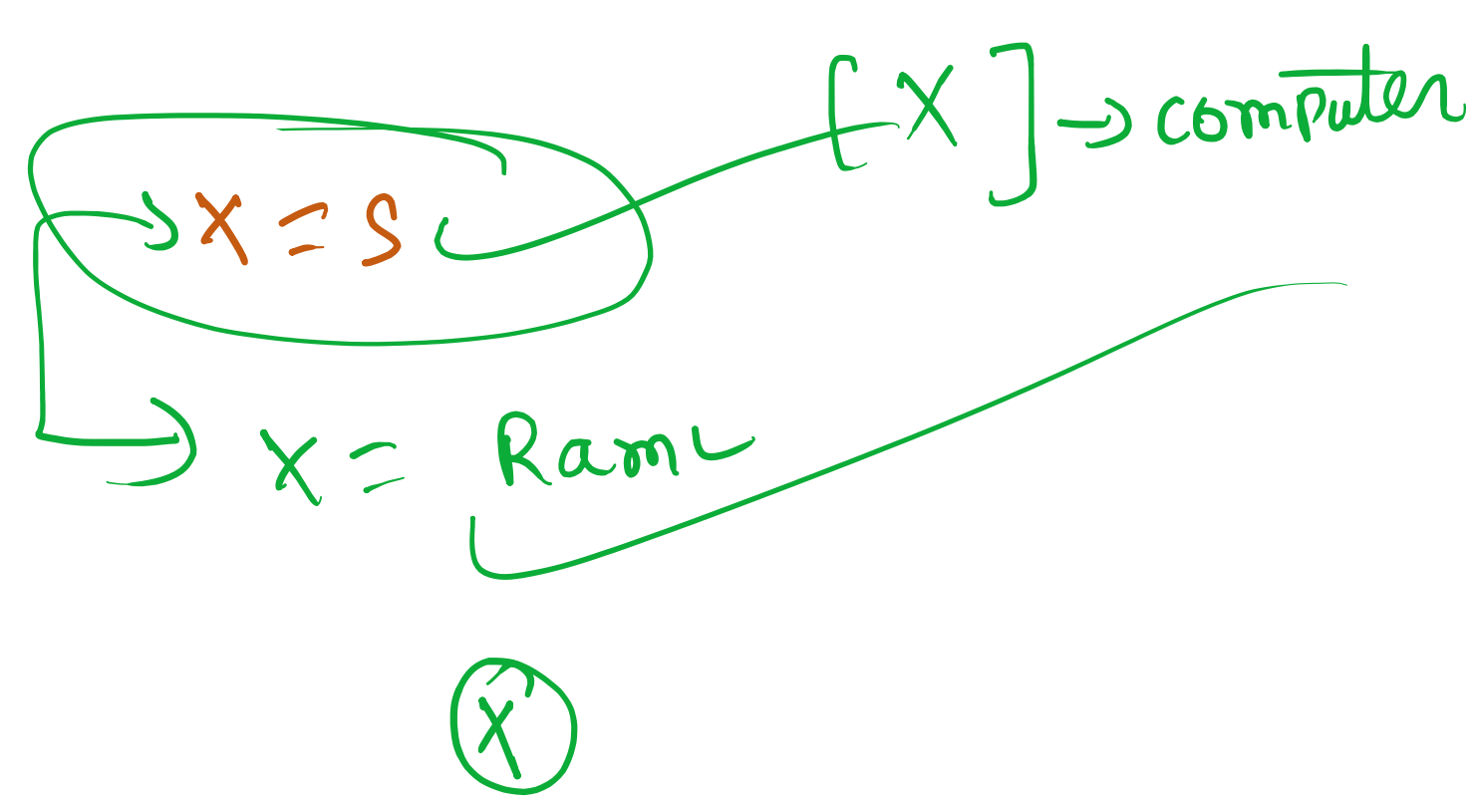


Variable

Engl



Java divides the into the following groups:

- Arithmetic operators
- Assignment operators
- Comparison operators
- Logical operators
- Bitwise operators

Arithmetic Operators

Arithmetic operators are used to perform common mathematical operations.

Operator	Name	Description	Example	Try it
+	Addition	Adds together two values	x + y	Try it
-	Subtraction	Subtracts one value from another	x - y	Try it
*	Multiplication	Multiplies two values	x * y	Try it
/	Division	Divides one value by another	x / y	Try it
%	Modulus	Returns the division remainder	x % y	Try it
++	Increment	Increases the value of a variable by 1	++x	Try it
--	Decrement	Decreases the value of a variable by 1	--x	Try it

ADVERTISEMENT

Java Assignment Operators

Assignment operators are used to assign values to variables.

In the example below, we use the **assignment** operator (=) to assign the value **10** to a variable called **x**:

Example

```
int x = 10;
```

[Try it Yourself](#)

The **addition assignment** operator (+=) adds a value to a variable:

Example

```
int x = 10; x += 5;
```

[Try it Yourself](#)

A list of all assignment operators:

Operator	Example	Same As	Try it
=	x = 5	x = 5	Try it
+=	x += 3	x = x + 3	Try it
-=	x -= 3	x = x - 3	Try it
*=	x *= 3	x = x * 3	Try it
/=	x /= 3	x = x / 3	Try it
%=	x %= 3	x = x % 3	Try it
&=	x &= 3	x = x & 3	Try it
=	x = 3	x = x 3	Try it
^=	x ^= 3	x = x ^ 3	Try it
>>=	x >>= 3	x = x >> 3	Try it
<<=	x <<= 3	x = x << 3	Try it

Java Comparison Operators

Comparison operators are used to compare two values:

Operator	Name	Example	Try it
==	Equal to	x == y	Try it
!=	Not equal	x != y	Try it
>	Greater than	x > y	Try it
<	Less than	x < y	Try it
>=	Greater than or equal to	x >= y	Try it
<=	Less than or equal to	x <= y	Try it

Java Logical Operators

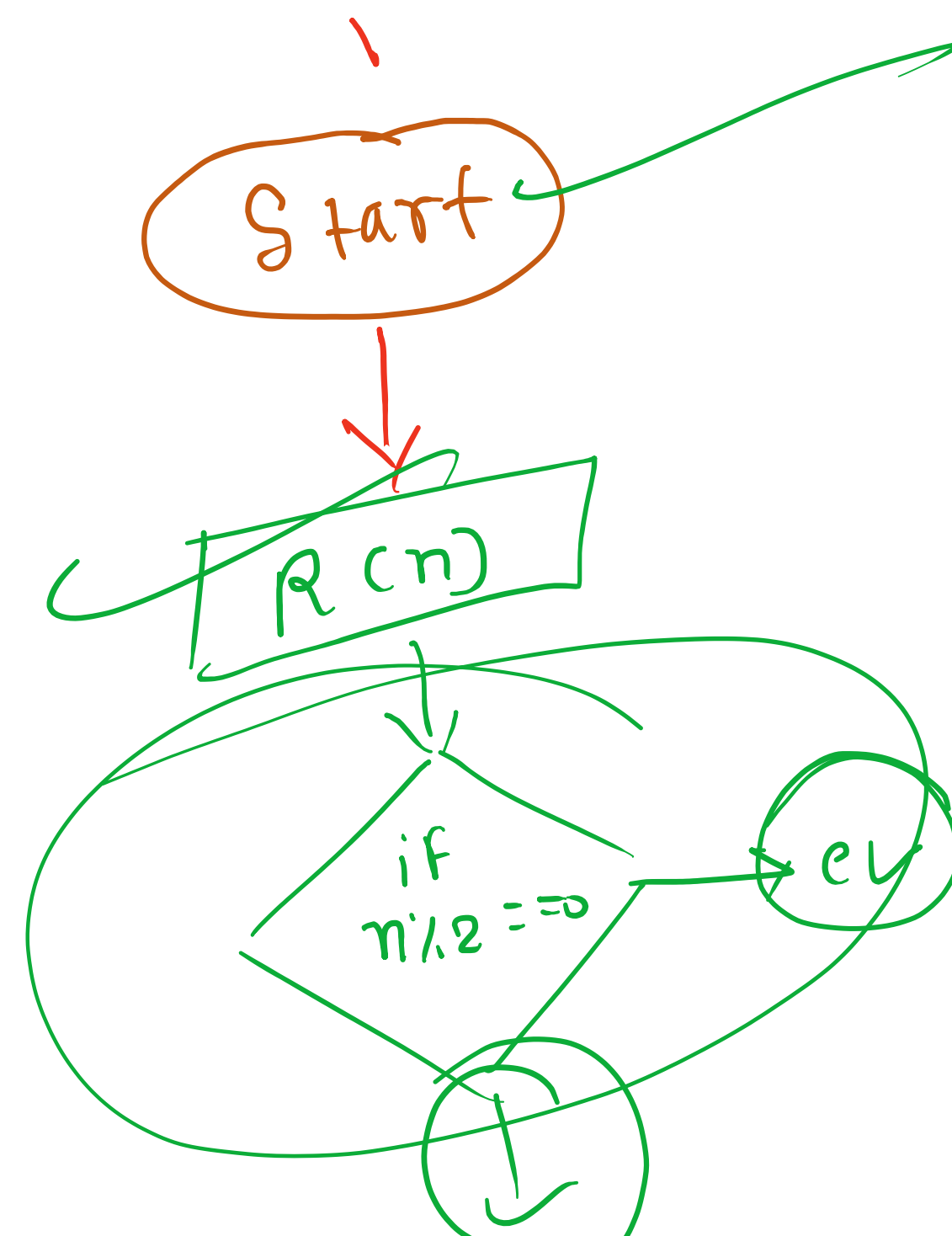
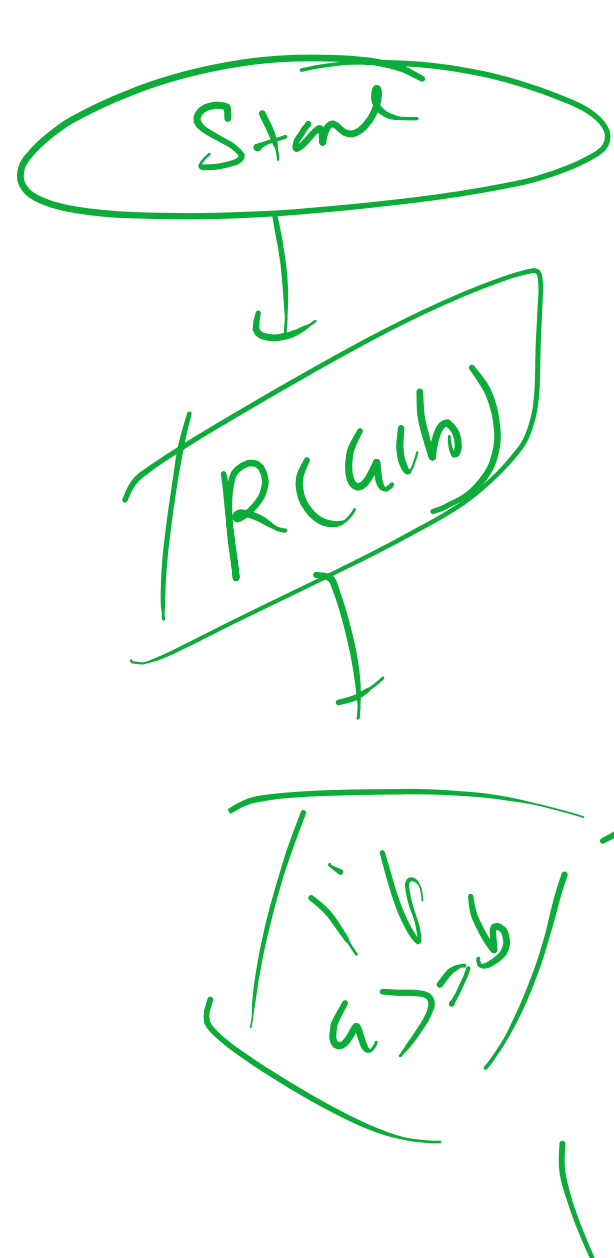
Logical operators are used to determine the logic between variables or values:

Operator	Name	Description	Example	Try it
&&	Logical and	Returns true if both statements are true	x < 5 && x < 10	Try it
	Logical or	Returns true if one of the statements is true	x < 5 x < 4	Try it
!	Logical not	Reverse the result, returns false if the result is true		

Return true

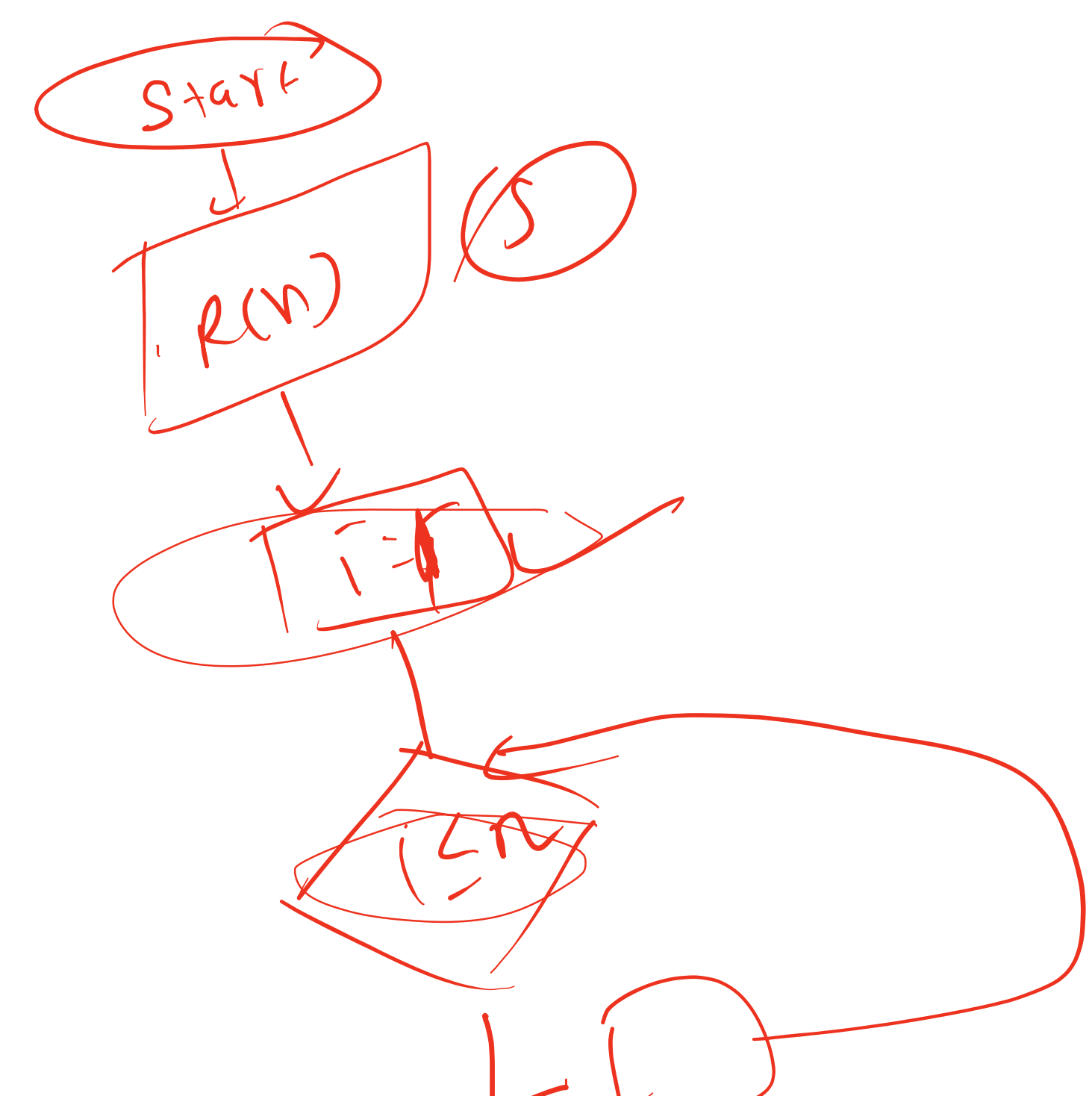
a	b	a b
T	T	T
T	F	T
F	T	T
F	F	F

a	b	a && b
T	T	T
T	F	F
F	T	F
F	F	F



```
public static void main(String[] args) {  
    // TODO Auto-generated method stub  
    int a = 18;  
    int b = 9;  
    int c = 7;  
    if (a >= b && a >= c) {  
        System.out.println(a);  
    }  
    else if (b >= a && b >= c) {  
        System.out.println(b);  
    }  
    else {  
        System.out.println(c);  
    }  
}
```

m >= 75 A
m >= 65 And m < 75 B
m >= 55 and m < 65 C
m >= 45 and m < 55 D
m < 45 fail



```
public static void main(String[] args) {  
    // TODO Auto-generated method stub  
    int n = 5;  
    int i = 1;  
    while (i <= n) {  
        System.out.println(i);  
        i = i + 1;  
    }  
}
```

n = 5

i = 1

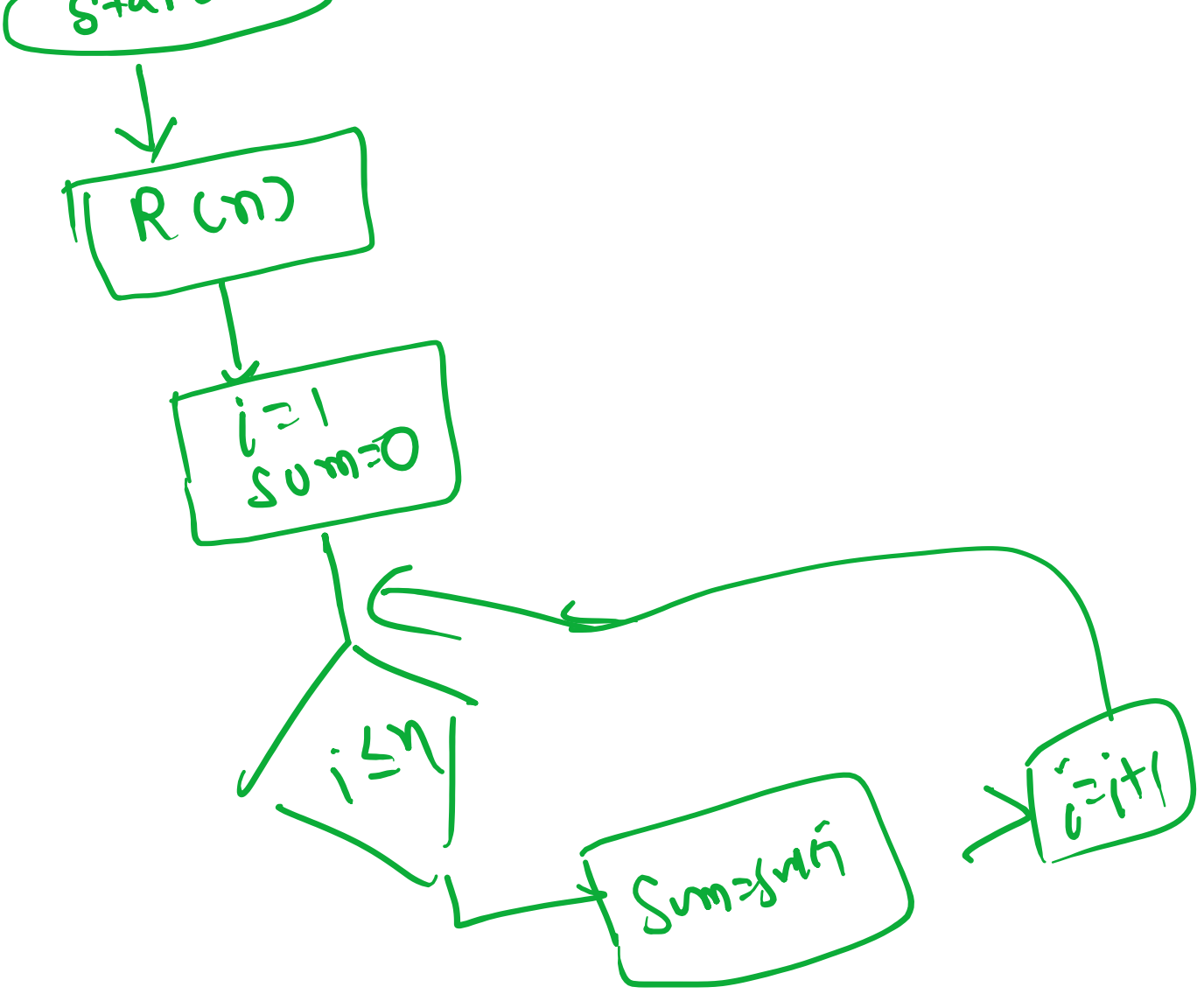
1 <= 5
2 <= 5
3 <= 5
4 <= 5

i = i + 1
= 2
i = 2 + 1
= 3
i = 3 + 1
= 4
i = 4 + 1
= 5
i = 5 + 1
= 6

1
2
3
4
5

(i)

1 2 3 4 5



```
public static void main(String[] args) {  
    // TODO Auto-generated method stub  
    int n = 5;  
    int sum = 0;  
    int i = 1;  
    while (i <= n) {  
        sum = sum + i;  
        i = i + 1;  
    }  
    System.out.println(sum);  
}
```

n = 5

Condi	Sum	i
1 <= 5	sum = 0 + 1 = 1	i = 1 + 1 = 2
2 <= 5	sum = 1 + 2 = 3	i = 2 + 1 = 3
3 <= 5	sum = 3 + 3 = 6	i = 3 + 1 = 4
4 <= 5	sum = 6 + 4 = 10	i = 4 + 1 = 5
5 <= 5	sum = 10 + 5 = 15	i = 5 + 1 = 6
6 <= 5		

```
public static void main(String[] args) {  
    // TODO Auto-generated method stub  
    int a = 8;  
    System.out.println(a++);  
    System.out.println(a);  
    int x = a++ + 7 - a-- + a-- + 11; // 25  
    System.out.println(x);  
}
```

a = 8 7 6 5 4 3 2 1

8 + 8 - 7 + 6 - 7 = 16

8 - 10 + 7 + 9 + 10 + 11 = 20

int x = a++ + 7 + a-- + a-- + 11; // 25
System.out.println(x);