Revisit of Day6

1. Access Modifiers in JAVA [private, default/package, protected, public]
2. Non-Access Modifiers (behavior modifier) [static, final, abstract , transient]
3. Static – class level rather than instance level (Data is Shared by all objects) – Only one copy will be maintained
4. Final classes can’t be inherited (No child class be created with final class), Final methods can’t be overridden, final variables (constants) can’t be modified.
5. Abstract is used to declare abstract methods & class (Incomplete – non-concrete class/methods)
6. Transient – is used with serialization. Transient members will not be serialized, meaning transient member values will not be in stored in flat file (.txt file). Transient is used with variables only.
7. Control Statements [Simple for loop, enhanced for loop, while loop, do while loop, if, nested if, switch case etc.,]
8. Serialization is the process of storing the state of an object to a permanent storage.
9. Packages & Import statements (Is a way of organizing the java source code and resolving naming conflicts of classes with similar name)
10. Constructors – (No-Arg /Default constructor, All-arg/Parameterized constructor)

Agenda

Class & Object

OOP – Few concepts

Reading input from user using Scanner class.

In Java, Everything is Object. Java is a Object Oriented Programming Lang. Without a Class/Object we can’t do any operation.

Class – Is a blueprint

Object – Instance of a class.

A-Z = 26 alphabets

a-z = 26

0-9 = 10

Symbols, Operators

Type Casting – Converting from one primitive to another primitive type

Narrowing or widening (higher to lower) (lower to higher)

Type casting – is also called as type conversion process (Converting from one primitive form to another primitive form)

**Automatic type casting** – is also called **implicit type casting** – Conversion will happen automatically. **Widening** process

**Manual type casting** – is also called as **explicit type casting** – Conversion & checking will happen at the same time. – **Narrowing**

Converting bigger value to smaller value (target can hold the data or not – check it before conversion)

OOPs – Object Oriented Programming (Is a generic concept, that can be implemented in any programming lang)

POP – Procedure Oriented Programming

8 primitive data types

boolean (1 bit) –>byte(1) –> short(2) –> char(2) –> int(4) – >float(4) –> double(8) ->long (8) [widening/ implicit / auto type casting] – smaller to bigger

boolean (1 bit) <–byte(1) <– short(2) <– char(2) <–int(4) <– float(4) <– double(8) <-long (8)

[Narrowing/ explicit /manual type casting] – bigger to smaller – type casting is required (target data\_type)

In java, everything is Object.

Car is an Object, Vehicle is an Object, Human beings are objects.

Convert any real world entity as Object in JAVA. Class & Object

Class will consist of State & Behavior

State represents properties

Behavior represents operations

Car - name, yearOfMfg, engineType,noOfTires, noOfGears, gearType, speed, ….. – properties/ state (primitives or Object will be used here)

Methods/**behavior** – it represents some functions (**operations**) that can use the member variables/properties and change it’s values - accelerate(), applyBreak(), changeGear()

Class – Member variables (private) + Member methods (public) – blue print/template/prototype

Properties/ instance members are called as attributes of class

Object –

OOPs – Object Oriented Programming

1. Abstraction – Hiding implementation
2. Inheritance – Reusing existing code (Parent/Child/grandchildren) (grandparent/Parent/Child)
3. Encapsulation – hiding the data (making the state as private member, making the methods as public)
4. Polymorphism – Same name but many form

Has-a relationship – composition

IS-a relationship - Inheritance