Class 05

Control flow statement in java

Control flow statements in Java are constructs that determine the order in which the instructions within a program are executed. They allow you to control the flow of your program's logic based on conditions and loops. Here are the primary control flow statements in Java:

1. **Conditional Statements**:
    - **if Statement**: The **if** statement is used to execute a block of code if a specified condition is true.

java code

if (condition) {

// Code to execute if the condition is true }

    - **if-else Statement**: The **if-else** statement is used to execute one block of code if a condition is true and another block if the condition is false.

Java code

if (condition) {

// Code to execute if the condition is true }

else { // Code to execute if the condition is false }

    - **switch Statement**: The **switch** statement allows you to select one of many code blocks to be executed, based on the value of an expression.

Java code

switch (expression)

{ case value1: // Code for value1 break;

case value2: // Code for value2 break;

default: // Code if no case matches }

Java Code:

System.***out***.println("Enter a day");

Scanner scanner = **new** Scanner(System.***in***);

String name = scanner.nextLine();

System.***out***.println("Todays day is "+ name);

scanner.close()

```
switch (name ){
case "Friday":
        System.out.println(" Todayt your Offday--- from switch");
        break;
case "Saturday":
        System.out.println("working day from switch");
        break;
case "Sunday":
        System.out.println("working day from switch");
        break;
        default :
                System.out.println(" not fixed as default from switch");
}
```

Use of Operators in Java

Operators in Java are special symbols or keywords used to perform operations on variables and values. They help you manipulate data, make decisions, and perform various calculations in your programs. Here's an overview of some common operators in Java:

1. **Arithmetic Operators:**
    - **+** (Addition): Adds two numbers.
    - **-** (Subtraction): Subtracts the right operand from the left operand.
    - ***** (Multiplication): Multiplies two numbers.
    - **/** (Division): Divides the left operand by the right operand.
    - **%** (Modulus): Returns the remainder of a division operation.

Java code

```
int a = 10, b = 3;
int sum = a + b; // 13
int diff = a - b; // 7
int product = a * b; // 30
int quotient = a / b; // 3
 int remainder = a % b; // 1
```

2. **Comparison Operators:**
    - **==** (Equal to): Checks if two values are equal.
    - **!=** (Not equal to): Checks if two values are not equal.
    - **>** (Greater than): Checks if the left operand is greater than the right operand.
    - **<** (Less than): Checks if the left operand is less than the right operand.
    - **>=** (Greater than or equal to): Checks if the left operand is greater than or equal to the right operand.
    - **<=** (Less than or equal to): Checks if the left operand is less than or equal to the right operand.

java code

```
int x = 5, y = 3;
 boolean isEqual = x == y; // false
boolean isNotEqual = x != y; // true
boolean isGreaterThan = x > y; // true
boolean isLessThan = x < y; // false
boolean isGreaterOrEqual = x >= y; // true
boolean isLessOrEqual = x <= y; // false
```

3. **Logical Operators:**
    - **&&** (Logical AND): Returns **true** if both operands are **true**.
    - **||** (Logical OR): Returns **true** if at least one operand is **true**.
    - **!** (Logical NOT): Inverts the value of a boolean expression.

Java code

```
boolean a = true, b = false;
boolean result1 = a && b; // false
boolean result2 = a || b; // true
boolean result3 = !a; // false
```

4. **Assignment Operators:**
    - **=** (Assignment): Assigns a value to a variable.
    - **+=** (Addition assignment): Adds the right operand to the left operand and assigns the result to the left operand.

- **-=** (Subtraction assignment): Subtracts the right operand from the left operand and assigns the result to the left operand.
- ***=** (Multiplication assignment): Multiplies the left operand by the right operand and assigns the result to the left operand.
- **/=** (Division assignment): Divides the left operand by the right operand and assigns the result to the left operand.
- **%=** (Modulus assignment): Computes the modulus of the left operand and the right operand and assigns the result to the left operand.

java code

```
int num = 10;

num += 5; // num is now 15

num -= 3; // num is now 12

num *= 2; // num is now 24

num /= 4; //

num is now 6

num %= 5; // num is now 1
```

5. **Increment and Decrement Operators:**
    - **++** (Increment): Increases the value of a variable by 1.
    - **--** (Decrement): Decreases the value of a variable by 1.

Java code

```
int count = 5;

count++; // count is now 6

count--; // count is now 5
```

These are some of the fundamental operators in Java. They allow you to perform various operations in your programs, from basic arithmetic calculations to making decisions based on conditions. As you continue to learn Java, you'll find more operators that provide additional functionality for different programming tasks.

Homework:

*****Draw flow chart for all the different control statements in java including if, if else, switch, for loop, while loop, do while loop to practice yourself . (You can take help from Google search)**