Video No.: 74

Topic Name: Static and Dynamic Scoping - Solved Question 2

Question 01:

What will be the output of the following pseudocode when parameters are passed by reference and dynamic scoping is assumed.

a) 6, 2
b) 6, 6
c) 4, 2
d) **4, 4**

```
a = 3;
void n(x){
        x = x * a;
        print(x);
}
void m(y){
        a = 1;
        a = y - a;
        n(a);
        print(a);
}
void main(){
m(a);
}
```

```
a = 3; (Step_1)
void n(x){ // *x = &a(200)
        *x = *x(=2)  *  a(=2); // &a(200) = 4
        print(x); // x = 4 (Step_3)
}
void m(y){ // y = &a(100)
        *a = 1; // local &a(200) contain 1 (Step_1)
        *a = *y - *a; //&a(200) contain
        // &a(100) - &a(200) = 2 (Step_2)
        n(&a);
        print(*a); // *a = 4 (Step_3)
}
void main(){
m(&a); // calling the address of a
}
```

Step_01:

Global a	Local a
3	1
&a=100	&a=200

Step_02:

Global a	Local a
3	2
&a=100	&a=200

Step_03:

Global a	Local a
3	4
&a=100	&a=200