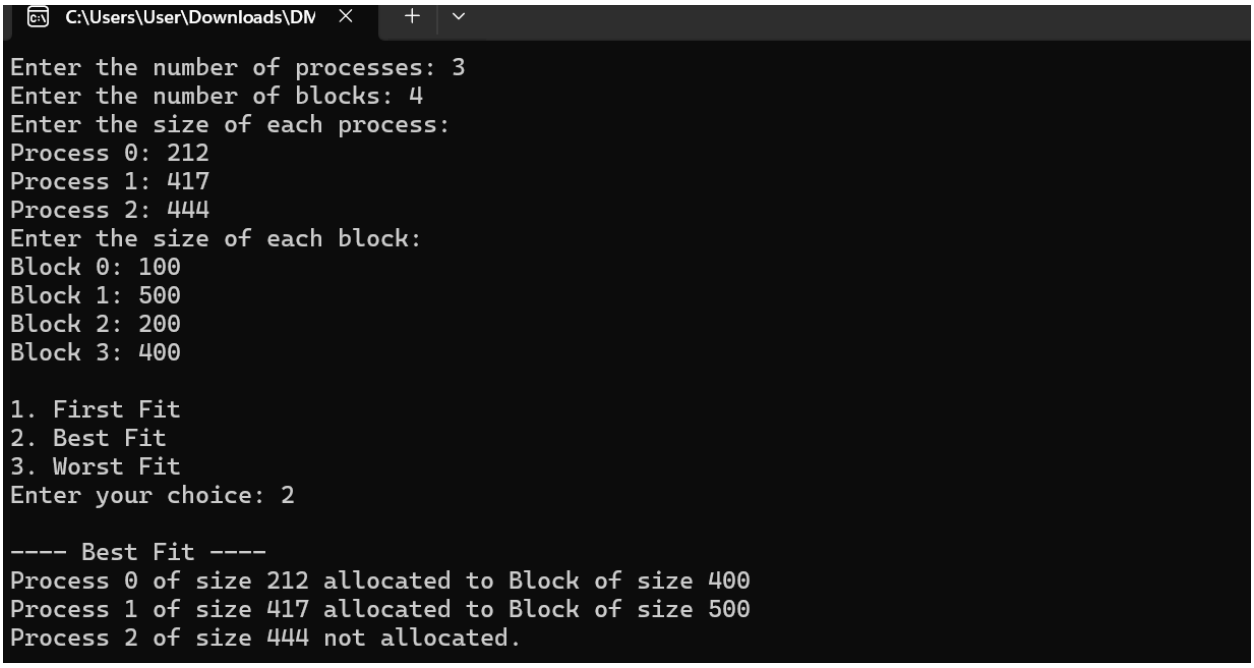
Lab-10

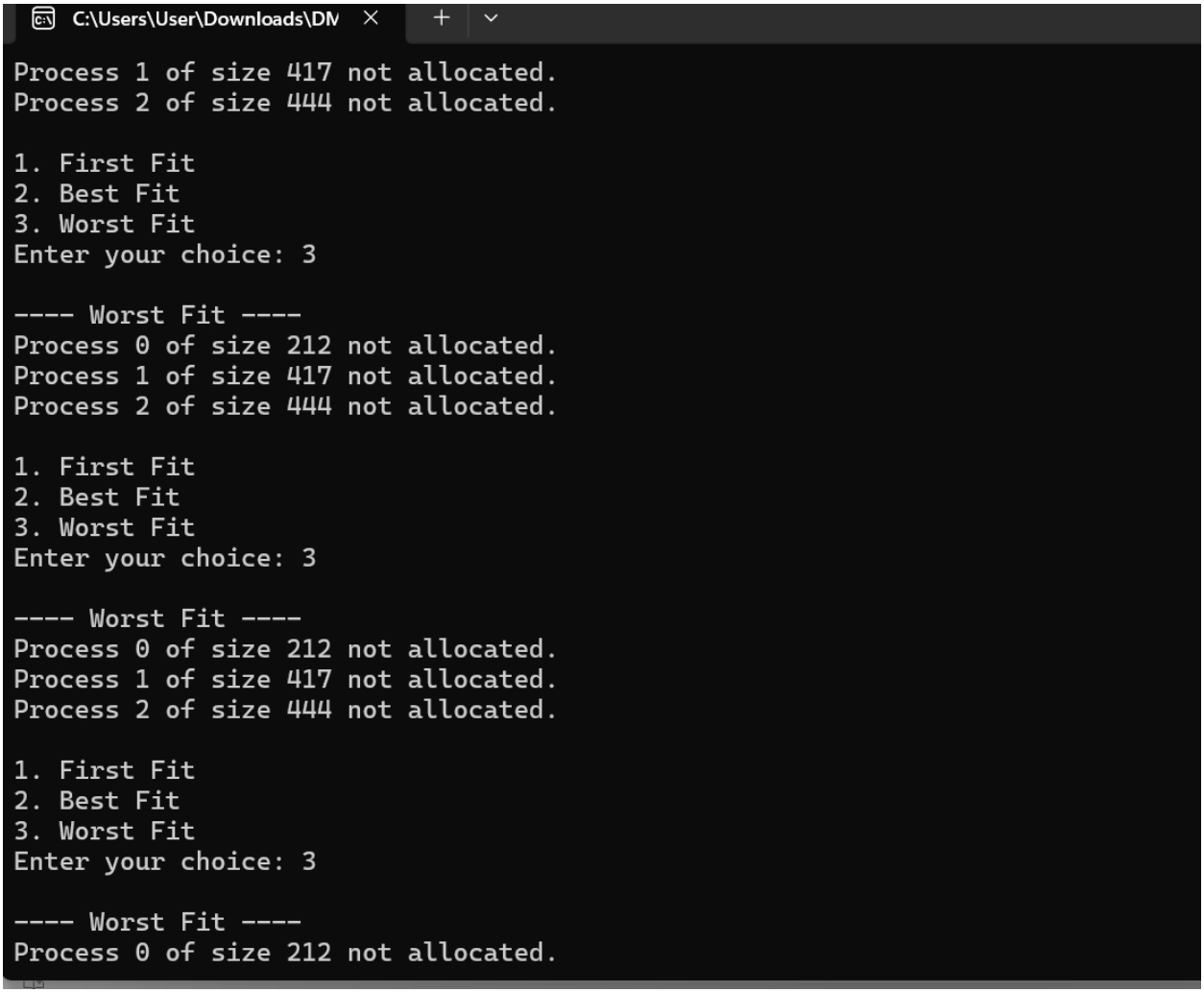
```
#include <stdio.h>

int main() {
   int p[10], np, b[10], nb, ch, c[10], d[10], alloc[10], flag[10], i, j;

   printf("Enter the number of processes: ");
   scanf("%d", &np);
   printf("Enter the number of blocks: ");
   scanf("%d", &nb);

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

   printf("Enter the size of each block:\n");
   for (j = 0; j < nb; j++) {
      printf("Block %d: ", j);
      scanf("%d", &b[j]);
      c[j] = b[j]; // copy for best fit
      d[j] = b[j]; // copy for worst fit
   }

   if (np <= nb) {
      do {
         printf("\n1. First Fit\n2. Best Fit\n3. Worst Fit\nEnter your choice: ");
         scanf("%d", &ch);

         for (i = 0; i < np; i++) flag[i] = 1; // reset flags

         switch (ch) {
         case 1: // First Fit
            printf("\n---- First Fit ----\n");
            for (i = 0; i < np; i++) {
               for (j = 0; j < nb; j++) {
                  if (p[i] <= b[j]) {
                     alloc[i] = j;
                     printf("Process %d of size %d allocated to Block %d of size %d\n", i, p[i], j, b[j]);
                     b[j] = 0;
                     flag[i] = 0;
                     break;
                  }
               }
               if (flag[i])
```

```
            printf("Process %d of size %d not allocated.\n", i, p[i]);
        }
        break;

    case 2: // Best Fit
        printf("\n---- Best Fit ----\n");
        // Sort blocks in ascending
        for (i = 0; i < nb - 1; i++)
            for (j = i + 1; j < nb; j++)
                if (c[i] > c[j]) {
                    int temp = c[i];
                    c[i] = c[j];
                    c[j] = temp;
                }
        for (i = 0; i < np; i++) {
            for (j = 0; j < nb; j++) {
                if (p[i] <= c[j]) {
                    printf("Process %d of size %d allocated to Block of size %d\n", i, p[i], c[j]);
                    c[j] = 0;
                    flag[i] = 0;
                    break;
                }
            }
            if (flag[i])
                printf("Process %d of size %d not allocated.\n", i, p[i]);
        }
        break;

    case 3: // Worst Fit
        printf("\n---- Worst Fit ----\n");
        // Sort blocks in descending
        for (i = 0; i < nb - 1; i++)
            for (j = i + 1; j < nb; j++)
                if (d[i] < d[j]) {
                    int temp = d[i];
                    d[i] = d[j];
                    d[j] = temp;
                }
        for (i = 0; i < np; i++) {
            for (j = 0; j < nb; j++) {
                if (p[i] <= d[j]) {
                    printf("Process %d of size %d allocated to Block of size %d\n", i, p[i], d[j]);
                    d[j] = 0;
                    flag[i] = 0;
                    break;
                }
            }
            if (flag[i])
```

```
                printf("Process %d of size %d not allocated.\n", i, p[i]);
            }
            break;

        default:
            printf("Invalid choice!\n");
        }
    } while (ch <= 3);
  } else {
    printf("Cannot allocate: More processes than blocks.\n");
  }

  return 0;
}
```



```
---- First Fit ----
Process 0 of size 212 allocated to Block 1 of size 500
Process 1 of size 417 not allocated.
Process 2 of size 444 not allocated.

1. First Fit
2. Best Fit
3. Worst Fit
Enter your choice: 3

---- Worst Fit ----
Process 0 of size 212 allocated to Block of size 500
Process 1 of size 417 not allocated.
Process 2 of size 444 not allocated.

1. First Fit
2. Best Fit
3. Worst Fit
Enter your choice: 3

---- Worst Fit ----
Process 0 of size 212 allocated to Block of size 400
Process 1 of size 417 not allocated.
Process 2 of size 444 not allocated.
```


C:\Users\User\Downloads\DM
Process 1 of size 417 not allocated.
Process 2 of size 444 not allocated.
1. First Fit
2. Best Fit
3. Worst Fit
Enter your choice: 3
---- Worst Fit ----
Process 0 of size 212 not allocated.
Process 1 of size 417 not allocated.
Process 2 of size 444 not allocated.
1. First Fit
2. Best Fit
3. Worst Fit
Enter your choice: 3
---- Worst Fit ----
Process 0 of size 212 not allocated.
Process 1 of size 417 not allocated.
Process 2 of size 444 not allocated.
1. First Fit
2. Best Fit
3. Worst Fit
Enter your choice: 3
---- Worst Fit ----
Process 0 of size 212 not allocated.