## OOPS Features (Wave1Team1 Gang1)

* Object
* Class
* Encapsulation
* Polymorphism
* Abstraction
* Inheritance
* Coupling
* Cohesion
* Association
* Aggregation
* Composition

## Working of JVM (Wave1Team1 Gang2)

## Exception Handling and its Best Practices (Wave1Team2 Gang1)

## Java Collections: When to use What? (Refer: Java\_Collections.docx) (Wave1Team2 Gang2)

## SOLID Design Principles (What are the SOLID design principles?

**S** : https://springframework.guru/principles-of-object-oriented-design/single-responsibility-principle/

**O**: http://springframework.guru/open-closed-principle/

**L**: https://www.codeproject.com/Articles/595160/Understand-Liskov-Substitution-Principle-LSP

**I**: https://springframework.guru/principles-of-object-oriented-design/interface-segregation-principle/

D: <https://springframework.guru/principles-of-object-oriented-design/dependency-inversion-principle/>)

## (Wave2Team1Gang1)

## What are the Gof Design Patterns? (Wave2Team1Gang2)

1. Define all patterns.
2. Explain the following patterns

* The Singleton Pattern
* The Command Pattern
* Adapter
* Facade Patterns

## Java Generics and Lambda Expressions? (Wave2Team2Gang1)

Nio input output file handling

## Java FAQs (All Participants should be able to answer these questions during presentation)

Java is Pass by Value or Pass by Reference?

When to use switch, and when if-else?

Explain the static keyword. How static keyword behaves when used in variable, method, block? (<https://www.javatpoint.com/static-keyword-in-java>)

What is method overloading and overriding in Java? (<https://www.javatpoint.com/method-overloading-in-java>)

What are the different ways to iterate through loops in Java?

<http://crunchify.com/how-to-iterate-through-java-list-4-way-to-iterate-through-loop/>

What is static import?

What is try-with-resources in java?

What does super keyword do?

1.Difference of Sub-class and Inner Class

2.In Java classes, what are various access for specifiers

3.Give the purpose of static variables and static methods.

4.Define data encapsulation and tell about its significance

5.Define singleton class and provide examples about its usage

6. For Java programming questions, what is the meaning of loops and give its different types

7.What is the meaning of infinite loop? How it is being declared? 8.Difference of break statement and continue statement?

9.Difference of float variables and double variables in Java

10.Meaning of Java final keyword and give example

11.What is the meaning of ternary operator and provide example

12.Give the different types of the Java operators.

13.What is the meaning of default switch case and give an example of it

14.Give the base class in the Java and where it is derived

15.Can the main method in Java be applied in any data?

16.Give Java packages and its significance

17.Can you declare that a class is abstract without using abstract method?

18.Difference between interface and abstract class in Java

19.Performance implications of the interfaces over classes in abstract

20.In importing packing imports in Java, are the sub-packages also imported?

21.Can you declare that the main method in Java of the class as a private?

22.How can you able pass the argument to function through reference instead of using pass by value 23.How does the object in Java serialize?

24.When you should use the serialization?

25.It is important that a Try Block should be followed by Catch Block in terms of exception handling. 26.Is there a way on how you can skill the finally block of the exception even though some of the exception is occurring in exception block?

27.When constructor of class is invoke

28.Can class have many constructors?

29.Can you override the static methods of class?

30.Can you tell the output for public class superclass?

31.In Java, does a string is considered as data type?

32.In this sample, strings s1=” You are the Java expert”; how many strings objects are being created? 33.Why strings are called immutable in Java?

34.Difference between vector and array

35.What is the meaning of multi-threading?

36.Why the runnable interface is being used in the Java?

37.Give the 2 ways in Java implementing multi-threading

38.When there are many changes that being required in the data, which one should you used? StringBuffer or String

39.Give the purpose of using the break in every case of the switch statement

40.There is garbage collection in Java, how it is being done?

41.How can you execute a code before the main method?

42.Can class become a sub-class and super class at the same time? If yes, give example.

43.How can an object be created even though there is no any constructor that is defined in class? 44.How you can make sure that a resource is not being used by numerous threads simultaneously? 45.How can you call constructor of class?

46.If there are two classes and they are in same package. Can one of the private members can be accessed by object of the other class?

47.Can you have 2 methods in class having the same name?

48.How can you make a copy of Java object?

49.What is the benefit of using an inheritance?

50.What will be the default access specifier for the methods and variables of class?

51.Give example of using Pointers in the Java class.

52.How can you restrict inheritance in a class so that there will be no class that will inherit from it? 53.What is the access scope of the protected access specifier?

54.Difference between queue and stack

55.How can you disallow the serialization of the variables in Java?

56.How can you use the data type primitive as objects?

57.Which types of the exceptions are being caught at the compile time?

58.Tell about the different states of the thread

59.Can you use default constructor of class even if explicit constructor is being defined?

60.Can you override the method with the use of same method arguments and name with different types in return?

61.What is the output of public class operator Example?

62.If a person says that if he compiled a class in Java successfully without using main method, it is possible to do it.

63.Can you call non-static method from a static method inside?

64.Give two environment variables that can run Java programs.

65.Can variables be used in the Java without any initialization?

66.Can class be inherited in Java from over 1 class?

67.Can a constructor have different name aside from its class name in the Java?

68.Give the output of the ceil 3.7 and round 3.7.

69.Can you use go to in the Java in particular line?

70.Can dead thread started again?

71.In this class, public abstract final class test Class is correct?

72.Is JDK is being required on every machine in running the Java program?

73.Difference of equals method to == operator?

74.It is possible to define a method in the Java class, however; give its implementation in code of another language such as C.

75.How destructors are being defined in the Java?

76.Can a variable be static and local at the same time?

77.Can you have static methods in interface?

78.In class implementing of interface, can you change a value of any of the variable that is defined in interface?

79.Because of feature of Java, which is garbage collection, does Java does not go out of memory?

80.Can you have other return type aside from void?

81.If you want to re-reach an object that has been in garbage collection, is it possible?

82.How can manually throw the exception by the programmer?

83.How can you able to develop a class without accessing by other class?

84.

85.

86.How the objects are being stored in the Java?

87.How can you find the actual size of object on heap?

88.For example, three methods, four variables, no object and five methods, 3 variable, no object. Which one has more memory?

89.In the exception is not being handled, what will happen?

90.If you have multiple constructors that is defined in class, can you call constructor from another constructor?

91.What is the meaning of anonymous class?

92.Can you increase size of array after it is being declared?

93.If the application has many classes, can it have main method in one class?

94.In persisting data objects, what will be the best approach?

95.Can you compare Stringbuffer and string in Java?

96.In operating objects, which API is being provided by Java?

97.Can you cast other type to the Boolean type through type casting?

98.Can you use different return types of methods when it is overridden?

99.What will be the base class of all the exception classes?

100.What will be the order of the call of constructors in the inheritance?

**All Team should demonstrate this Task**

**Task 1:**

1. Create a Java class Robo structured in the package: com.stackroute.java.robo. In the Robo class, add a method public float compute(float num1, float num2, String operation)
2. Compile the Robo class from the command prompt
3. Package the program as a JAR file
4. Create a second class, Main.java in a separate package structure com.client.java with a main() method in it.
5. Accept user input of two numbers and an operation, such as add, subtract, multiply, and divide and call the compute() method of Robo.
6. Run the second Java program and test.