Software Requirements

* JDK 17 or later
* Eclipse IDE or command prompt and notepad

Java: Platform independent and object oriented programming language

Object Oriented programming language has 2 building blocks

1. class: Template of an object
2. object: Instance of a class

class Customer {   
 // properties & behaviors  
 // properties – variables  
 // behaviors - methods  
}  
Customer c1 = new Customer();

JDK: Java Development Kit

JRE: Java Runtime Environment

JVM: Java Virtual Machine

Java Fundamentals: Base for Java programmers

Datatypes

Operators

Conditions

Loops

Arrays

Datatypes: These are set of keywords which are used to create variables that can store some value, there are two types

1. primitive types – size is fixed
2. derived types (combination of primitives) – size varies

Primitive types

|  |  |
| --- | --- |
| Type | Size in bytes |
| byte | 1 (-128 to +127) |
| short | 2 |
| int | 4 |
| long | 8 |
| float | 4 |
| double | 8 |
| char | 2 (‘M’, ‘F’) |
| boolean | 1 (true, false) |

Derived types

1. class
2. arrays

Operators

++, --, <, >, <=, >=, ==, !=, +, -, \*, /

Conditional Statements

1. simple if
2. if & else
3. if, else if, else if …. else
4. switch

if(conditions) {   
  
}  
else if (conditions) {   
  
}  
else {  
  
}

Loops: It is to iterate the statements until some condition is true, there are 3 types of loops

1. for
2. while
3. do while

Activity:

1. Enter 3 digits numbers & print their digit with words  
   ex: 890 must print Eight Nine Zero
2. Enter 3 digits and add the highest digit and lowest digit and display the result  
   ex: 759 must add 9 + 5 and print 14
3. Create an array of some elements and display the maximum, minimum & sum of the array, using only one loop perform all the operations  
   ex: items = {7, 1, -1, 9, 10, 15, 8}, then maximum = 15, minimum = -1, sum = 49

Classes & Objects

Inside class you write variables, methods & constructors

variables: They store data of an object like id, name, salary, phone, email and etc

methods: They will have logics like display(), debit(), credit() and etc

constructors: They will have initialization logics