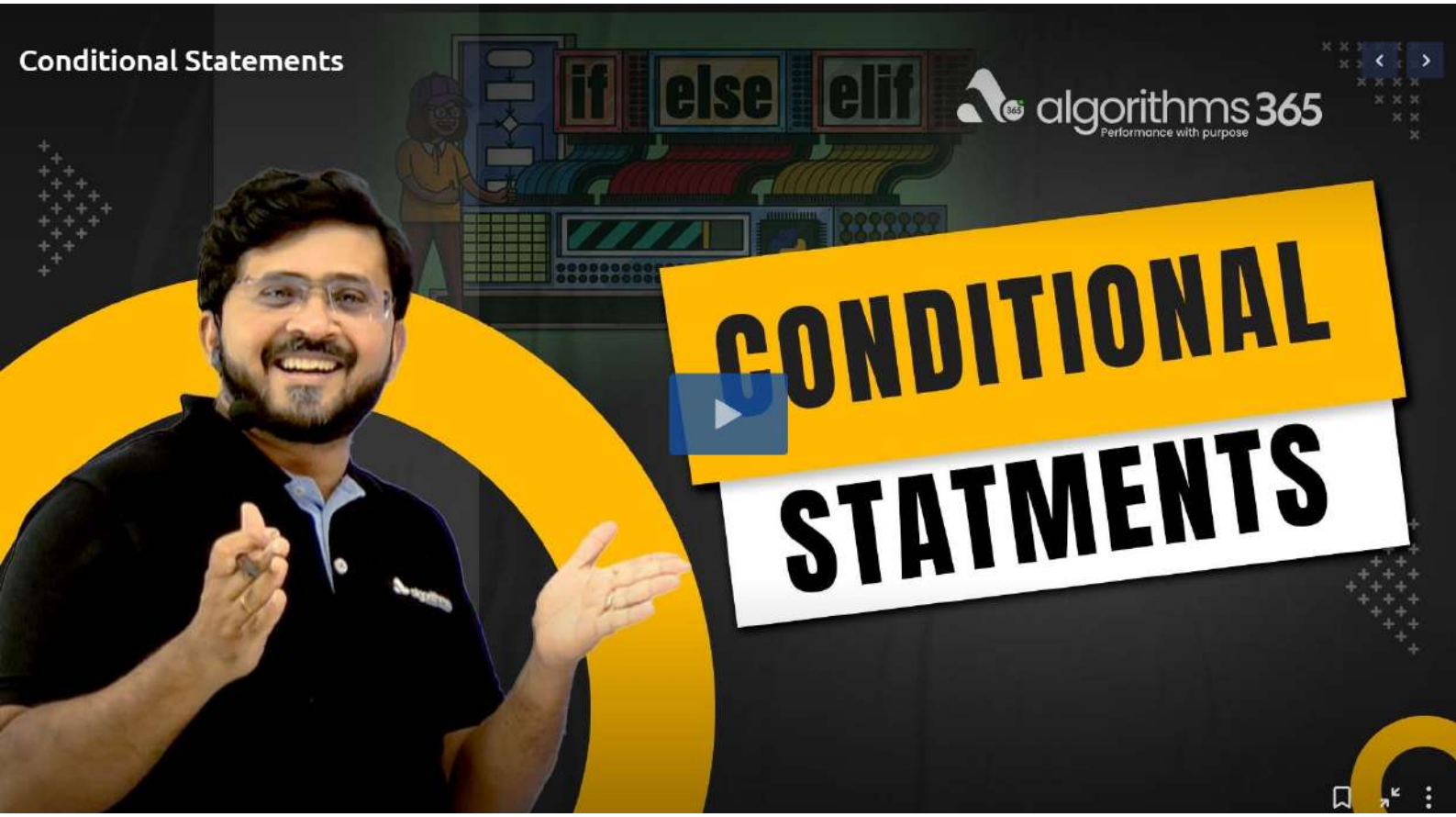
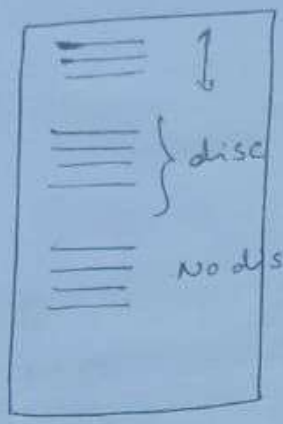

Conditional Statements
if
else
elif
algorithms 365
Performance with purpose
CONDITIONAL
STATMENTS

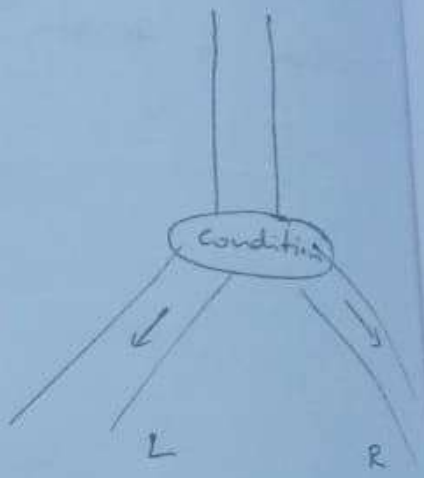
Day 14 — 1/9/2025 → Monday

Conditional statements

(1) why conditional statements ?

If you want to check condition and take action





⇒ # pattern 1

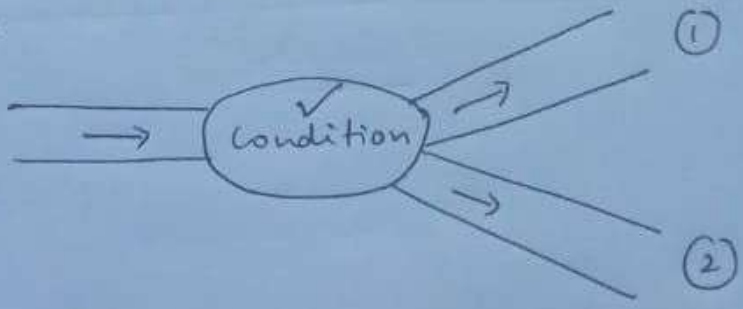
if ( )

Eg:
* Person can Vote or not

```
if (age > 18)
    (vote)
```

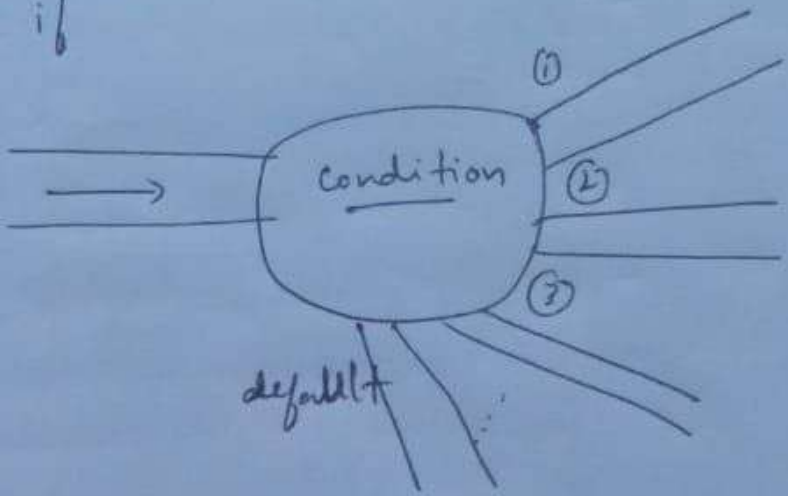
⇒ # pattern 2

if else



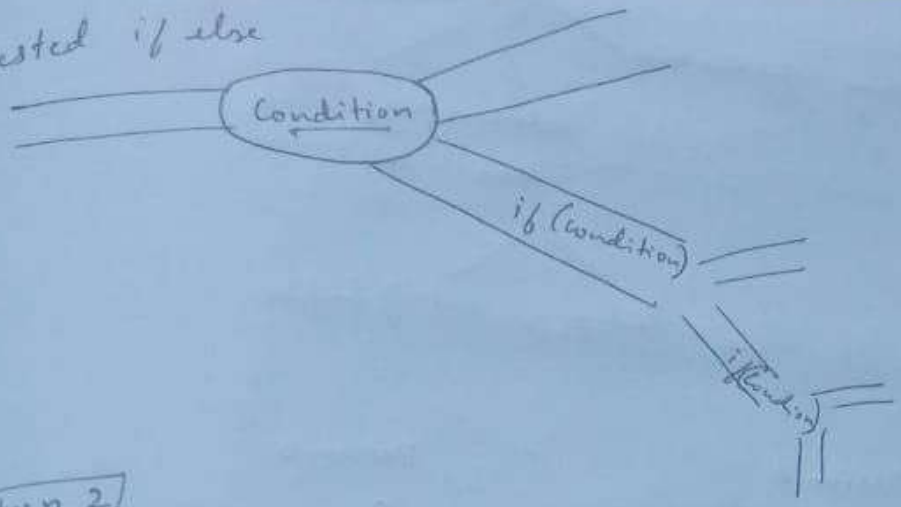
⇒ # pattern 3

if else if



#pattern 4

Nested if else



Pattern 2

Eg: In phonepay try to send -10 Rupees
It will be converted into text.
Because they only set (01) allowed to enter
Positive numbers [Implemented if else pattern 2]

⇒ if (value > 0)

if (rupees > 0 && rupees < 1 lakh)

else -1 text.

Pattern 3

Student aggrigate
- Distinction > 75
- First class >= 60
- Second class >= 50
- Third class >= 40
- Fail (else. default)

Pattern 4

Eg 1

train ticket
- 5 tickets available
  - where should seats be
- S1

Eg 2

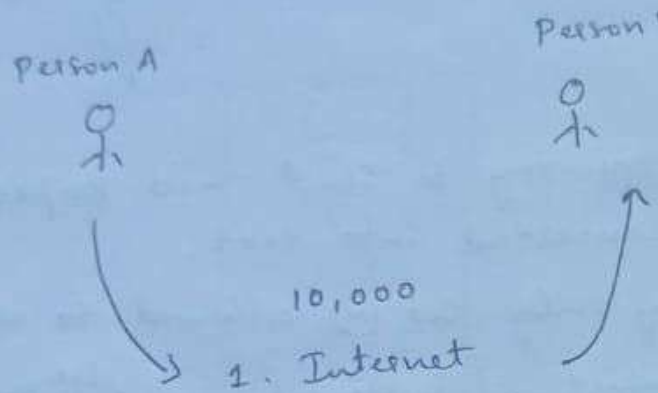
Voting application — age +18 (or) -18

address proff

yes — no

India — out of India

⋮



10,000

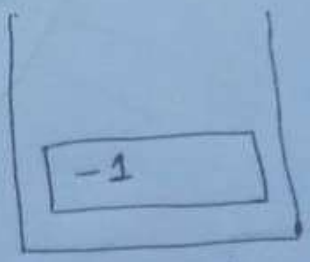
1. Internet
2. Authentication
3. Amount
4. Balance Amount.
5. Limit cross 1 L

1. Server of Reciever
2. Account active
3. Amount add.

Industry mistake done in Conditional Statement

(1) Amazon

shoping cart.

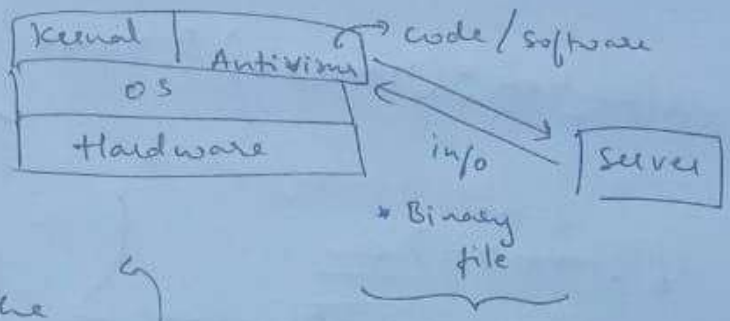


million $ loss

* After typing -1 and checking out ~~from~~ the product.
* Instead of diducting (or) - Balance in customer account. Amazon has sent the amount to the customer

(2)

Blue Screen → crowd strik



* Binary file

* The file formate was wrong
* So the code for read by Software at that time it come to say that "error checking"

at that time the Antivirus was crashed {this will be written in C (c++)}

So the Antivirus was in the Kernal level so OS got crashed.

So at that time "Blue Screen" come

{Worst down time of that time}

* crores together loss occured

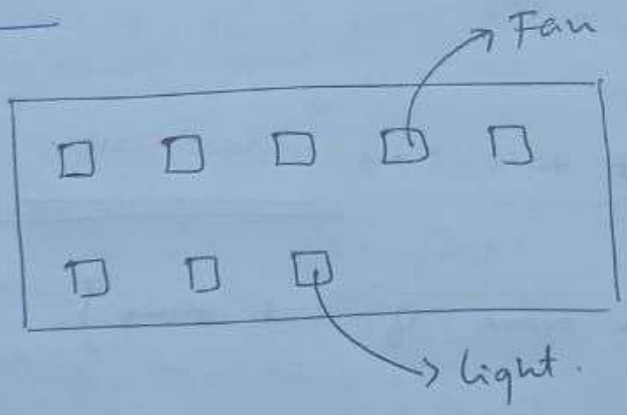
Conditional statement:

(condition) ? [true] : [false]

Eg: `isPosition = (num > 0) ? True : False ;`

```
if (num > 0) {
        isPositive = True ;
}
else {
        isPositive = False ;
}
```

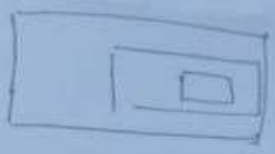
Switch




```
Switch (Condition)
    1
    2
    3
    4
    :
12  default. → Invalid input
```

How to write clear & clean conditional statement

if ( )

① 

nested if.

else

* Don't go with the nested formate
* other thing refactor the ~~the~~ code.

② fun (_ _ _)

if (input 1 ✓)

if (input 2 ✓)

if (input 3 ✓)

} Early Exit.

---

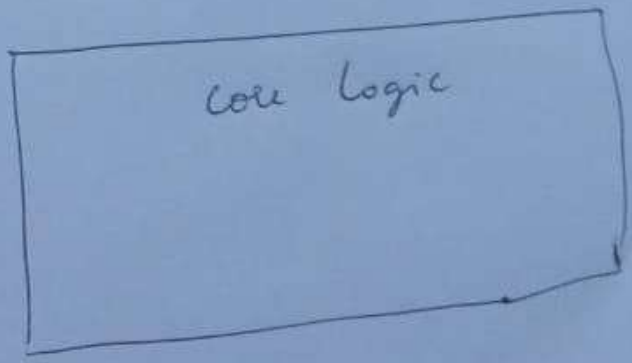
if (input 1 is wrong ×)

return

if (input 2 is wrong ×)

return

* reduce nested formate



(3) if (cond 1) && (cond 2) && (cond 3) || (cond 4)

avoid this kind of condition using AND OR

(4) In C language

if (a == b) ✓ * if you written like if (a = b)

* C compiler will Accept the mistake

* Be aware of this mistake

Example programs

1. Is the given Number is positive or negative

Day14 > Positive.java > Positive > main(String[])

```java
public class Positive{
    Run | Debug
    public static void main(String[] args){

        int Number = 10;

        //It does no work for negetive numbers

        if (Number > 0){
            System.out.println(x:"Number is Positive");
        }
    }
}
```

PROBLEMS OUTPUT TERMINAL ··· Run: Positive

```
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>  & 'C:\Program Files\Eclipse Adoptium\jdk-21.0.6.7-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ANANYA\AppData\Roaming\Code\User\workspaceStorage\015634db8fc5f9a2b840f9e82f267996\redhat.java\jdt_ws\Algorithm365_c0509dd3\bin' 'Positive'
Number is Positive
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>
```

Day14 > Positive.java > Positive

```java

public class Positive{
    Run | Debug
    public static void main(String[] args){

        int Number = -1;

        //Checks if the number is positive
        if (Number > 0){
            System.out.println(x:"Number is Positive");
        }

        //Comes here if the above condition gets false
        else{
            System.out.println(x:"Number is Negative");
        }
    }
}
```

PROBLEMS OUTPUT TERMINAL ··· Run: Positive

```
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>  & 'C:\Program Files\Eclipse Adoptium\jdk-21.0.6.7-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ANANYA\AppData\Roaming\Code\User\workspaceStorage\015634db8fc5f9a2b840f9e82f267996\redhat.java\jdt_ws\Algorithm365_c0509dd3\bin' 'Positive'
Number is Negative
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>
```

Day14 > Positive.java > Positive

```java
//Is the given Number is Positive Negative or Zero

public class Positive{
    Run | Debug
    public static void main(String[] args){

        int Number = 0;

        //Checks if the number is Positive
        if (Number > 0){
            System.out.println(x:"Number is Positive");
        }

        //Checks if the number is Negative
        else if (Number < 0){
            System.out.println(x:"Number is Negative");
        }

        //Comes here if the above condition gets false
        else{
            System.out.println(x:"Number is Zero");
        }
    }
}
```

PROBLEMS OUTPUT TERMINAL ··· Run: Positive

```
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>  & 'C:\Program Files\Eclipse Adoptium\jdk-21.0.6.7-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ANANYA\AppData\Roaming\Code\User\workspaceStorage\015634db8fc5f9a2b840f9e82f267996\redhat.java\jdt_ws\Algorithm365_c0509dd3\bin' 'Positive'
Number is Zero
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>
```

Day14 > ClassGrade.java > ...

```java
//Classify student percentage into distinction , first class , second class ect

public class ClassGrade {

    //Defination
    public static String getClassForPercentage(float percentage){
        if (percentage >= 75){
            return "Distinction";
        }
        else if (percentage >= 60){
            return "First class";
        }
        else if (percentage >= 35){
            return "Second class";
        }
        else if (percentage >= 35){
            return "Third class";
        }
        else{
            return "Fail";
        }
    }
    Run | Debug
    public static void main(String[] args) {
        //Function Invocation or Call
        float Student = 23;

        System.out.println("The result of Student : " +getClassForPercentage(Student));
    }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Run: ClassGrade

```
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>  & 'C:\Program Files\Eclipse Adoptium\jdk-21.0.6.7-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ANANYA\AppData\Roaming\Code\User\workspaceStorage\015634db8fc5f9a2b840f9e82f267996\redhat.java\jdt_ws\Algorithm365_c0509dd3\bin' 'ClassGrade'
The result of Student : Fail
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>
```

Day14 > Switch.java > Switch > main(String[])

```java
//Convert Day Month in digit to Word
//Example : if input is 5 then return May

public class Switch {

    public static String get_Month_Str(int month){

        switch(month){
            case 1 :
                return "Jan";
            case 2 :
                return "Feb";
            case 3 :
                return "March";
            case 4 :
                return "April";
            case 5 :
                return "May";
            case 6 :
                return "June";
            case 7 :
                return "July";
            case 8 :
                return "August";
            case 9 :
                return "Sept";
            case 10 :
                return "Oct";
            case 11 :
                return "Nov";
            case 12 :
                return "Dec";
            default :
                return "Invaild month";
        }
    }
    Run | Debug
    public static void main(String[] args){

        System.out.println(get_Month_Str(month:12));
    }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Run: ClassG...
Run: Switch

```
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>  & 'C:\Program Files\Eclipse Adoptium\jdk-21.0
-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ANANYA\AppData\
ing\Code\User\workspaceStorage\015634db8fc5f9a2b840f9e82f267996\redhat.java\jdt_ws\Algorithm365_
9dd3\bin' 'Switch'
Dec
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>
```

Day14 > GreaterorSmaller.java > GreaterorSmaller > main(String[])

```java
//Greater or Smaller number using Conditional Statemnet

public class GreaterorSmaller {
    // public static String isGreaterOrSmaller(int Number1 , int Number2){

    //     if (Number1 > Number2){
    //         return "Number 1 is Greater";
    //     }
    //     else{
    //         return "Number 2 is Greater";
    //     }
    // }

    // public static void main(String[] args) {

    //     System.out.println(isGreaterOrSmaller(10, 20));
    // }


    //Using ternary Operator

    Run | Debug
    public static void main(String[] args) {

        //Using ternary Operator

        int Number1 = 10;
        int Number2 = 20;

        String result = (Number1 > Number2) ? "Number 1 is Greater" : "Number 2 is Greater" ;

        System.out.println(result);

    }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Run: GreaterorSmaller

```
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>  & 'C:\Program Files\Eclipse Adoptium\jdk-21.0.6.7-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ANANYA\AppData\Roaming\Code\User\workspaceStorage\015634db8fc5f9a2b840f9e82f267996\redhat.java\jdt_ws\Algorithm365_c0509dd3\bin' 'GreaterorSmaller'
Number 2 is Greater
PS C:\Users\ANANYA\OneDrive\Desktop\Algorithm365>
```