**125 checklist questions on OOPS**

**Encapsulation**

1. Can we declare and initialize static field in inside method?
2. Can we declare and initialize final field in inside method?
3. Can we access static field value in non-static method?
4. Can we access static field value in static method?
5. Can we access non-static field value in non-static method?
6. Can we access non-static field value in static method?
7. What will happen if we make class, method and data as final?
8. What will happen if we make class, method and data as static?
9. Scope of public, private and protected access modifiers?
10. Can we access private field value into another class?
11. How to create singleton class?
12. Why do we use singleton class?
13. How to create immutable class and what is it’s use?
14. How to achieve thread-safety in singleton class?
15. What is object declaration and object initialization?
16. Why do we use constructor?
17. Can we initialize object without constructor?
18. Can we create object without constructor?
19. Can we initialize static variable in constructor?
20. Can we override constructor? If yes, how? and if not why?

**Inheritance**

1. How do you prevent a class from inheritance?
2. How do you restrict a member of a class from inheriting by its sub classes?
3. How do you restrict a method from overriding?
4. How do you access parent class method from child class in overriding case?
5. Explain difference between super and this keyword?
6. Can we access protected member into another class within same package?
7. Can protected members be accessed in outside another package?
8. How do I access a protected method from another package?
9. Can a class declared as private be accessed outside its package?
10. What if a method is declared with protected final?
11. When should you use override methods?
12. what are final methods in object class?
13. Why multiple inheritance is not allowed?
14. How does Java solve multiple inheritance?
15. Can one interface extend multiple interfaces?
16. Can we declare a method in interface with abstract keyword?
17. Can we restrict interface to do not allow to prepare more than one abstract method?
18. How to access interface default methods?
19. How to access interface static methods?
20. How to implement an interface method without taking extra class?
21. Can we prepare constructor in interface?
22. Can we prepare object for interface?
23. Can we declare a variable in interface without initializing it?
24. What is deadly diamond problem in Java?
25. Can we implement an interface method in class without public modifier?
26. Can we implement an interface method in class without @override annotation?
27. What is the use of lambda function in Java?
28. How to write lambda function without and with parameter?
29. How to write lambda function with single parameter?
30. How to write lambda function with single return statement?
31. Can we prepare interface without any members?
32. What is use of marker interface?
33. List out few marker interfaces?
34. List out few functional interfaces?
35. Use of Predicate, Consumer, Supplier & Function interfaces?
36. What is upcasting and downcasting in java
37. What is narrowing and widening in java

**Polymorphism**

1. Can we override static method?
2. Can we override final method?
3. Can we override instance method?
4. Can we overload static method?
5. Can we overload final method?
6. Can we overload instance method?
7. what is dynamic method dispatch in java
8. What is the difference between early binding and late binding in Java?
9. When to use overloading & overriding in Java Class?
10. **How is Inheritance useful to achieve Polymorphism in Java?**
11. **What are the advantages of Polymorphism?**
12. **What is Compile time polymorphism (Static polymorphism)?**
13. **What is Runtime Polymorphism (Dynamic Polymorphism)?**

**Abstract Class**

1. **What is Abstract in Java?**
2. **What is Abstract class in Java? How to define it?**
3. **Can abstract modifier applicable for variables?**
4. **What is Abstract method in Java?**
5. **Can an abstract method be declared as static?**
6. **Can an abstract method be declared with private modifier?**
7. **What is Concrete method in Java?**
8. **Is it possible to create an object of abstract class in Java?**
9. **Can an abstract class have constructor?**
10. **Is it possible to achieve multiple inheritance through abstract class?**
11. **Is it possible that an abstract class can have without any abstract method?**
12. **Why we have to declare a method**
13. **What is the difference between abstract class and concrete class?**
14. **Why abstract class has constructor even though you cannot create object?**
15. **Can one abstract class extend another concrete class**
16. **Can one abstract class extend another abstract class**
17. **Can class extend another abstract class and implement interface at a time?**

**Abstraction**

1. **What is Abstraction**
2. **What is the difference between Abstraction and Encapsulation?**
3. **How to achieve or implement Abstraction in Java**
4. **Is abstract class a pure abstraction in Java?**
5. **Is interface a pure abstraction in Java?**
6. **Is class a pure abstraction in Java?**
7. **What are SOLID properties**

**Inner Class**

1. What is inner class?
2. When to use inner classes?
3. How many types of inner classes do we have?
4. What is local inner class?
5. How to create object for static inner class?
6. How to create object for non-static inner class?
7. What is anonymous inner class?
8. When to use HAS-A relationship & when to use inner classes?
9. Can we create interface inside another interface?
10. Can we create interface inside class?
11. How to a class can implement nested interface methods?

**Packages**

1. What is difference between import and static import in Java?
2. What is difference between import and package keywords?
3. What is sub package and how to create it?
4. What is the default package for all java programs?
5. What is use of packages?
6. **How to compile a source code of Java that is created as a package?**
7. **Can we import same package twice?**
8. **Can we import package inside class?**
9. **Can we import package without import keyword?**
10. **What is API?**
11. **What type of Classes and Interfaces are given by collection API?**
12. **What type of Classes and Interfaces are given by reflection API?**
13. **What type of Classes and Interfaces are given by date & time API?**
14. **What type of Classes and Interfaces are given by stream API?**
15. **Where do you find java.lang package in your local system ?**
16. **What is JAR file?**
17. **How to create a reusable jar file?**
18. **How to create executable jar file?**
19. **How to additional classes to existing jar file?**
20. **How to use a jar file from IDE and Editors?**