Java

Decision making

Decision Making in Java

Contd.,

- In programming, decision making is similar to decision making in real life.
- In programming also we face some situations where we want to execute certain block of code when required condition fulfills.

Java's selection/decision statement

- if
- if-else
- nested-if
- if-else-if
- switch

if statement

- if statement is the most simple decision making statement. It is used to decide whether a certain statement or block of statements will be executed or not
- i.e if a certain condition is true then a block of statement is executed otherwise not.

Syntax

```
if (condition)
{
   // statements to execute ;
    // condition is true;
}
```

if-else

if statement:

if a condition is true it will execute a block of statements and if the condition is false it won't.

what if we want to do something else if the condition is false. Here comes the else statement.

else statement is used with if statement to execute a block of code when the condition is false.

Syntax:

```
 if (condition)
{
   statement;
    condition is true;
   execute this ‘if’ block
}
else
{
   Execute this ‘else’ block;
   if condition is false;
}
```

Compare two numbers

Operators	Description
>	greater than
<	less than
==	equal to
<=	less or equal to
>=	greater or equal to
!=	not equal to

And / Or operator

Operator	Description
&&	and
||	or

And Operator

Both given conditions to be true.

for example:

To check the given number is within the required range:

```
if ( x> 0 && x <=10)
{
System.out.print(“ Print number”+ x);
}
```

In this example we are checking if the given number is between 1 to 10.

Or Operator

Any of the two given conditions to be true.

for example:

To check the given number is either greater then 0 or less then and equal to 10 :

```
if ( x> 0 || x <=10)
{
System.out.print(“ Print number”+ x);
}
```

Practice question

- Write a java program which accepts two numbers and then display the greater of the two numbers.

For Example:

Enter the first number : 25

Enter the second number: 65

The greater of two numbers is: 65

Practice question 2

- A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years.
  Ask user for their first name ,last name ,salary and year of service and print the net bonus amount.
- If service years are less then 5 years print “Service years are less then 5 years”

For Example:

Enter your first & last name: Janet Green

Enter your Annual Salary: $120,000.00

Enter your years of service: 6

Your bonus will be: $6000.00

Practice question 3

- Write a java program which reads the length and breadth of a rectangle from user and check if it is square or not.

For Example:

Enter length: 56

Enter breadth: 56

It’s a Square.

Practice question 4

- Write a program which takes age of 3 people by user and determine oldest and youngest among them.

For example:

Enter the age of first one: 35

Enter the age of second one:25

Enter the age of third one:15

15 is the youngest and 35 is the oldest.

Methods

??? What is a method ???

Methods

Performing a task in a program requires a **method.**

The method houses the program statements that perform its tasks.

The **method** hide its statements from the user just like the mechanism of making the car go faster.

Contd.,

In Java, we create a program unit called a **class** to house the set of methods that perform the class's tasks.

e.g. Bank Account is a class

>Deposit ,

>Withdraw,

> Inquire

are its method

How to create a method

```
modifier return_type methodName(Parameters)
{

// Body of method //;
return {based on return _type);

}
```

Example

```
public int sum(int x, int y)
{
int result = x+y;
return result;
}
```

Contd.,

- public - modifier
- int – return_type
- method_name – name of the method
- x, y – formal parameters
- int x, int y – list of parameters.

Uses of methods

- Easy to de-bug.
- Reusability

Practice

- Complete your class Practice with the following methods:

- subtraction()
- division()