1. What is the concept of oops?

Object oriented programing is a concept which is based on concept of object that contains data and methods. The purpose of oops is to increase flexibility and reusability of programs. Object oriented programing brings together data and its behaviors in a single location of an object and makes it easier to understand how a program works.

1. What is an object?

An object is a collection of data and its behavior which is called a method and objects have two characteristics like states and behaviors

For an example

Object: A bus which has a state and behavior like color, weight and shape is a state of a bus and behavior is a speed and brakes.

1. What is class?

A class is a template of objects where we can create as many as object as we like, a class defines object properties including a range of valid values and default values. A class also describes an object behavior.

1. What is the difference between reference and object?

When we create an object of a class using new keyword, that object assign a refence which is indicate a address where object variable and method are stored

1. What is a constructor and advantage?

A constructor is a block of code or special method which is used to initialize an object, the constructor is called when an object of a class is created.

Constructor type:

* Default constructor: if we do not implement any constructor in your class, java compiler will insert a default compiler in your code which is called default compiler
* Parameterized constructor: when we implement a constructor with an argument which is called a parameterized constructor

Advantage: constructor eliminate placing default values; constructor eliminate calling the normal method implicitly.

Note: constructor overloading is possible but not overriding, constructor name should be same as class name, constructor cannot be inherited.

1. What is the difference between constructor and method?

In java constructor are used to initialize the object of a class while method is performing a task of code executing in java code.

Constructor cannot be private, final or static but in method can be

Constructor do not have return type, but method have.

1. What is the abstraction?

One of the most fundamentals concept of OOPs is abstraction. Abstraction is a process where we can show only relevant data and hide unnecessary details from the user.

Note: abstraction in java can be achieved using abstract class and abstract method

1. What is abstract class and abstract method?

An abstract class: is a class that is declared with abstract keyword, it may or may not include abstract methods. abstract class cannot be predefined or instantiated

An abstract method: is a method that is declared without implement, abstract method declared using abstract keyword.

These cannot abstract

* Constructor
* Static methods
* Privates methods
* Final

1. What is interface and its uses in java?

Interface in java is a mechanism to full achieve abstraction, interface looks like a class but not a class, an interface can have methods and variables that is declared in the interface and by default its abstract without implementation of body.

Since methods in interface they do not have a body, they have to be implemented before you can access them, the class that implement interface must implement all the methods of that interface, as we know java doesn’t support multiple inheritance but we can create more than one interface in our class.

1. What is nested class or interface?

A class or interface which is declared inside a class or interface is called nested class or interface, they are also known as inner class or interface.

1. Encapsulation in java and advantage?

The whole idea of encapsulation is to hide the implementation details from the users, if a data member is private it means it can only be accessed within the same class. We cannot access from the outside of a class. We can only access a variable value using set and get method of a class., setter and getter methods in the class set and get the values of the fields.

Advantage: It improves maintainability and reusability and flexibility. At some point if you want to change the implementation of a class, you can do it freely without affecting the class by encapsulation.

1. What is inheritance and advantage in java?

It is a process where a child class can acquire data members and methods from its base class or parent class. Inheritance allow us to reuse a code and it improves reusability in our application.

Advantage: the biggest advantage is we do not need to rewrite a code in the child class except unique code.

Child class: the class that extend the features and functionalities from another class known as child class, sub or derived class.

Parent class: a class whose properties and functionalities are used by another class is known as parent, super or base class.

Note: if we declare a class variable as private, we cannot access this variable from the outside of class, but we can access private variable using getter and setter methods of supper class.

Single inheritance: when one class extend another class only one is known as single inheritance

Multiple inheritance: java doesn’t support multiple inheritance but refer to the concept of one class can extend more than one base class.

1. Super keyword in java and advantage?

The super keyword refers to the object of parent class or base class, whenever you create an instance for subclass, an instance of super class is created implicitly which is referred by super keyword.

Note: the uses of super keyword

1. To access a data members of parent class, that means when a parent and child class have same method name
2. To explicitly call no-argument and parameterized constructor of parent class
3. To access method of parent class when child class has overridden the method.
4. Method overloading in java?

Method overloading: method overloading is a feature that allow a class to have more than one method with same name, instead of the arguments are different

Note: three ways to overload a method

1. Numbers of parameters
2. Data type of parameters
3. Sequence of data type of parameters

* If the method name is same, parameters is same, and data have different of return than not a valid method overloading.

1. What is method overriding and advantage?

Method overriding is an object-oriented feature that allow a superclass or child class to provide a specific implementation of that method that is already provided by one of its parent’s class.

1. polymorphism in java and advantage?

polymorphism is an object-oriented feature that allow to perform a single method in different way. That means a method can do different things based on object.

1. Polymorphism types in java?

There are two type of polymorphism in java is:

Static polymorphism: static polymorphism is known as compile time polymorphism that is defined during complier time is known as static polymorphism, method overloading in an example of static polymorphism

Dynamic polymorphism: dynamic polymorphism is known as run-time polymorphism. Dynamic polymorphism is a process in which a call to an overridden method that is resolved at run-time that’s why it is called run-time polymorphism.

1. Static keyword in class, block, methods and variable in java?

Static: static keyword can be used with class, method, variable and block, static keyword belongs to the class instead of the specific instance, this mean if you make a data static, you can access without creating object.

Static single block: static block is used initializing the instance variable, that block gets executed when the class loaded in the memory.

Static multiple block: first block overwrites by second block.

Static method: static variable can be accessed directly in static method.

Static class: a class can be made static if it is a nested class.

Note: that mean static member are common for all instance object of a class, static variable is also known as class variable