LETS LEARN JAVA

CODE CONSTRUCTION

Training Plan - Basics

Topics to be covered

Programming constructs – conditionals
Mixing and Enhancing Conditions with operators

Handling repetitive tasks through looping
Looping Constructs

How to debug code

Topic – **Method Definitions in Java**

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Adding Conditions in Code

Normal IF ELSE

Nested IF ELSE

IF ELSE LADDER

SWITCH Statement

Lets program below scenarios

- If the age of a person is greater than 18 then he is eligible to vote

- If age is greater than 60, then status is senior citizen, and if age is less than 22 then status is student, else status is professional

- Accept what a student is studying (10th, 12th, Grad, PostGrad). Depending on that, print message as to what could be his next career option. Use Ladder IF-ELSE and then SWITCH statement

- Find out the first letter of a word and state if it starts with a vowel or consonant. Use IF ELSE and then SWITCH statement

Enhancing Conditions using Operators

- Multiple Operator Types to support different types of calculations and expressions.
- Non exhaustive list of operators are as below. Ones in red are most commonly used:
  - Unary Operators [expr++, expr--, ++expr, --expr, !, ~]
  - Arithmetic Operators [+, -, *, /, %]
  - Assignment Operators [=, +=, -=]
  - Relational Operators [>, <, >=, <=, ==, !=, instanceof] // How to compare two objects?
  - Logical Operators
    - Logical standard Operators [&&, ||]
    - Logical Bitwise Operators [&, |, ^]
  - Ternary Operator [? :]

Let's do hands on to understand these important operators

Doing same thing again and again... Loops

Loops using for

Loops using while

Loops using do.. while

Loop using enhanced-for

Using Streams and Lambda Expressions for looping (Advanced)

Lets program below scenarios

- Printing a table using a for loop

- Same scenario using while and do-while techniques

- Accept a set of 10 numbers, put them in an array, and do the following:

  - Print them in a loop

  - Print only odd numbers

  - Print squares of only those even numbers that are greater than 10

  - Find sum of cubes of odd numbers less than 10

- Advanced for loop for same scenarios

- Using streams and Lambda expression for same scenarios (advanced Java)

When it gets complex, lets use debugger

- See how debugger is used

- Breakpoints

- "Debug as"

- Debug perspective..

- Step in and step out features (F5, F6, F8)

- Inspect element to see the value

That's all for now. Please practice below

Consider an array of Strings below.

```
String[] subjects = new String[] { "C", "C++", "Java", "MongoDB", "Oracle", "Spring", "Selenium" };
```

Write programs to do the following:

1. Print all subjects in new line
2. Print all subjects starting with C or S
3. Print subjects where length is more than 5

Write a program to accept dimensions of a matrix (n x m), then scan all values and then print the matrix. Use debugger as needed.