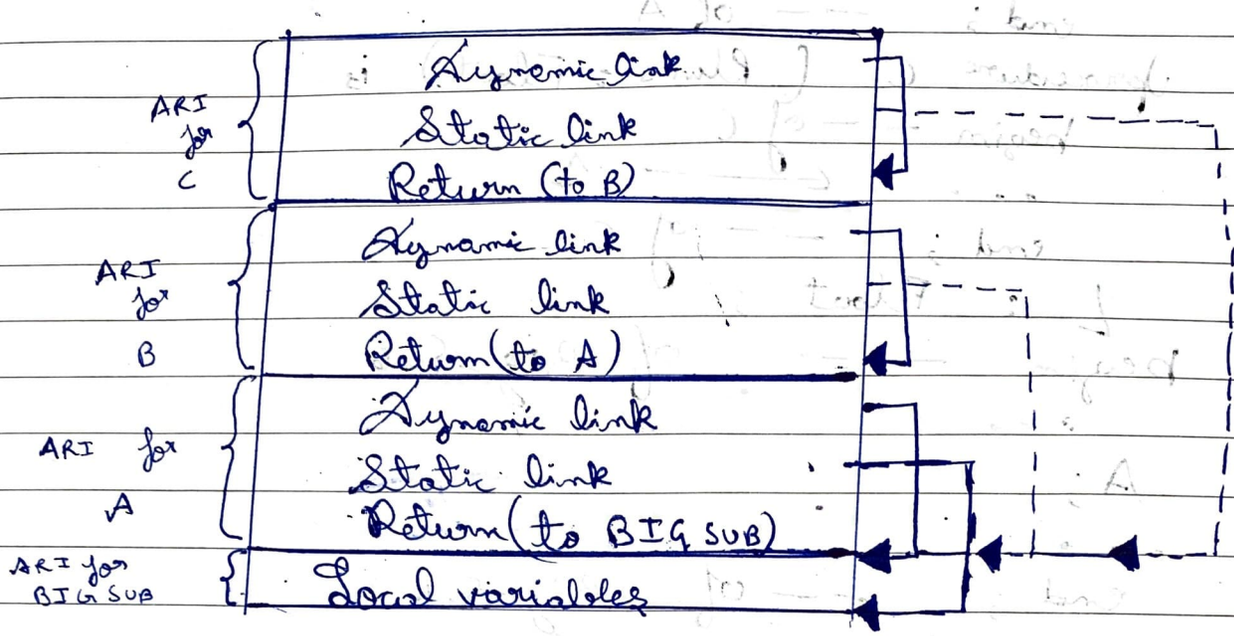
Assignment

[redacted]

Chapter 10, Problem Set

Ques. 1- Show stack with all activation record instances, including static and dynamic chains, when execution reaches position 1 in the following skeletal program. Assume Bigsub at level 1.

```
procedure Bigsub is
    procedure A is
      procedure B is
        begin -- of B
        ...                    <-- 1
        end; -- of B
      procedure C is
        begin -- of C
        ...
        B;
        ...
        end; -- of C
    begin -- of A
    ...
    C;
    ...
    end; -- of A
begin -- of Big sub
...
A;
...
end; -- of Big sub
```



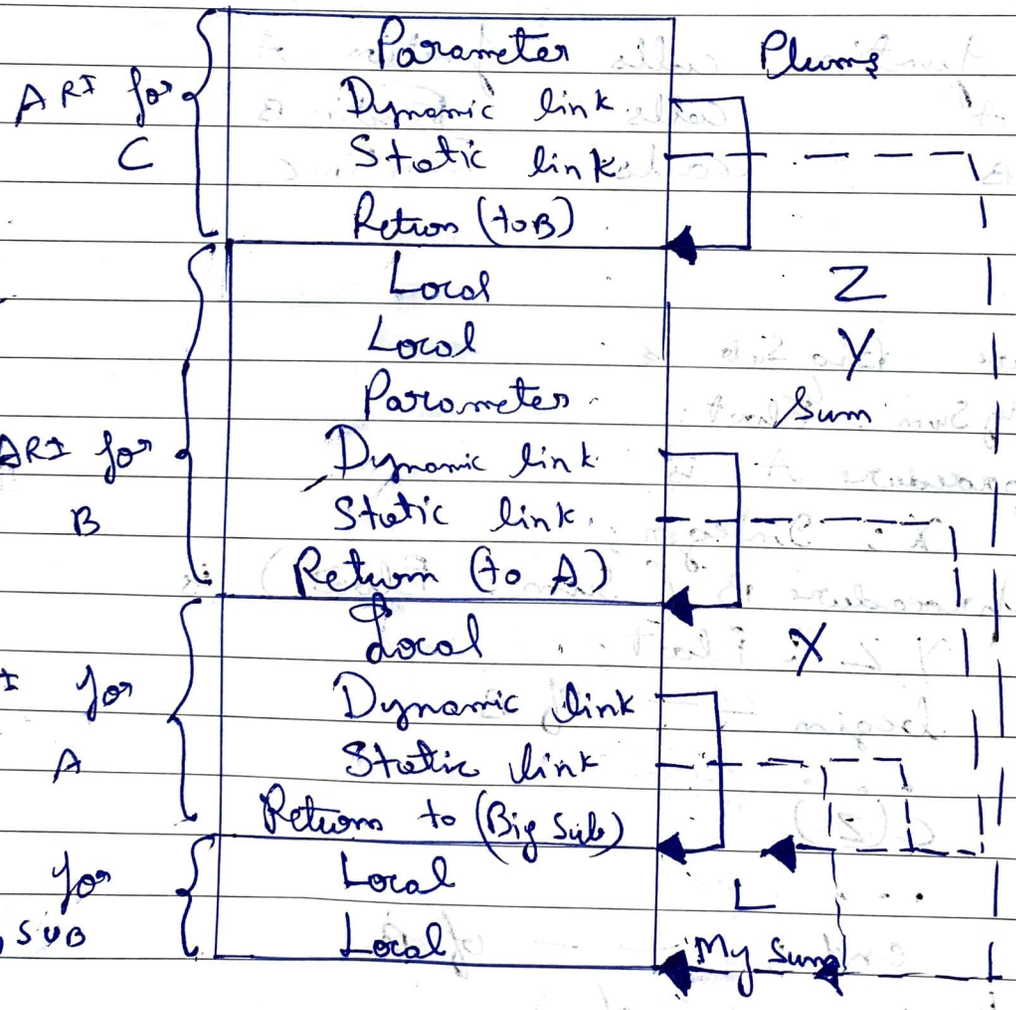
~~Big Sub calls~~

Big Sub Function calls Function A
Function A calls Function B
Function B calls Function C,

Ques. 2-

```
procedure Big Sub is
    My Sum : Float;
    procedure A is
        X : Integer;
    procedure B ( Sum : Float ) is
        Y, Z : Float;
        begin -- of B
        ...
        C(Z)
        ...
        end; -- of B
    begin -- of A
    ...
    B(X);
```

```
    ...
    end ;   -- of A
procedure C ( Plums : Float ) is
    begin -- of C
    ...  <-- 1
    end ; -- of C
L : Float ;
begin --  of Big_Sub
    ...
    A ;
    ...
    end ;  -- of Big Sub.
```



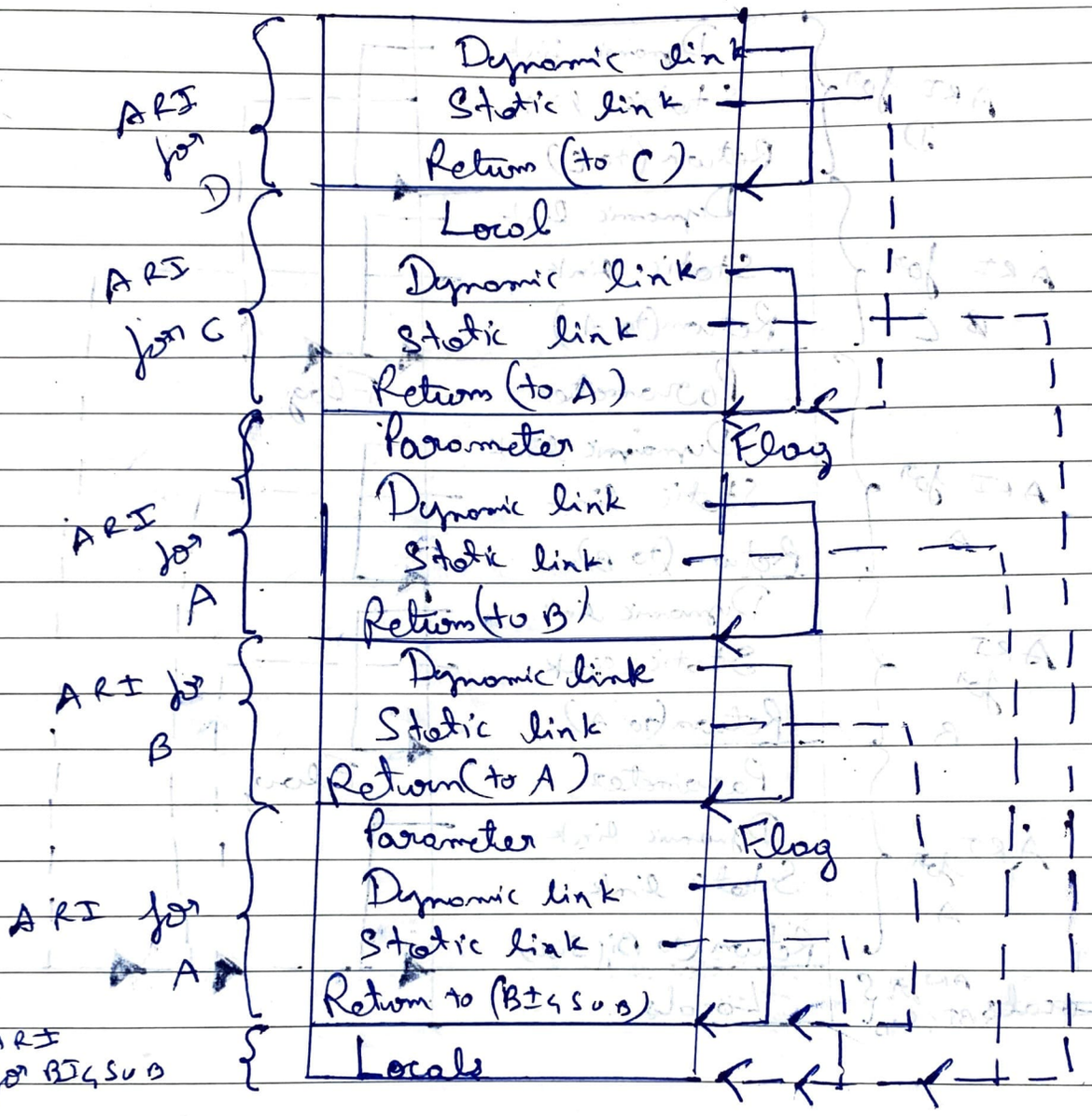
Here, Bigsub calls A
A calls B
B calls C

Ques: 3.

```
procedure BigSub is
  procedure A(Flag : Boolean) is
    procedure B is
    ...
      A(false);
    end;  -- of B
  begin  -- of A
    if flag
      then B;
      else C;
    ...
    end;  -- of A
  procedure C is
    procedure D is
    ...                <-------- 1
    end;   -- of D
    ...
    D;
  end;  -- of C
begin  -- of BigSub
...
A(true);
...
end;  -- of BigSub
```

The calling sequence for this program for execution to reach D is

BigSub calls A
A calls B
B calls A
A calls C
C calls D



Ques.4. void fun 1 ( ) {

float a;

...

}

void fun2 ( ) {

int b, c;

...

}

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PAGE

```
void fun3() {
    float d;
    ....
}
void main() {
    char e, f, g;
    ...
}
```

Calling sequence ——

main calls fun2
fun2 calls fun1
fun1 calls fun1
fun1 calls fun3