

Lab 11: MEMORY MANAGEMENT TECHNIQUES

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);
```

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```

if(segment_no < 0 || segment_no >= n) {
    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\t\t%d\n", segment_no, base[segment_no], pa);
} else {
    printf("Offset exceeds segment limit.\n");
}

return 0;
}

```

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OUTPUT:

```
C:\Users\User1\Documents\lab 10 os dt 006.exe

Program for Segmentation
Enter the number of segments: 3
Enter the base address and limit for each segment:
Segment 0:
  Base: 0
  Limit: 100
Segment 1:
  Base: 200
  Limit: 150
Segment 2:
  Base: 200
  Limit: 150

Enter the segment number: 1
Enter the offset: 20

      Segment No.   Base Address   Physical Address
      1             200             220

-----
Process exited after 26.84 seconds with return value 0
Press any key to continue . . .
```

```
C:\Users\User1\Documents\lab 10 os dt 006.exe

Program for Segmentation
Enter the number of segments: 3
Enter the base address and limit for each segment:
Segment 0:
  Base: 0
  Limit: 100
Segment 1:
  Base: 200
  Limit: 150
Segment 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
Press any key to continue . . .
```