EXPERIMENT-23

Construct a C program to implement the first fit algorithm of memory management.

AIM:-

To develop a C program to implement the First Fit algorithm for memory management, which allocates the first available memory block that is large enough to accommodate a process.

ALGORITHM:-

☐ **Initialize Memory Blocks**:

- Input the total memory blocks and their sizes.

☐ **Input Process Requirements**:

- Take the number of processes and their respective memory requirements.

☐ **Allocate Memory Using First Fit**:

- For each process:

  - Search for the first memory block that can accommodate the process.

  - Allocate the block if found and reduce the block size accordingly.

☐ **Output Results**:

- Display the allocation of processes to memory blocks.

- If a process cannot be allocated, indicate that.

CODE:-

```
#include <stdio.h>


void firstFit(int blockSize[], int m, int processSize[], int n) {
```

```c
    int allocation[n];

    for (int i = 0; i < n; i++)

        allocation[i] = -1;


    for (int i = 0; i < n; i++) {

        for (int j = 0; j < m; j++) {

            if (blockSize[j] >= processSize[i]) {

                allocation[i] = j;

                blockSize[j] -= processSize[i];

                break;

            }

        }

    }


    printf("Process No.\tProcess Size\tBlock No.\n");

    for (int 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");

    }

}
```

```
int main() {

    int blockSize[] = {100, 500, 200, 300, 600};

    int processSize[] = {212, 417, 112, 426};

    int m = sizeof(blockSize) / sizeof(blockSize[0]);

    int n = sizeof(processSize) / sizeof(processSize[0]);


    firstFit(blockSize, m, processSize, n);

    return 0;

}
```
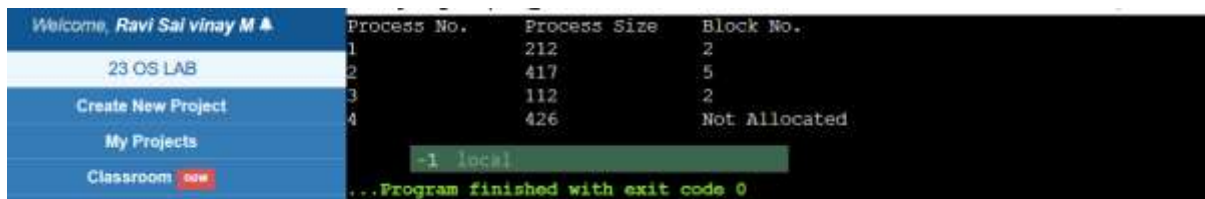
OUTPUT:-

RESULT:-

The program successfully implemented the First Fit algorithm for memory management, allocating memory blocks in the order they appeared in the list. Processes that couldn't fit were marked as "Not Allocated."