx])
                    bestIdx = j;
            }
        }

        if (bestIdx != -1) {
            allocation[i] = bestIdx;
            blockSize[bestIdx] -= processSize[i];
        }
    }

    printf("\nProcess No.\tProcess Size\tBlock No.\n");
    for (i = 0; i < n; i++) {
        printf(" %d\t\t%d\t\t", i + 1, processSize[i]);
        if (allocation[i] != -1)
            printf("%d\n", allocation[i] + 1);
        else
            printf("Not Allocated\n");
    }

    return 0;
}
```

Input:



```
pranav@Pranav:~$ vi tena.c
pranav@Pranav:~$ gcc tena.c
pranav@Pranav:~$ ./a.out
Enter number of memory blocks: 4
Enter sizes of 4 memory blocks:
20
12
30
45
Enter number of processes: 3
Enter sizes of 3 processes:
4
6
8
```

Output:



```
Process No.      Process Size     Block No.
 1               4                2
 2               6                2
 3               8                1
pranav@Pranav:~$
```