Operating Systems
CT-353

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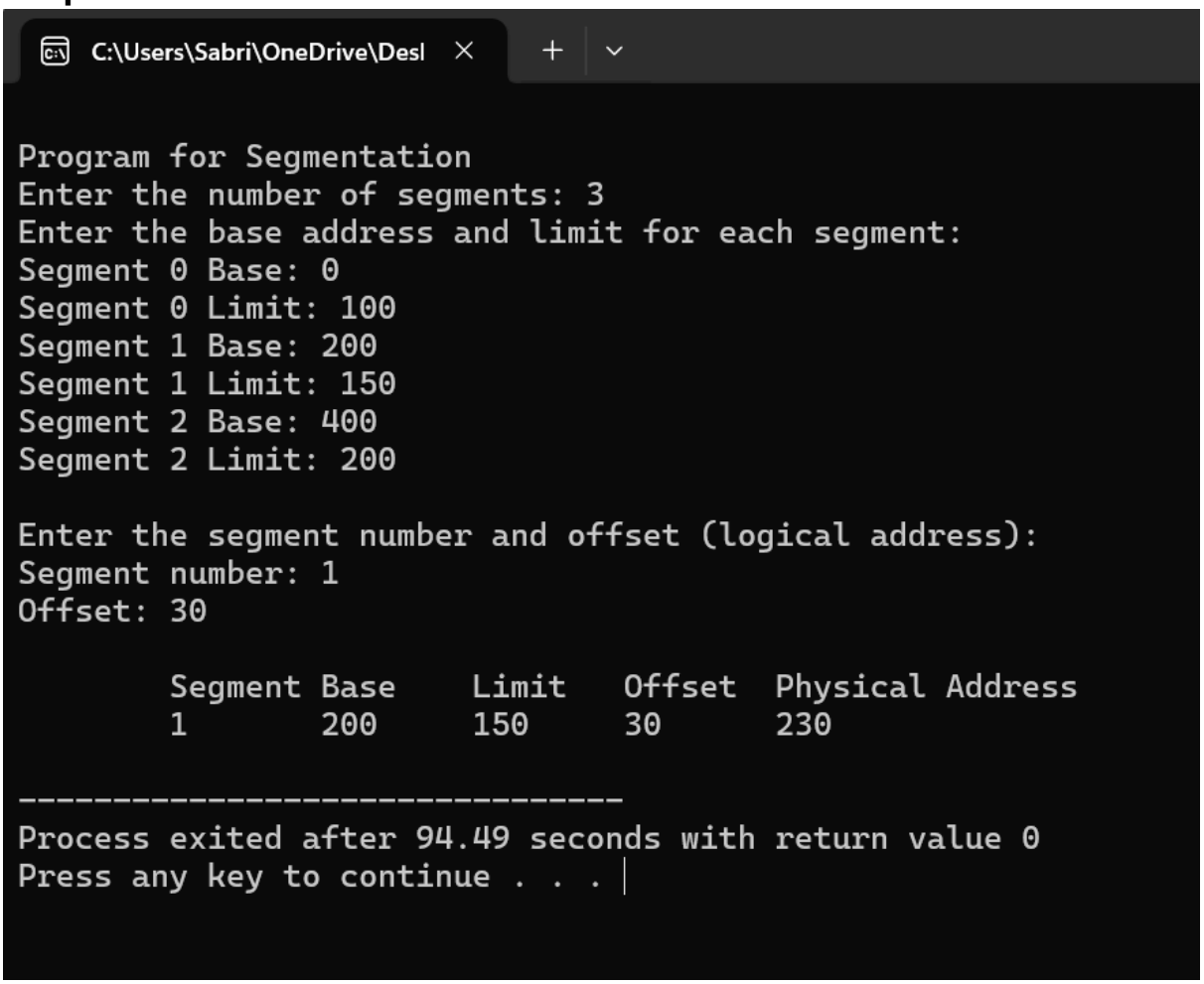
Lab 11:

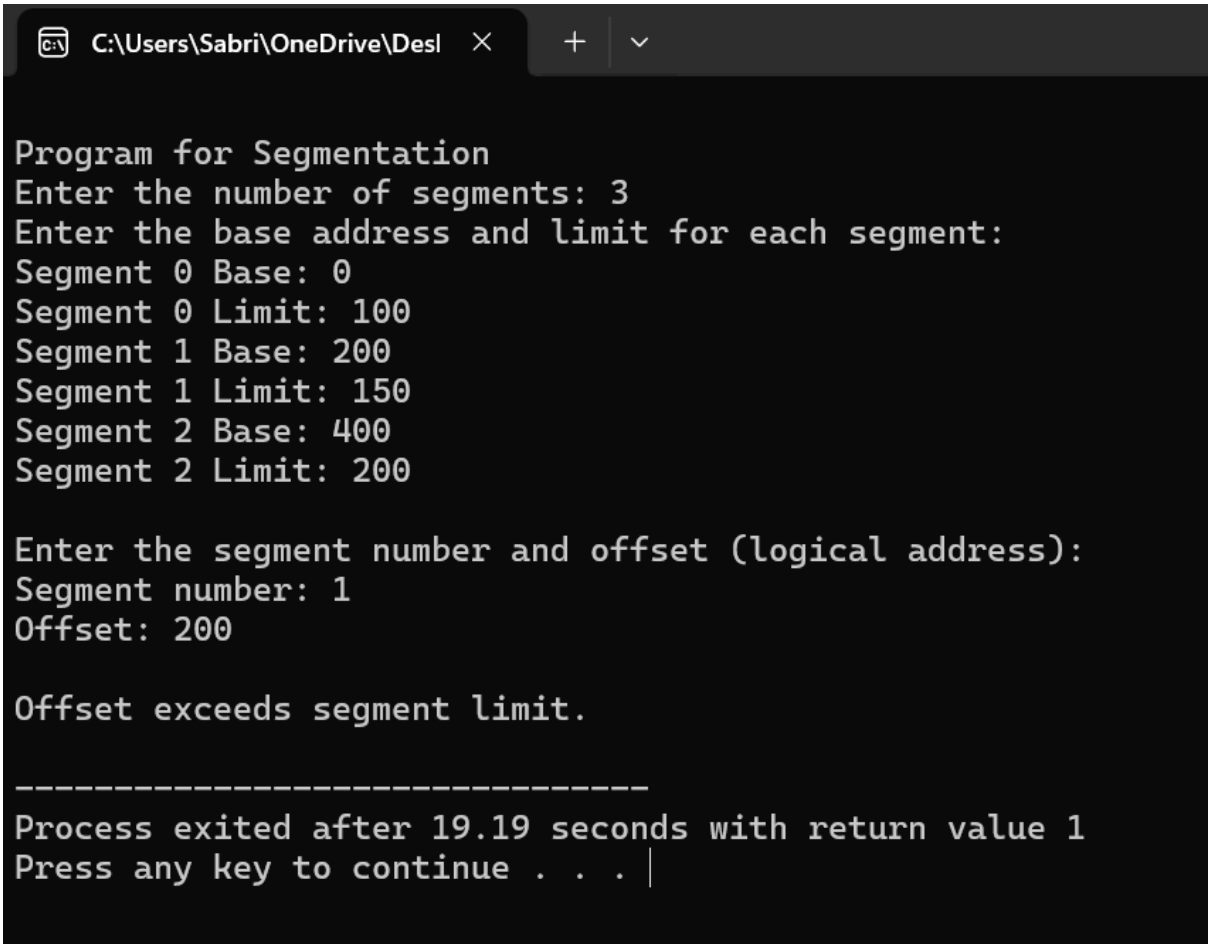
MEMORY MANAGEMENT TECHNIQUES

```
#include <stdio.h>
#include <stdlib.h>  // for exit()

int main() {
   int b[20], l[20], n, i, pa, offset, segment;

   printf("\nProgram for Segmentation\n");
   printf("Enter the number of segments: ");
   scanf("%d", &n);

   printf("Enter the base address and limit for each segment:\n");
   for (i = 0; i < n; i++) {
      printf("Segment %d Base: ", i);
      scanf("%d", &b[i]);
      printf("Segment %d Limit: ", i);
      scanf("%d", &l[i]);
   }

   printf("\nEnter the segment number and offset (logical
address):\n");
   printf("Segment number: ");
   scanf("%d", &segment);
   printf("Offset: ");
   scanf("%d", &offset);

   if (segment < 0 || segment >= n) {
      printf("\nInvalid segment number.\n");
      return 1;
   }
```

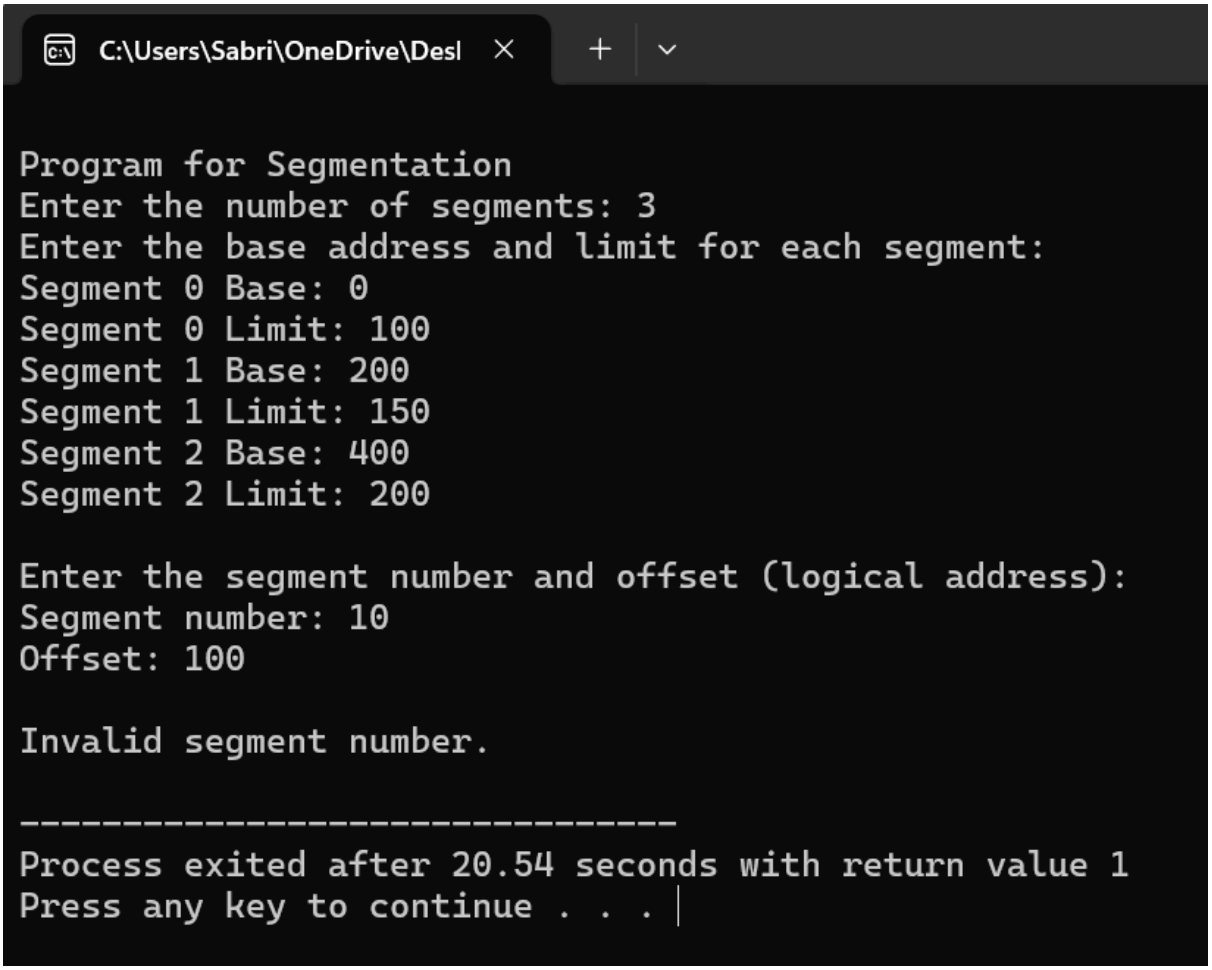
```
    if (offset < l[segment]) {
        pa = b[segment] + offset;
        printf("\n\tSegment\tBase\tLimit\tOffset\tPhysical
Address\n");
        printf("\t%d\t%d\t%d\t%d\t%d\n", segment, b[segment],
l[segment], offset, pa);
    } else {
        printf("\nOffset exceeds segment limit.\n");
        return 1;
    }

    return 0;
}
```

Output:




C:\Users\Sabri\OneDrive\Desl
Program for Segmentation
Enter the number of segments: 3
Enter the base address and limit for each segment:
Segment 0 Base: 0
Segment 0 Limit: 100
Segment 1 Base: 200
Segment 1 Limit: 150
Segment 2 Base: 400
Segment 2 Limit: 200
Enter the segment number and offset (logical address):
Segment number: 1
Offset: 200
Offset exceeds segment limit.

Process exited after 19.19 seconds with return value 1
Press any key to continue . . .


C:\Users\Sabri\OneDrive\Desl
Program for Segmentation
Enter the number of segments: 3
Enter the base address and limit for each segment:
Segment 0 Base: 0
Segment 0 Limit: 100
Segment 1 Base: 200
Segment 1 Limit: 150
Segment 2 Base: 400
Segment 2 Limit: 200
Enter the segment number and offset (logical address):
Segment number: 10
Offset: 100
Invalid segment number.

Process exited after 20.54 seconds with return value 1
Press any key to continue . . .