

Operating System – CS23431

Ex 10b)	First Fit
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Aim:

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

Algorithm:

1. Define the max as 25.
- 2: Declare the variable frag[max],b[max],f[max],i,j,nb,nf,temp, highest=0, bf[max],ff[max]. 3: Get the number of blocks,files,size of the blocks using for loop.
- 4: In for loop check bf[j]!=1, if so temp=b[j]-f[i]
- 5: Check highest

Program Code:

```
#include <stdio.h>

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

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

    int bsize[n], fill[n];
    printf("Enter Block Sizes:\n");
    for (i = 0; i < n; i++) {
        printf("B%d: ", i + 1);
        scanf("%d", &bsize[i]);
        fill[i] = 0;
    }

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

    int psize[p], pblock[p];

    for (i = 0; i < p; i++) {
        printf("P%d: ", i);
        scanf("%d", &psize[i]);
        pblock[i] = -1;
    }
}
```

```

// First Fit Allocation
for (i = 0; i < p; i++) {
    for (j = 0; j < n; j++) {
        if (psize[i] <= bsize[j] && fill[j] == 0) {
            fill[j] = 1;
            pblock[i] = j; // save block index
            break;
        }
    }
}

// Output Result
printf("\n%-12s %-14s %-12s %-12s\n", "Process No.", "Process Size", "Block Size", "Block ID");
printf("-----\n");

for (i = 0; i < p; i++) {
    if (pblock[i] != -1) {
        printf("%-12d %-14d %-12d %-12d\n", i + 1, psize[i], bsize[pblock[i]], pblock[i] + 1);
    } else {
        printf("%-12d %-14d %-12s %-12s\n", i + 1, psize[i], "NIL", "Not Allocated");
    }
}

return 0;
}

```

Output:

```

C:\Users\kambm\OneDrive\Desktop\Madhumitha\sem IV\OS Assignment\Final version>firstfit.exe
Enter number of blocks: 4
Enter Block Sizes:
B1: 5
B2: 8
B3: 4
B4: 10
Enter number of processes: 3
P0: 1
P1: 4
P2: 7

```

Process No.	Process Size	Block Size	Block ID
1	1	5	1
2	4	8	2
3	7	10	4

```

C:\Users\kambm\OneDrive\Desktop\Madhumitha\sem IV\OS Assignment\Final version>

```

Result: Thus, the program was executed successfully.