CSE 215: Programming Language II Lab

Lab – 2

Comparison operators, Conditional Statements

Objective:

- To learn to use comparison operators
- To learn to use conditional statements (if-else, if-else if-else, switch case, ternary operator)

Boolean Expressions

Comparison Operators **Boolean Operators**

Operator	Name	Operator	Name
==	Equal to	!	NOT
!=	Not equal to	&&	AND (both)
<	Less than	||	OR (any one or both)
>	Greater than	^	Exclusive OR (any one but **not** both)
<=	Less than or equal to		
>=	Greater than or equal to		

Mostly similar to how things are in C language.

The reason why ^ doesn't work as the exponent operator in Java is due to the fact that it is used as the X-OR operator!

The comparison operators yield a Boolean result (true or false)

Conditional statements

Based on some condition, execute a select block of code.

if-else	switch case	ternary operator
Standard conditional statement	Useful if your code turns out to have multiple "else if" clauses	Shorthand notation for an if-else block, sometimes useful

`if (condition) {`
`  // code`
`} else {`
`  // code`
`}`
 	
`if (condition1) {`
`  // code`
`} else if (condition2) {`
`  // code`
`} else if (condition3) {`
`  // code`
`}`
`...`
`else if (conditionN) {`
`  // code`
`} else {`
`  // code`
`}`
	`switch (conditionVar) {`
	`  case 1:`
	`  // code`
	`  break;`
	`  case 2:`
	`  // code`
	`  break;`
	`  case n:`
	`  // code`
	`  break;`
	
	`  default:`
	`  // code`
	`  break;`
	`}`
		`int number = 1;`
		
		`String msg = (number == 1) ?`
		`  "variable number is 1" :`
		`  "variable number is not 1";`
		
		`System.out.println(msg);`

Task:

1. Write a program that takes an integer and determines if it's odd or even. Use switch cases to produce result.

2. Write a program that takes an integer and determines if it's prime or not. A number is prime if it is divisible by 1 and itself only, i.e. 2, 3, 11, 37 etc.

3. Consider the given BMI ranges
   If your BMI is:

   below 18.5 – you're "underweight"
   between 18.5 and 24.9 – you're "healthy"
   between 25 and 29.9 – you're "overweight"
   between 30 and 39.9 – you're "obese"

Write a program that takes a decimal value as input from the user. Then print the quoted words above based on the range.

(a) Use if-else if-else
(b) Use ternary operator