Experiment:23-Construct a C program to implement the first fit algorithm of memory management.

Aim:

To implement the First Fit memory allocation algorithm to allocate processes to the first suitable memory block.

Procedure:

1. **Input**:

    o Array of block sizes.

    o Array of process sizes.

2. **First Fit Allocation**:

    o For each process, search through the blocks sequentially to find the first block that can accommodate the process.

    o Allocate the block to the process and reduce the block size by the size of the process.

    o If no suitable block is found, mark the process as "Not Allocated".

3. **Output**:

    o Display the allocation of blocks to processes, showing the process number, process size, and allocated block number. If a process is not allocated, display "Not Allocated".

Code

```
#include <stdio.h>

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

```c
            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", allocation[i] + 1);

        } else {

            printf("Not Allocated");

        }
        printf("\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:

Output

Clear

```
Process No. Process Size    Block no.
1       212     2
2       417     5
3       112     2
4       426     Not Allocated


=== Code Execution Successful ===192372048
```