EX 10 Best Fit - Memory Allocation

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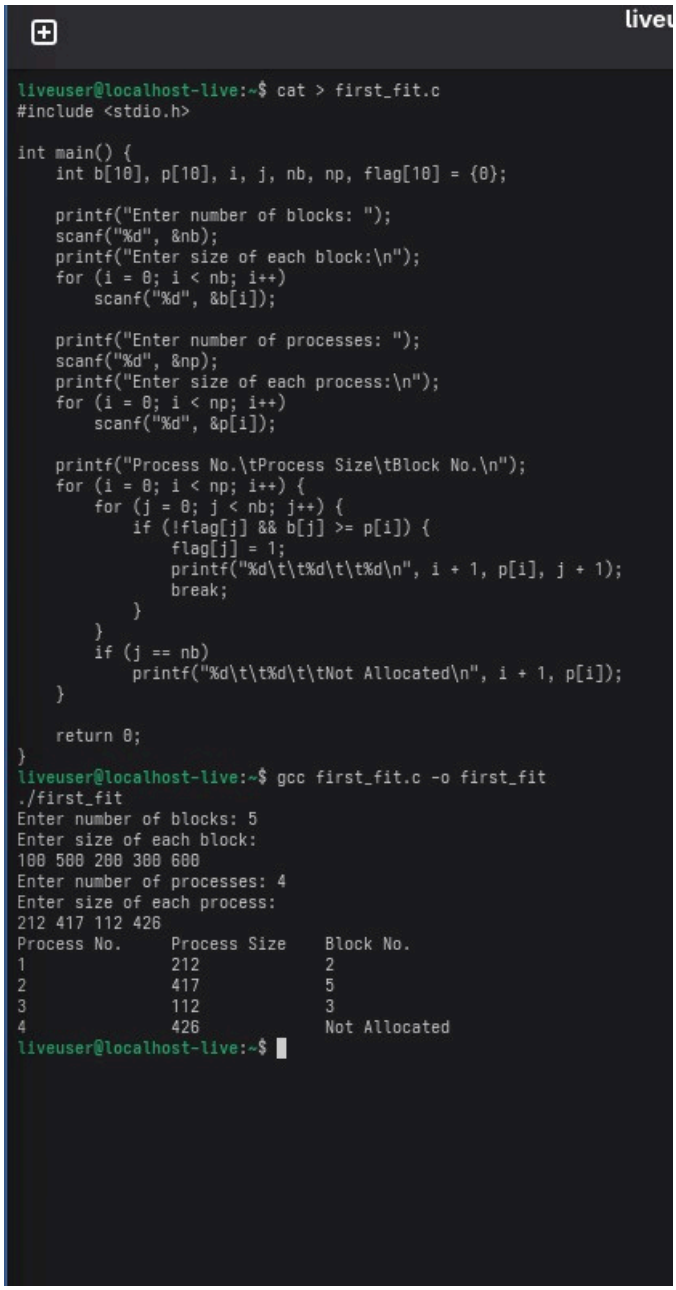
liveuser@localhost-live:~

```
liveuser@localhost-live:~$ cat > best_fit.c
#include <stdio.h>

int main() {
    int blockSize[10], processSize[10], blockNo[10];
    int i, j, nb, np;

    printf("Enter number of blocks: ");
    scanf("%d", &nb);
    printf("Enter size of each block:\n");
    for (i = 0; i < nb; i++)
        scanf("%d", &blockSize[i]);

    printf("Enter number of processes: ");
    scanf("%d", &np);
    printf("Enter size of each process:\n");
    for (i = 0; i < np; i++)
        scanf("%d", &processSize[i]);

    for (i = 0; i < np; i++) {
        int bestIdx = -1;
        for (j = 0; j < nb; j++) {
            if (blockSize[j] >= processSize[i]) {
                if (bestIdx == -1 || blockSize[j] < blockSize[bestIdx])
                    bestIdx = j;
            }
        }
        if (bestIdx != -1) {
            blockSize[bestIdx] -= processSize[i];
            blockNo[i] = bestIdx + 1;
        } else {
            blockNo[i] = -1;
        }
    }

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

    return 0;
}
```

```
liveuser@localhost-live:~$ gcc best_fit.c -o best_fit
./best_fit
Enter number of blocks: 5
Enter size of each block:
100
500
200
300
600
Enter number of processes: 4
Enter size of each process:
212
417
112
426
Process No.     Process Size    Block No.
1               212             4
2               417             2
3               112             3
4               426             5
```

First Fit (Memory Allocation)



```
liveuser@localhost-live:~$ cat > first_fit.c
#include <stdio.h>

int main() {
    int b[10], p[10], i, j, nb, np, flag[10] = {0};

    printf("Enter number of blocks: ");
    scanf("%d", &nb);
    printf("Enter size of each block:\n");
    for (i = 0; i < nb; i++)
        scanf("%d", &b[i]);

    printf("Enter number of processes: ");
    scanf("%d", &np);
    printf("Enter size of each process:\n");
    for (i = 0; i < np; i++)
        scanf("%d", &p[i]);

    printf("Process No.\tProcess Size\tBlock No.\n");
    for (i = 0; i < np; i++) {
        for (j = 0; j < nb; j++) {
            if (!flag[j] && b[j] >= p[i]) {
                flag[j] = 1;
                printf("%d\t\t%d\t\t%d\n", i + 1, p[i], j + 1);
                break;
            }
        }
        if (j == nb)
            printf("%d\t\t%d\t\tNot Allocated\n", i + 1, p[i]);
    }

    return 0;
}
liveuser@localhost-live:~$ gcc first_fit.c -o first_fit
./first_fit
Enter number of blocks: 5
Enter size of each block:
100 500 200 300 600
Enter number of processes: 4
Enter size of each process:
212 417 112 426
Process No.     Process Size    Block No.
1               212             2
2               417             5
3               112             3
4               426             Not Allocated
liveuser@localhost-live:~$
```