OS LAB MANUAL (CS23431)

Roll No:230701234

EX.NO:10(B)

FIRST FIT

Aim: To write a C program for implementation memory allocation methods for fixed partition using first fit.

Program:

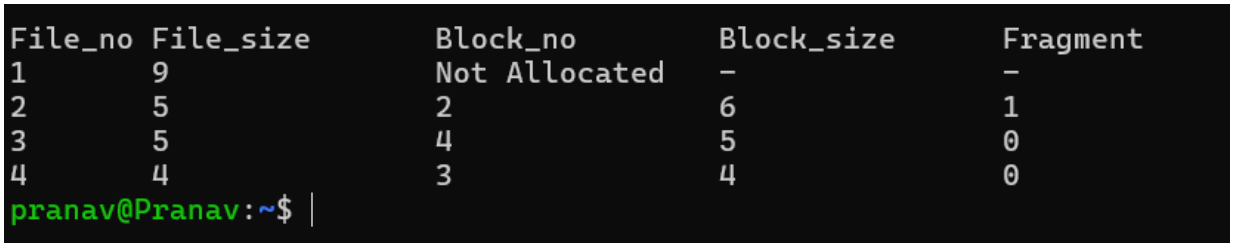
```
#include <stdio.h>

#define MAX 25


int main() {
   int frag[MAX], b[MAX], f[MAX], i, j, nb, nf;
   static int bf[MAX], ff[MAX];

   printf("Enter the number of blocks: ");
   scanf("%d", &nb);

   printf("Enter the number of files: ");
   scanf("%d", &nf);

   for (i = 0; i < nb; i++) {
      printf("Block %d: ", i + 1);
      scanf("%d", &b[i]);
      bf[i] = 0; // mark block as free
   }

   for (i = 0; i < nf; i++) {
      printf("File %d: ", i + 1);
      scanf("%d", &f[i]);
   }


   for (i = 0; i < nf; i++) {
```

```
        for (j = 0; j < nb; j++) {
            if (bf[j] == 0 && b[j] >= f[i]) {
                ff[i] = j;
                frag[i] = b[j] - f[i];
                bf[j] = 1; // mark block as allocated
                break;
            }
        }
    }

    printf("\nFile_no\tFile_size\tBlock_no\tBlock_size\tFragment\n");
    for (i = 0; i < nf; i++) {
        printf("%d\t%d\t\t", i + 1, f[i]);
        if (ff[i] != 0 || (ff[i] == 0 && b[0] >= f[i])) {
            printf("%d\t\t%d\t\t%d", ff[i] + 1, b[ff[i]], frag[i]);
        } else {
            printf("Not Allocated\t-\t\t-");
        }
        printf("\n");
    }

    return 0;
}
```

Input:

```
pranav@Pranav:~$ vi tenb.c
pranav@Pranav:~$ vi tenb.c
pranav@Pranav:~$ vi TENB.c
pranav@Pranav:~$ gcc TENB.c
pranav@Pranav:~$ ./a.out
Enter the number of blocks: 4
Enter the number of files: 4
Block 1: 2
Block 2: 6
Block 3: 4
Block 4: 5
File 1: 9
File 2: 5
File 3: 5
File 4: 4
```

Output:


File_no File_size Block_no Block_size Fragment
1 9 Not Allocated - -
2 5 2 6 1
3 5 4 5 0
4 4 3 4 0
pranav@Pranav:~$