**Operators**

**Operators are symbols which performs the operations on variables or values.**

**Categories:**

**1.Arithmetic Operators (+, -, \*, /, %)**

**2.Relational Operators (==, !=, >, <, >=, <=)**

**3.Logical Operators(&&, ||, !)**

* **Arithmetic Operators**

**Used for basic mathematical operations.**

public class ArithmeticExample {  
 public static void main(String[] args) {  
 int a = 30,b = 10;  
 System.*out*.println("Addition= "+ (a+b));  
 System.*out*.println("Subtraction= "+ (a-b));  
 System.*out*.println("Multiplication= "+ (a\*b));  
 System.*out*.println("Division= "+ (a/b));  
 System.*out*.println("Modulus= "+ (a%b));  
 }  
}

* **Relational Operators**
* **Used to compare the values**

public class RelationalExample {  
 public static void main(String[] args){  
 int a =10,b=5;  
 System.*out*.println("a == b ? ="+ (a==b));  
 System.*out*.println("a != b ? ="+ (a != b));  
 System.*out*.println("is a greater than b? "+ (a > b));  
 System.*out*.println("a < b "+ (a < b));  
 }  
}

* **Logical Operators**
* **Used to combine multiple conditions**

public class LogicalExample {  
 public static void main(String[] args) {  
 int age = 20;  
 boolean hasId = true;  
  
 // AND Operator  
 // T T -> True  
 System.*out*.println("Eligible = "+(age >= 18 && hasId));  
  
 // OR Operator  
 // F F -> False  
 System.*out*.println(age < 18 || hasId);  
  
 //NOT Operator  
 //!(T) -> false  
 //!(F) -> true  
 System.*out*.println(!(age >= 18));  
 // !(age >= 18) -> !(T) -> False  
 }  
}

**Control Statements:**

**Allows us to control the flow of execution.**

**If statement:**

**It is used to execute a block of a code if a condition evaluates to be true.**

**Syntax:**

**If(condition){**

**//code to execute if the condition is true**

**}**

public class IfExample {  
 public static void main(String[] args) {  
 int num = 10;  
  
 if(num > 0){  
 System.*out*.println("The number is positive");  
 }  
 }  
}

**if-else statement:**

**it gives us alternative path of execution when the condition is false**

**if(condition){**

**// code to be executed if the condition is true**

**} else {**

**// code to be executed if the condition is false**

**}**

public class ifElseExample {  
  
 public static void main(String[] args) {  
 int num = -10;  
  
 if(num > 0){  
 System.*out*.println("The number is positive");  
 }else{  
 System.*out*.println("The number is negative");  
 }  
 }  
}

**if-else-if ladder:**

* **It is used to test multiple conditions**

**SYNTAX:**

**If(condition1){**

**// code to be executed if the condition1 is true**

**} else if(condition2){**

**// code to be executed if the condition2 is true**

**}else{**

**// code to be executed if none of the conditions are true**

**}**

public class IfElseIfExample {  
 public static void main(String[] args) {  
 int marks = 70;  
  
 if (marks >= 90){  
 System.*out*.println("Grade A+");  
 } else if (marks >= 80) {  
 System.*out*.println("Grade A");  
 } else if (marks >= 70) {  
 System.*out*.println("Grade B");  
 } else if (marks >=60) {  
 System.*out*.println("Grade C");  
 } else{  
 System.*out*.println("FAIL");  
 }  
 }  
}