Academic Year: 2023-24 Sem: III
Sub: Operating Systems Laboratory SAP ID: 60003220131

EXPERIMENT NO. 05

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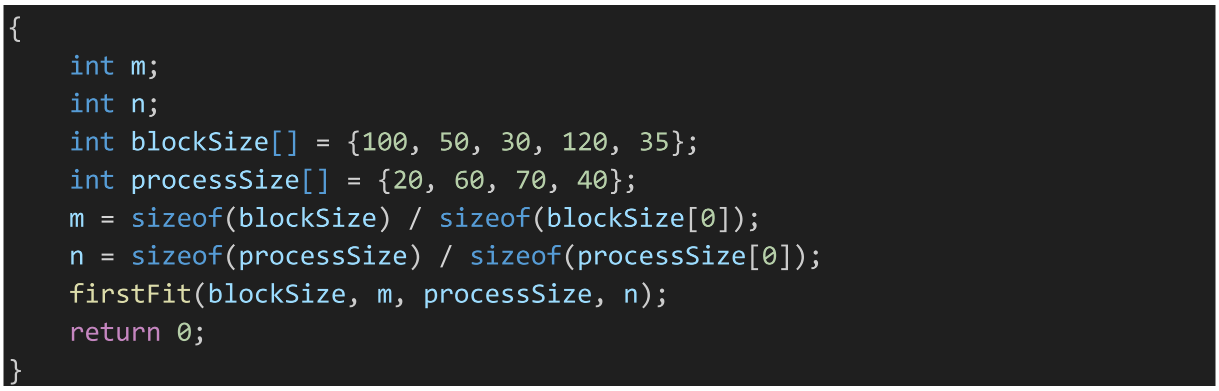
BRANCH: Information Technology
BATCH: 1

FIRST FIT

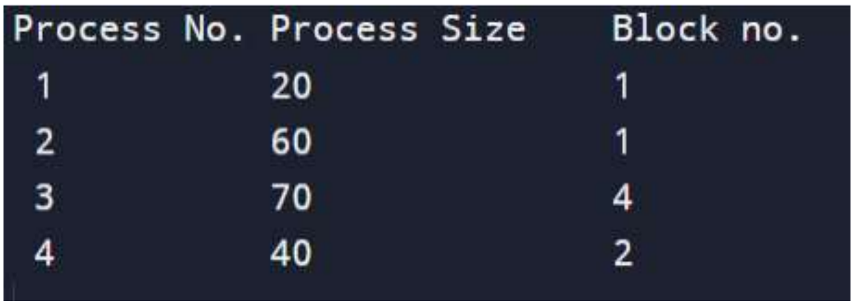
```c
#include <stdio.h>
void firstFit(int blockSize[], int m, int processSize[], int n)
{
    int i, j;
    int allocation[n];
    for (i = 0; i < n; i++)
    {
        allocation[i] = -1;
    }
    for (i = 0; i < n; i++)
    {
        for (j = 0; j < m; j++)
        {
            if (blockSize[j] >= processSize[i])
            {
                allocation[i] = j;
                blockSize[j] -= processSize[i];
                break;
            }
        }
    }

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

int main()
```



```
{
    int m;
    int n;
    int blockSize[] = {100, 50, 30, 120, 35};
    int processSize[] = {20, 60, 70, 40};
    m = sizeof(blockSize) / sizeof(blockSize[0]);
    n = sizeof(processSize) / sizeof(processSize[0]);
    firstFit(blockSize, m, processSize, n);
    return 0;
}
```



```
Process No. Process Size     Block no.
 1          20               1
 2          60               1
 3          70               4
 4          40               2
```

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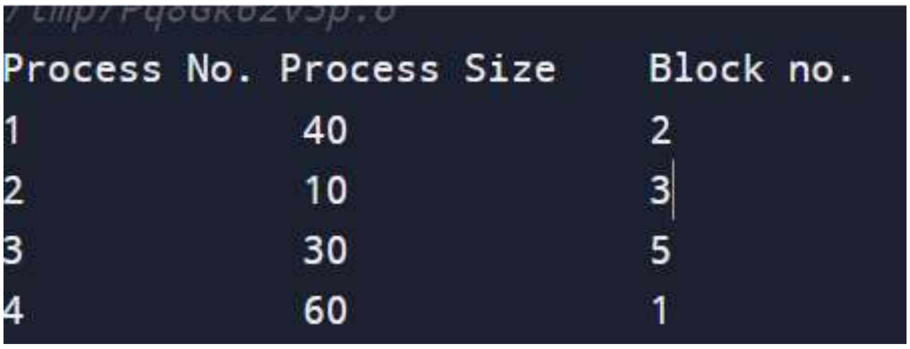
BEST FIT

```c
#include <stdio.h>
void implimentBestFit(int blockSize[], int blocks, int processSize[], int 
proccesses)
{
    int allocation[proccesses];
    int occupied[blocks];
    for (int i = 0; i < proccesses; i++)
    {
        allocation[i] = -1;
    }

    for (int i = 0; i < blocks; i++)
    {
        occupied[i] = 0;
    }
    for (int i = 0; i < proccesses; i++)
    {

        int indexPlaced = -1;
        for (int j = 0; j < blocks; j++)
        {
            if (blockSize[j] >= processSize[i] && !occupied[j])
            {

                if (indexPlaced == -1)
                    indexPlaced = j;

                else if (blockSize[j] < blockSize[indexPlaced])
                    indexPlaced = j;
            }
        }

        if (indexPlaced != -1)
        {

            allocation[i] = indexPlaced;
            occupied[indexPlaced] = 1;
        }
    }

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

int main()
{
    int blockSize[] = {100, 50, 30, 120, 35};
    int processSize[] = {40, 10, 30, 60};
    int blocks = sizeof(blockSize) / sizeof(blockSize[0]);
    int proccesses = sizeof(processSize) / sizeof(processSize[0]);
    implimentBestFit(blockSize, blocks, processSize, proccesses);
    return 0;
}
```



```
/tmp/Pq8Gk62v5p.o
Process No. Process Size    Block no.
1           40              2
2           10              3
3           30              5
4           60              1
```

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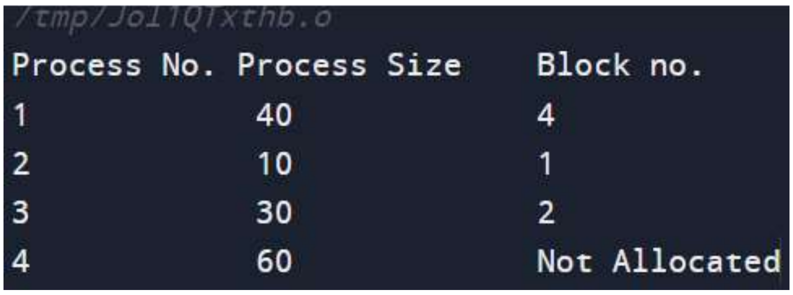
WORST FIT

```c
#include <stdio.h>
void implimentWorstFit(int blockSize[], int blocks, int processSize[], int
processes)
{
    int allocation[processes];
    int occupied[blocks];
    for (int i = 0; i < processes; i++)
    {
        allocation[i] = -1;
    }
    for (int i = 0; i < blocks; i++)
    {
        occupied[i] = 0;
    }
    for (int i = 0; i < processes; i++)
    {
        int indexPlaced = -1;
        for (int j = 0; j < blocks; j++)
        {
            if (blockSize[j] >= processSize[i] && !occupied[j])
            {
                if (indexPlaced == -1)
                    indexPlaced = j;

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

{
    int blockSize[] = {100, 50, 30, 120, 35};
    int processSize[] = {40, 10, 30, 60};
    int blocks = sizeof(blockSize) / sizeof(blockSize[0]);
    int processes = sizeof(processSize) / sizeof(processSize[0]);
    implimentWorstFit(blockSize, blocks, processSize, processes);
    return 0;
}
```



```
/tmp/Jo1lQIxthb.o
Process No. Process Size    Block no.
1            40              4
2            10              1
3            30              2
4            60              Not Allocated
```