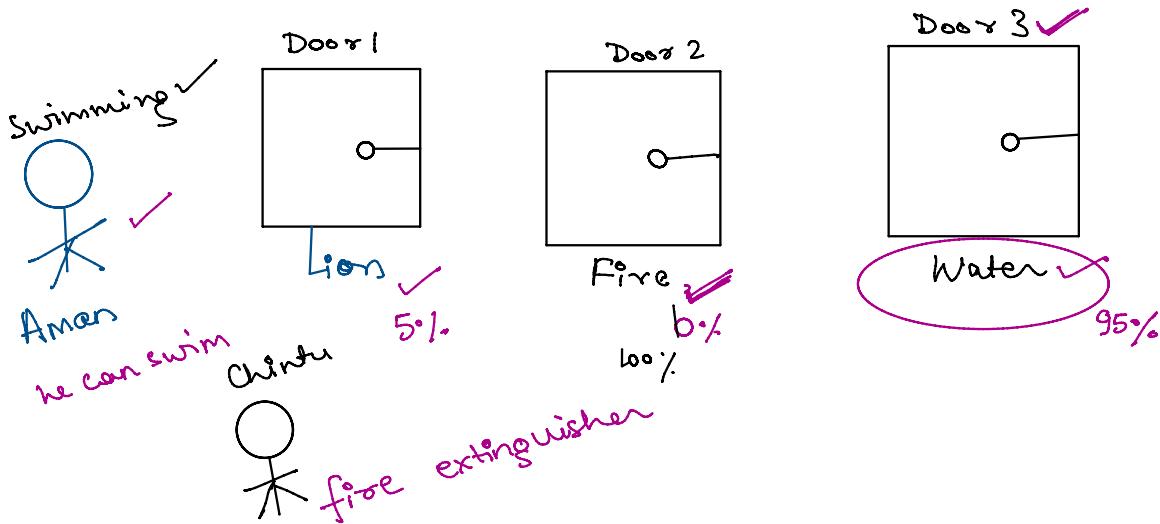


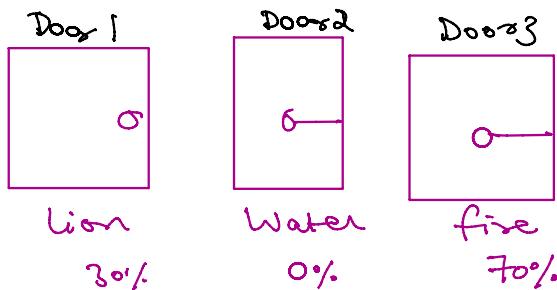
# # Decision Making



if - else

Aakash

stick figure with a thought bubble containing "fire-extinguisher 70%" and "he knows how to train lion 30%".



• If - condition

Syntax → `if (test Condition)  
{  
 cond → true  
 use it  
}  
 true or false  
 false skip`

cond is false

```

public static void main(String[] args) {
    int number = 12;
    if(number > 0){
        System.out.println("Positive Number");
    }
    System.out.println("Hello Geekster!");
}

```

Positive Number ✓  
Hello Geekster! ✓

```

public static void main(String[] args) {
    int number = -12;
    if(number > 0){ false
        System.out.println("Positive Number");
    }
    System.out.println("Hello Geekster!");
}

```

Skipped  
→ Hello Geekster!

## # if - else

Syntax → if (test condition) tail

Team A Team B

Door1 Door2

Door1  Door2

Head tail

Toss a coin

Aman Adesh

```

public static void main(String[] args) {
    int number = 5;
    if(number >= 0){ true
        System.out.println("Zero Or Positive Number");
    } else{
        System.out.println("Negative Number");
    }
    System.out.println("Hello Geekster!");
}

```

coin → if(tail) → choose the cond bat/bell  
else → head → other teams

Zero or Positive Number

Hello Geekster

```
public static void main(String[] args) {  
    int number = -5;  
    if(number >= 0){ → false  
        System.out.println("Zero Or Positive Number");  
    }else{  
        System.out.println("Negative Number");  
    }  
  
    System.out.println("Hello Geekster!");  
}
```

Negative Number  
Hello Geekster

# if-else ladder

a bunch  
of

Syntax →

if ( test condition )

} =

else if ( test condition )

} =

else

Door 1

Door 2

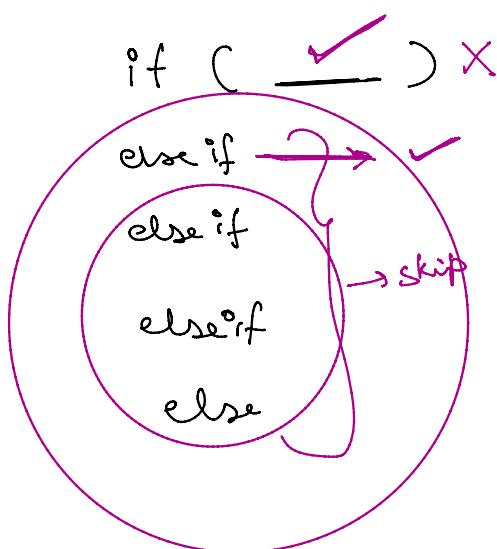
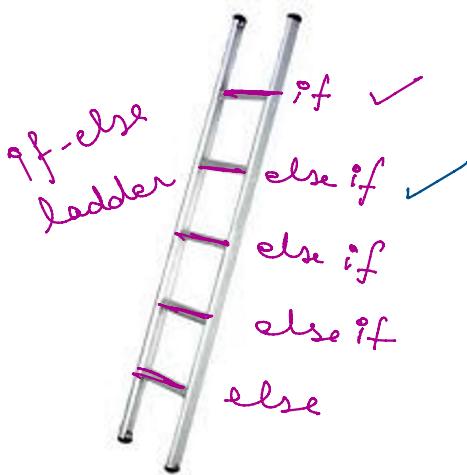
Door 3

Door 4

Door 5

multiple  
else if

```
If (Door1) {  
    ==  
    }  
    Else if (Door2)  
    {  
        ==  
        }  
        Else if (Door3)  
        {  
            ==  
            }  
            Else if (Door4)  
            {  
                ==  
                }  
                Else {  
                    ==  
                    }
```



```

public static void main(String[] args) {
    int number = 0;
    if(number > 0){ → false
        System.out.println(" Positive Number"); X → skip
    }else if(number == 0){ → true
        System.out.println("Zero");
    }else{
        System.out.println("Negative Number");
    }
}

```

```

public static void main(String[] args) {
    int number = 29; ✓
    if(number > 0){ → true
        System.out.println(" Positive Number"); ← positive number
    }else if(number == 0){
        System.out.println("Zero");
    }else{
        System.out.println("Negative Number");
    }
}

```

```

public static void main(String[] args) {
    int number = -45;
    if(number > 0){ → false
        System.out.println(" Positive Number"); → skip
    }else if(number == 0){ → false
        System.out.println("Zero"); — skip
    }else{
        System.out.println("Negative Number"); → Negative Number
    }
}

```

Eg: Check even or odd

$(\text{number} \% 2 == 0)$ → even
$(\text{number} \% 2 != 0)$ → odd

(Number % 2 != 0) → odd

$$2 \sqrt{15} \\ \underline{14} \\ 1$$

(1 != 0) → odd

$$2 \sqrt{28} \\ \underline{2} \\ 8 \\ \underline{8} \\ 0$$

0 == 0 → even

```
public static void main(String[] args) {
    int number = 15;
    if(number % 2 == 0){ // 15 % 2 == 0 → false
        System.out.println("Even Number"); → skip
    }else{
        System.out.println("Odd Number"); ✓ → Odd Number
    }
}
```

Note • It is a good practise to not use flower bracket  
 if we are running only single line in  
 (if-else case);

## Adult or not 1

Problem

Submissions

Leaderboard

Discussions

(age  $\geq 18$ )

You will be given the age of a person as an integer input. You need to print "Adult" if the age is greater than or equal to 18 and print "Below age" if the age is below 18.

Input Format

For each test case, you will get the age of a person as an integer input.

If - else

```

    nextInt();
Scanner scn = new Scanner(System.in);
int age = scn.nextInt();
if(age >=18){
    System.out.println("Adult");
} else {
    System.out.println("Below age");
}

```

```

Scanner scn = new Scanner(System.in);
int age = scn.nextInt();
System.out.println(age>=18 ? "Adult" : "Below age");

```

ternary operator

if else

Adult  
Below age

## High Sum or Low Sum

Problem

Submissions

Leaderboard

Discussions

You will get two integer inputs x and y, you need to print "High Sum" if sum is greater than or equal to 100, and print "Low Sum" otherwise.

Sum  $\geq 100$

else "Low Sum"

Input Format

You will get the value of x in the first line, You will get the value of y in the second line.

```

Scanner sc = new Scanner(System.in);
int x = sc.nextInt(); ✓
int y = sc.nextInt(); ✓
int ans = x+y;
if(ans>-100){
    System.out.println("High Sum");
}else{
    System.out.println("Low Sum");
}

```

### Grading System

### if-else ladder

1. You are given as input marks of a student.
2. Display an appropriate message based on the following rules:
  - 2.1 for marks above 90, print excellent.
  - 2.2 for marks above 80 and less than equal to 90, print good.
  - 2.3 for marks above 70 and less than equal to 80, print fair.
  - 2.4 for marks above 60 and less than equal to 70, print meets expectations.
  - 2.5 for marks above 40 and less than equal to 60, print below par.
- 2.6 print failed if none of the above conditions follow.

$>90 \rightarrow \text{excellent}$   
 $>80 \& \leq 90 \rightarrow \text{good}$   
 $>70 \& \leq 80 \rightarrow \text{fair}$   
 $>60 \& \leq 70 \rightarrow \text{meets exp.}$   
 $>40 \& \leq 60 \rightarrow \text{below par}$   
 else  $\rightarrow \text{failed.}$

```

Scanner scn = new Scanner(System.in);
int marks = scn.nextInt();
if(marks > 90){
    System.out.println("excellent");
}else if(marks > 80 && marks <=90){
    System.out.println("good");
}else if(marks > 70 && marks <=80){
    System.out.println("fair");
}else if(marks > 60 && marks <=70){
    System.out.println("meets expectations");
}else if(marks > 40 && marks <=60){
    System.out.println("below par");
}else{
    System.out.println("failed");
}

```

## Shop Discount

Problem      Submissions      Leaderboard      Discussions

A shop will give a discount of 10% on the total cost if the cost of the quantity purchased is more than 1000. Ask user for the number of units. Suppose, one unit will cost 100. Judge and print total cost for the user in the integer format.

Input Format

$\text{if } (\text{value} > 1000) \rightarrow 1000$   
 $\text{if } (\text{value} > 1000) \text{ we get } 10\%$   
 $\text{int b = scn.nextInt();}$   
 $\text{if } (\text{b} > 1000)$

Ask user for the number of units. Suppose, one unit will cost 100. Judge and print total cost for the user in the integer format.

Input Format

For each test case, You will be given the number of units in the integer format.

int b = scn.nextInt();

if (1100 > 1000)  
(10%) / 100

10 pen each per cost 100  
→ 10 \* 100  
→ 1000

cost = 100;  
15 × 100 = 1500 - 150 = 1350

11 pen each per cost 100  
11 × 100 = 1100  
q90 ✓

if (value > 1000)  
10% discount

1100 - 110  
= 990

```
/* Enter your code here. Read input from  
Scanner scn = new Scanner(System.in);  
int unit = scn.nextInt(); ✓  
int cost = unit * 100;  
if(cost > 1000){  
    int discount = (cost * 10)/100;  
    cost = cost - discount;  
}  
System.out.println(cost); ✓ ✓ ✓
```

$$\frac{\text{cost}}{\text{new}}$$

$$\frac{\text{cost}}{\text{old}} - \text{discount}$$

$$990 ✓$$

$$\text{int } x = 35;$$

$$x + \frac{10}{x+10} \quad \checkmark$$

$$x + 10 \quad \checkmark$$

$$x = x + 10  
x = 35 + 10 = 45$$

$$x = 20$$