

Switch Case in Java

Detailed Notes

Switch case statements provide an efficient way for multiple-choice decisions, especially when many discrete values need to be checked.

Syntax

```
java
switch (expression) {
    case value1:
        // statements
        break;
    case value2:
        // statements
        break;
    ...
    default:
        // default statements
}
```

expression evaluates to a primitive or String (since Java 7).

Each case compares the expression to a value.

break prevents fall-through to next cases.

default executes if no case matches (optional).

Characteristics

Suitable to replace long if-else chains checking equality.

Can use int, char, String, enum types.

Fall-through occurs if break is missing (sometimes used intentionally).

Sample Programs

Simple switch case:

```
java
int day = 3;
switch(day) {
    case 1: System.out.println("Monday"); break;
    case 2: System.out.println("Tuesday"); break;
    case 3: System.out.println("Wednesday"); break;
    default: System.out.println("Invalid day");
}
```

Switch with String:

```
java
String fruit = "Apple";
switch(fruit) {
    case "Apple": System.out.println("Red or green fruit"); break;
    case "Banana": System.out.println("Yellow fruit"); break;
    default: System.out.println("Unknown fruit");
}
```

Interview Questions and Answers

What is the switch statement in Java?

A control statement that allows a variable to be tested for equality against a list of values with corresponding actions.

Which data types are allowed in switch expressions?

Primitive types like byte, short, int, char, enumerations (enum), and from Java 7 onwards, String.

What happens if you omit break statements?

Control falls through to the next case, executing its code too, which can cause

bugs if unintended.

Is the default case mandatory?

No, but it's good practice to include it to handle unexpected values.

Can you use ranges in switch cases?

No, switch checks only exact matches, ranges require if-else.

How is switch different from if-else chain?

Switch is more readable and efficient for discrete value checks, especially when many cases exist.

Can you select multiple cases for the same block?

Yes, by stacking cases without breaks:

```
java
case 1:
case 2:
    // statements for both 1 and 2
    break;
```

When was String support added in switch?

Since Java 7.

Does switch support floating-point types?

No, float and double are not allowed in switch expressions.

What is fall-through in switch?

Execution of subsequent cases regardless of case match because of missing break.

Assignments

Write a switch case program to print the day of the week given a number 1-7.

Use switch-case to convert a month number to month name.

Implement a simple calculator using switch-case for +, -, *, / operations.

Write a program that uses String switch-case to print fruit colors.

Demonstrate fall-through in switch-case with and without breaks.