Course: OPERATING SYSTEMS Course code: CT-353

LAB 11

QUESTION: Write a C Program to simulate segmentation technique of memory management.

ANSWER:

```
CODE:
```

```
#include <stdio.h>
#include <stdlib.h> // for exit()
int main() {
int base[20], limit[20], n, i, pa, segment_no, offset;
printf("\nProgram for Segmentation");
printf("\nEnter 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:\n", i);
printf(" Base: ");
scanf("%d", &base[i]);
printf(" Limit: ");
scanf("%d", &limit[i]);
}
printf("\nEnter the segment number: ");
scanf("%d", &segment_no);
if(segment_no < 0 | | segment_no >= n) {
```

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```
printf("Invalid segment number!\n");
return 1;
}

printf("Enter the offset: ");
scanf("%d", &offset);

if(offset < limit[segment_no]) {
   pa = base[segment_no] + offset;
   printf("\n\tSegment No.\tBase Address\tPhysical Address\n");
   printf("\t%d\t\t%d\n", segment_no, base[segment_no], pa); }
else {
   printf("Offset exceeds segment limit.\n");
}

return 0;
}
OUTPUT:</pre>
```

Course code: CT-353

```
C:\Users\,User1\,Documents\,lab 10 os dt 006.exe
                                                                                                                                                                                                       Program for Segmentation
inter the number of segments: 3
inter the base address and limit for each segment:
 egment 0:
Base: 0
Base: 0
Limit: 100
Segment 1:
Base: 200
Limit: 150
Segment 2:
Base: 200
Limit: 150
inter the segment number: 1
inter the offset: 20
            Segment No.
                                        Base Address Physical Address
Process exited after 26.84 seconds with return value \theta aress any key to continue . . .
C\Users\User1\Documents\lab 10 os dt 006.exe
                                                                                                                                                                                              - D X
 rogram for Segmentation
 nter the number of segments: 3
nter the base address and limit for each segment:
egment 0:
 Base: 0
Limit: 100
 egment 1:
 Base: 200
Limit: 150
egment 2:
Base: 400
Limit: 200
Enter the segment number: 1
Enter the offset: 200
Offset exceeds segment limit.
 Process exited after 27.39 seconds with return value 0 bress any key to continue . . .
```