

$\Rightarrow PI(4) \rightarrow$

1
2
3
4

PDI $\rightarrow 4$

4
3
2
1
1
2
3
4

PDI(4) $\rightarrow 4$

4
3
2
1
2
3
4

PDI(5)

5
4
3
2
1
2
3
4
5

BP: PI(n)
SP: PI(n-1)

1
2
3
...

BP \rightarrow PDI(n) \rightarrow

PDI(n-1) \rightarrow

n
n-1
n-2
n-3
...

PDI(n) {
PDI(n-1)
}

~~PI(n) {
PI(n-1)
sp(n)
}~~

3

1
2
3
...

```
public static void main(String[] args) {
    PI(4);
}

public static void PI(int n) {
    BP: PI(n)
    // SP: PI(n-1)
    if(n==0) {
        return;
    }
    PI(n-1);
    System.out.println(n);
}
```

BP \rightarrow PI(1, n) \rightarrow

1
2
3
...

~~PDI(4)~~
~~PDI(3)~~
~~PDI(2)~~
~~PDI(1)~~
~~PDI(0)~~

3
n=3
PDI(3)
3
2
1
PDI(2)
2
1
PDI(1)
1
PDI(0)

5
3
2
1
2
3
2
1

PID $\rightarrow 4$

BP \rightarrow PID(4) \rightarrow

SP \rightarrow PID(3) \rightarrow

1
2
3
4, 4

PID(s, e) \rightarrow s

s
s+1
s+2
...

e
e
e-1
...

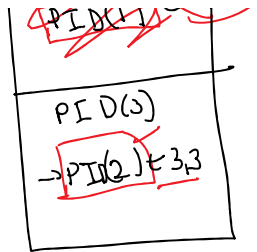
s
PID(s+1, e)
s

PID(4) {

PID(3) \leftarrow (4, 4)

~~PID(4)~~
~~PID(3)~~
~~PID(2)~~
~~PID(1)~~
~~PID(0)~~

3
2
1
0



Q $n!$ \rightarrow (4)

(3, 4)

3!

Q x^n

~~2~~ ~~2~~ 3³

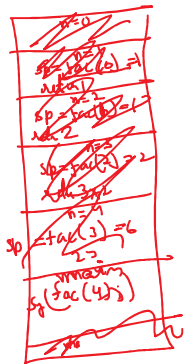
BP \rightarrow Fac(n)

Fac(3) \rightarrow $3 \times 2 \times 1$ \rightarrow 6

Fac(4) = 24

```
public static void main(String[] args) {
    System.out.println(fac(4));
}

public static int fac(int n) {
    BP: fac(n)
    SP: fac(n-1)
    if (n==0) {
        return 1;
    }
    int sp = fac(n-1);
    return n*sp;
}
```



(x^n)

Fibo

0, 1, 1, 2, 3, 5, 8, 13, 21,
0 1 2 3 4 5 6 7 8

```
public static int fibo(int n) {
    if (n <= 1) {
        return n;
    }
    int sp1 = fibo(n-1);
    int sp2 = fibo(n-2);
    return sp1 + sp2;
}
```

