OPERATING SYSTEMS

UE22CS242B

ASSIGNMENT-3

4th Semester, Academic Year 2023-2024

Date:22-03-2024

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ASSIGNMENT-3(question):-

Write a program to simulate Segmentation. Compute the physical address
Take as input:

1. Segment number
2. Base address
3. Segment limit

Sample input:

What are the physical addresses for the following logical addresses?

a. 0,430

b. 1,10

c. 2,500

d. 3,400

e. 4,112

Given: Segmentation table

Segment	Base	Length
0	219	600
1	2300	14
2	90	100
3	1327	580
4	1952	96

CODE:-

```
(base) vvmohith@Mohiths-MacBook-Pro CNproj % cat assign.c
#include <stdio.h>
#include <string.h>
#include <stdbool.h>

int main() {
    int segmentNumber;
    int baseAddress;
    int segmentLimit;
    int logicalAddress;
    int physicalAddress;

    bool conti = true;
    char s[25];

    while (conti) {
        // Input segment number, base address, and segment limit
        printf("Enter segment number: ");
        scanf("%d", &segmentNumber);
        printf("Enter base address: ");
        scanf("%d", &baseAddress);
        printf("Enter segment limit: ");
        scanf("%d", &segmentLimit);

        // Input logical address
        printf("Enter logical address: ");
        scanf("%d", &logicalAddress);

        // Check if logical address exceeds segment limit
        if (logicalAddress >= segmentLimit) {
            printf("Logical address exceeds segment limit.\n");
            printf("Do you want to continue (yes/no): ");
            scanf("%s", s);
            if (strcmp(s, "yes") == 0) {
                conti = true;
            } else {
                conti = false;
                break;
            }
        } else {
            // Compute physical address
            physicalAddress = baseAddress + logicalAddress;

            // Output physical address
            printf("Physical address: %d\n", physicalAddress);
            printf("Do you want to continue (yes/no): ");
            scanf("%s", s);
            if (strcmp(s, "yes") == 0) {
                conti = true;
            } else {
                conti = false;
                break;
            }
        }
    }
    return 0;
}

(base) vvmohith@Mohiths-MacBook-Pro CNproj %
```

OUTPUT:-

```
(base) vvmohith@Mohiths-MacBook-Pro CNproj % ./a.out
Enter segment number: 0
Enter base address: 219
Enter segment limit: 600
Enter logical address: 430
Physical address: 649
Do you want to continue (yes/no): yes
Enter segment number: 1
Enter base address: 2300
Enter segment limit: 14
Enter logical address: 10
Physical address: 2310
Do you want to continue (yes/no): yes
Enter segment number: 2
Enter base address: 90
Enter segment limit: 100
Enter logical address: 500
Logical address exceeds segment limit.
Do you want to continue (yes/no): yes
Enter segment number: 3
Enter base address: 1327
Enter segment limit: 580
Enter logical address: 400
Physical address: 1727
Do you want to continue (yes/no): yes
Enter segment number: 4
Enter base address: 1952
Enter segment limit: 96
Enter logical address: 112
Logical address exceeds segment limit.
Do you want to continue (yes/no): no
(base) vvmohith@Mohiths-MacBook-Pro CNproj %
```

——-THANK YOU——

Disclaimer:

- The programs and output submi;ed is duly wri;en, verified and executed by me.

- I have not copied from any of my peers nor from the external resource such as internet.

- If found plagiarized, I will abide with the disciplinary action of the University.

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