

Code:

```
// Write programs to simulate the Best Fit Memory Allocation Technique.
```

```
#include <bits/stdc++.h>
```

```
using namespace std;
```

```
int main() {
```

```
    int num_blocks, num_processes;
```

```
    cout << "Enter the number of memory blocks: ";
```

```
    cin >> num_blocks;
```

```
    cout << "\nEnter the number of processes: ";
```

```
    cin >> num_processes;
```

```
    int mem_blocks[num_blocks];
```

```
    cout << "\nEnter the sizes of the memory blocks(in K): " << endl;
```

```
    for (int i = 0; i < num_blocks; i++) {
```

```
        cin >> mem_blocks[i];
```

```
    }
```

```
    int process_sizes[num_processes];
```

```
    cout << "\nEnter Sizes of the processes(in K): " << endl;
```

```
    for (int i = 0; i < num_processes; i++) {
```

```
        cin >> process_sizes[i];
```

```
    }
```

```
    bool allocation_status[num_processes];
```

```
    memset(allocation_status, false, sizeof(allocation_status));
```

```
    for (int i = 0; i < num_processes; i++) {
```

```
        int process_size = process_sizes[i];
```

```
        int best_fit_index = -1;
```

```
        int smallest_fit = INT_MAX;
```

```
        for (int j = 0; j < num_blocks; j++) {
```

```
            if (mem_blocks[j] >= process_size && mem_blocks[j] < smallest_fit) {
```

```
                best_fit_index = j;
```

```
                smallest_fit = mem_blocks[j];
```

```
            }
```

```
        }
```

```
        if (best_fit_index != -1) {
```

```
            allocation_status[i] = true;
```

```
            mem_blocks[best_fit_index] -= process_size;
```

```
        } else {
```

```
            cout << "Could not allocate memory for " << process_sizes[i] << "K"
```

```
            << endl;
```

```

    }
}

for (int i = 0; i < num_processes; i++) {
    if (allocation_status[i]) {
        cout << process_sizes[i] << "K has been allocated memory" << endl;
    } else {
        cout << process_sizes[i] << "K could not be allocated memory" << endl;
    }
}

return 0;
}

```

Sample Output:

Enter the number of memory blocks: 5

Enter the number of processes: 4

Enter the sizes of the memory blocks(in K):

100 500 200 300 600

Enter Sizes of the processes(in K):

212 417 112 426

212K has been allocated memory

417K has been allocated memory

112K has been allocated memory

426K has been allocated memory

