



## Today's agenda

↳ if / else

↳ if / else if ... - else

↳ while loop

1st: you guys will get ASSIGNS/H.W starting from next class. leetcode / cfc / HackerRank.

## HackerRank



Practice Page → add → leetcode/gbg  
link:

leaderboard ↗

2nd → quickly solve → levelup

1st / 2nd / 3rd  
working projects  
foundation

complete

levelup

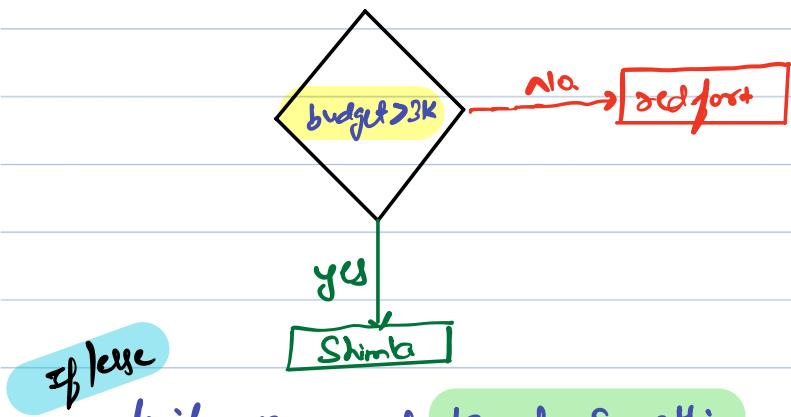
4th year / badges  
foundation → Assess →  
Arrays →  
Arrays levelup  
decodings



// If / Else

$\text{budget} > 3K \rightarrow \text{Shimla}$

$\text{budget} < 3K \rightarrow \text{Red fort}$



If else

If we want to do something when the Cond<sup>n</sup> is true and something else if Cond<sup>n</sup> is false.

Syntax

if (Cond<sup>n</sup>) {  
    // Statement 1  
}  
else {  
    // Statement 2  
}

if Cond<sup>n</sup> → true : Statement1  
if Cond<sup>n</sup> → false : Statement2



## 11 Pseudo Code

```
if (budget > 3000) {
    System.out.println("Shimla");
}
else {
    System.out.println("Mumbai");
}
```



# AlgoPrep



Q) Take input mark scored by a student. Print "Pass" if  
mark  $\geq 35$ , otherwise Print "fail".

```
if (mark >= 35){  
    System.out.println("Pass");  
} else {  
    System.out.println("Fail");  
}
```

Quiz 1 :



```
if (15 > 7){  
    System.out.println("if");  
} else {  
    System.out.println("else");  
}
```

→ if

Quiz 2 :

```
int n = 70;  
if (n > 70){  
    System.out.println("if");  
}  
else {  
    System.out.println("else");  
}
```

→ else



Q) Read a number and check if number is even or

odd? even no: divisible by 2 → remainder 0

odd no: not divisible by 2

Scanner scn = new Scanner (System.in);

int num = scn.nextInt();

9%2 → 1

12%2 → 0

if (num%2 == 0) {

System.out.println ("even");

else {

System.out.println ("odd");

}

// logical operators → &&, || and , not

&&

Cond<sup>1</sup> && Cond<sup>2</sup>

answer

false  
dominated  
relation

T T

T

F T

F

T F

F

F F

F

if (cond<sup>1</sup> cond<sup>2</sup>)

used to club

multiple Cond<sup>n</sup>

int a = 50;

int y = 30;

if (a > 60 && y > 20) {

// Statement 1

→ Statement 2

3

else {

// Statement 2

}



→ 3 cond<sup>n</sup>s

Cond<sup>n</sup>1 & Cond<sup>n</sup>2 & Cond<sup>n</sup>3      answer

T	T	T	T
T	T	F	F

→ if you want to execute "if" only when all the  
Conditions are true? → **&**

or || → or

true dominated relation

Cond<sup>n</sup>1 || Cond<sup>n</sup>2

answer

T	T	T
T	F	F
F	T	F
F	F	F



- Q) Read a number. If number is divisible by 2 or 3  
Point "divisible", otherwise Point "not divisible".

```
Scanner scn = new Scanner (System.in);
int num = scn.nextInt();
num: 8 → divisible
num: 36 → divisible
if ((num % 2 == 0) || (num % 3 == 0)){
    System.out.println ("divisible");
} else {
    System.out.println ("Not divisible");
},
```

- Q) Read a number. If number is divisible by 2 and 3  
Point "divisible", otherwise Point "not divisible".

6 ide

```
Scanner scn = new Scanner (System.in);
int num = scn.nextInt();
if ((num % 2 == 0) && (num % 3 == 0)){
    System.out.println ("divisible");
} else {
    System.out.println ("Not divisible");
},
```



if | Else if (...) ... | Else

Syntax

↳

```
if (Condn) {  
    // Statement 1  
    } else if (Cond2) {  
    // Statement 2  
    } else if (Cond3) {  
    // Statement 3  
    } else {  
    // Statement 4
```

10 blocks  $\rightarrow$  9 cond<sup>n</sup>

Cond<sup>n</sup> true  $\rightarrow$  Statement 1 & skip remaining if else

Cond<sup>n</sup> false  $\rightarrow$  Statement 2 & skip remaining if else

Cond<sup>n</sup> false  $\rightarrow$  Statement 3

All the cond<sup>n</sup>'s are false  $\rightarrow$  else



## Comparison

if (cond<sup>n</sup><sub>1</sub>) {  
    // Statement 1

    }  
    if (cond<sup>n</sup><sub>2</sub>) {  
        // Statement 2

    }  
    if (cond<sup>n</sup><sub>3</sub>) {  
        // Statement 3

    }  
    if (cond<sup>n</sup><sub>4</sub>) {  
        // Statement 4

    }

if (cond<sup>n</sup><sub>1</sub>) {  
    // Statement 1

    }  
    else if (cond<sup>n</sup><sub>2</sub>) {  
        // Statement 2

    }  
    else if (cond<sup>n</sup><sub>3</sub>) {  
        // Statement 3

    }  
    else {  
        // Statement 4

    }

↳ Cond<sup>n</sup><sub>1</sub> & Cond<sup>n</sup><sub>3</sub> are true



Statement 1

Statement 3



Statement 1



Q) Given 3 numbers, Point max out of these.

ex:	a	b	c	ans
	6	3	4	6
	8	3	10	10
	12	4	4	12
	13	10	13	13
	8	6	8	8
	11	11	11	11

a	b	c	
13	10	13	→ 13
11	11	11	→ 11
8	3	10	→ 10
0	2	0	→ 2

II) Pseudo code

```
int a = scn.nextInt();  
int b = scn.nextInt();  
int c = scn.nextInt();  
  
if (a >= b && a >= c){  
    System.out.println(a);  
} else if (b >= a && b >= c){  
    System.out.println(b);  
}  
else {  
    System.out.println(c);  
}
```

Break till 9:43 PM



## 11 Intro to loops

↳ Print all numbers from 1 to 5.

```
System.out.println(1);  
System.out.println(2);  
System.out.println(3);  
System.out.println(4);  
System.out.println(5);
```

↳ Print numbers from 1 to 1000.

**loop!** Do same thing multiple times

↳ a) while loop ↗

b) for loop ↗

c) ~~do while~~ xx

Q) Print 1 to 5 using while loop.

```
int i=1;  
while (i<=5) {  
    System.out.println(i);  
    i = i+1;  
}
```

*Cond": loops will run till the Cond is true.*



Dry run

i	$i <= 5$	Point
1	T	$1 \rightarrow i = i + 1 \rightarrow i = 2$
2	T	$2 \rightarrow i = i + 1 \rightarrow i = 3$
3	T	$3 \rightarrow i = i + 1 \rightarrow i = 4$
4	T	$4 \rightarrow i = i + 1 \rightarrow i = 5$
5	T	$5 \rightarrow i = i + 1 \rightarrow i = 6$
6	F	

i = i+1 & i++ are same

## // Structure of while loop

1. Initialize loop variable.

```
int i=1;
```

2. Work while with condn.

```
while (i <= 100) {
```

```
}
```

3. The statement you want to run.

```
System.out.println(i);
```

4. updation of loop variable.

```
i = i + 1; or i++;
```



### Quiz 3

```

int i=5;
while(i<10){
    System.out.print(i);
    i=i*2;
}
  
```

i	i < 10	Point
5	T	5 → i: i+2 → i: 10
10	F	

### Quiz 4:

```

int i=1;
while(i<5){
    System.out.print(i+ " ");
    i=i+2;
}
  
```

i	i < 5	Point
1	T	1 → i: i+2; i: 3
3	T	3 → i: i+2; i: 5
5	F	

1 3...

### Quiz 5:

```

int i=1;
while(i>=5){
    System.out.println(i);
    i++;
}
  
```

i	i >= 5	Point
1	F	



Quiz 6:

`int i=1;`

`while (i<=5) {`

`System.out.print(i);`

`}`

<code>i</code>	<code>i&lt;5</code>	Point
1	T	1
1	T	1
1	T	1
⋮	⋮	⋮

Quiz 8:

`int i=0;`

`while (i<=5) {`

`System.out.println ("AlgoPep");`

`i = i+1;`

`}`

How many times AlgoPep will be printed?

6

<code>i</code>	<code>i&lt;5</code>	Point
0	T	1st Point $i=1$
1	T	2nd Point $i=2$
2	T	3rd Point $i=3$
3	F	
4	T	
5	T	
6	F	6th Point $i=6$

↳ 15 classes  $\Rightarrow$  language won't matter to you

↓  
writing the code is easiest.