

7.4 Draw the stack of activation records for the following Pascal program, showing the control and access links, after the second call to procedure **c**. Describe how the variable **x** is accessed from within **c**.

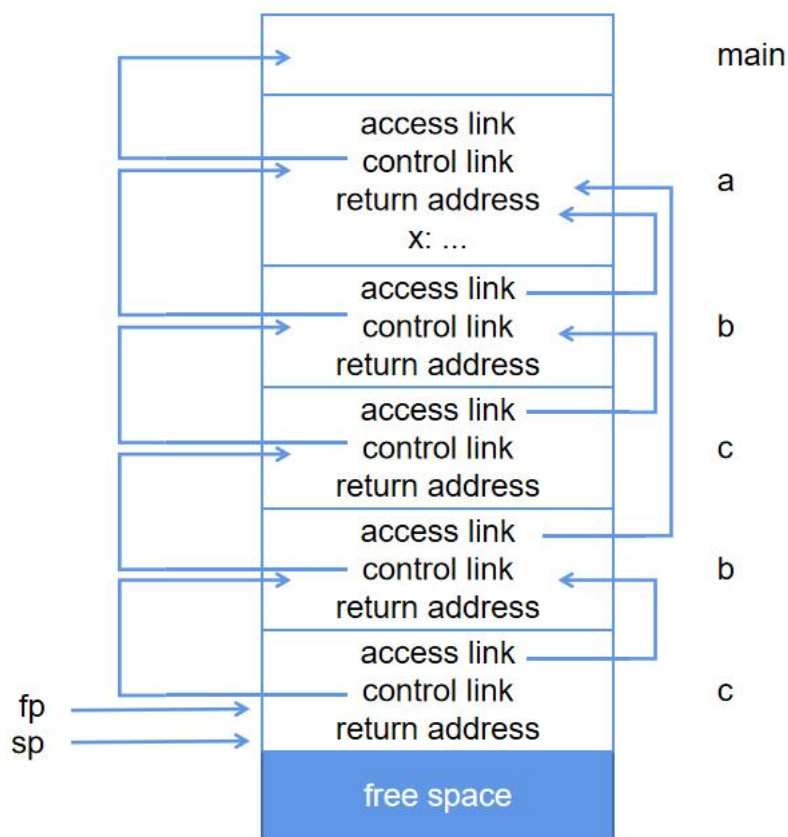
```
program env;
```

```
procedure a;  
var x: integer;
```

```
    procedure b;  
        procedure c;  
            begin  
                x:=2;  
                b;  
            end;  
        begin(*b*)  
            c;  
        end;
```

```
begin(*a*)  
    b;  
end;
```

```
begin(*main*)  
    a;  
end.
```



7.15 Give the output of the following program (written in C syntax) using the four parameter passing methods discussed in Section 7.5:

```
#include <stdio.h>
int i=0;

void p(int x, int y)
{ x += 1;
  i +=1;
  y +=1;
}

main()
{ int a[2]={1,1};
  p (a[i],a[i]);
  printf("%d %d\n", a[0],a[1]);
  return 0;
}
```

Pass by value: 1 1

Pass by reference: 3 1

Pass by value-result: 2 1

Pass by name: 2 2