

Career Services Assignment 3 – Java Flash Cards

Points possible: 50

Category	Criteria	% of Grade
Completeness	All requirements of the assignment are complete.	100

Instructions: Research common Java interview questions online and create 20 flash cards from the information you find. Study your flash cards regularly to better prepare for interviews. Fill out the table below with the information you put on each of your flash cards.

Front of Card	Back of Card
What is JAVA?	<p>Java is a high-level programming language and is platform-independent.</p> <p>Java is a collection of objects. It was developed by Sun Microsystems. There are a lot of applications, websites, and games that are developed using Java.</p>
What are the features of JAVA?	<p>Features of Java are as follows:</p> <ul style="list-style-type: none"> • OOP concepts <ul style="list-style-type: none"> • Object-oriented • Inheritance • Encapsulation • Polymorphism • Abstraction • Platform independent: A single program works on different platforms without any modification. • High Performance: JIT (Just In Time compiler) enables high performance in Java. JIT converts the bytecode into machine language and then JVM starts the execution. • Multi-threaded: A flow of execution is known as a Thread. JVM creates a thread which is called the main thread. The user can create multiple threads by extending the thread class or by implementing the Runnable interface.

How does Java enable high performance?	Java uses Just In Time compiler to enable high performance. It is used to convert the instructions into bytecodes.
Name the Java IDE's?	Eclipse, NetBeans, and IntelliJ IDEA are three of the most popular IDE's of JAVA.
What do you mean by Constructor?	<p>Constructor can be explained in detail with enlisted points:</p> <ul style="list-style-type: none"> • When a new object is created in a program a constructor gets invoked corresponding to the class. • The constructor is a method which has the same name as the class name. • If a user doesn't create a constructor implicitly a default constructor will be created. • The constructor can be overloaded. • If the user created a constructor with a parameter, then he should create another constructor explicitly without a parameter.
What is meant by the Local variable and the Instance variable?	<p>Local variables are defined in the method and scope of the variables that exist inside the method itself.</p> <p>Instance variable is defined inside the class and outside the method and the scope of the variables exists throughout the class.</p>
What is a Class?	<p>All Java codes are defined in a Class. It has variables and methods.</p> <p>Variables are attributes which define the state of a class.</p> <p>Methods are the place where the exact business logic must be done. It contains a set of statements (or) instructions to satisfy the requirement.</p>
What is an Object?	<p>An instance of a class is called an object. The object has state and behavior.</p> <p>Whenever the JVM reads the "new()" keyword then it will create an instance of that class.</p>

What are the OOPs concepts?	OOPs concepts include: <ul style="list-style-type: none"> • Inheritance • Encapsulation • Polymorphism • Abstraction • Interface
What is Inheritance?	<p>Inheritance means one class can extend to another class. So that the codes can be reused from one class to another class. The existing class is known as the Super class whereas the derived class is known as a sub class. Inheritance is only applicable to the public and protected members only. Private members can't be inherited.</p>
What is Encapsulation?	Purpose of Encapsulation: <ul style="list-style-type: none"> • Protects the code from others. • Code maintainability.
What is Polymorphism?	<p>Polymorphism means many forms.</p> <p>A single object can refer to the super-class or sub-class depending on the reference type which is called polymorphism. Polymorphism is applicable for overriding and not for overloading.</p>
What is meant by Method Overriding?	<p>Method overriding happens if the sub-class method satisfies the below conditions with the Super-class method:</p> <ul style="list-style-type: none"> • Method name should be the same • The argument should be the same • Return type should also be the same <p>The key benefit of overriding is that the Sub-class can provide some specific information about that sub-class type than the super-class.</p>

What is meant by Overloading?	<p>Method overloading happens for different classes or within the same class.</p> <p>For method overloading, sub-class method should satisfy the below conditions with the Super-class method (or) methods in the same class itself:</p> <ul style="list-style-type: none"> • Same method name • Different argument types • There may be different return types <p>Note: Polymorphism is not applicable for method overloading.</p>
What is meant by Interface?	<p>Multiple inheritances cannot be achieved in java. To overcome this problem the Interface concept is introduced.</p> <p>An interface is a template which has only method declarations and not the method implementation.</p>
What is meant by Abstract class?	<p>We can create the Abstract class by using the “Abstract” keyword before the class name. An abstract class can have both “Abstract” methods and “Non-abstract” methods that are a concrete class.</p> <p>Abstract method: The method which has only the declaration and not the implementation is called the abstract method and it has the keyword called “abstract”. Declarations ends with a semicolon.</p>

<p>Difference between String, String Builder, and String Buffer.</p>	<p>String: String variables are stored in a “constant string pool”. Once the string reference changes the old value that exists in the “constant string pool”, it cannot be erased.</p> <p>String Buffer:</p> <ul style="list-style-type: none"> • Here string values are stored in a stack. If the values are changed then the new value replaces the older value. • The string buffer is synchronized which is thread-safe. • Performance is slower than the String Builder. <p>String Builder: This is the same as String Buffer except for the String Builder which is not threaded safely that is not synchronized. So obviously the performance is fast.</p>
<p>Explain about Public and Private access specifiers.</p>	<p>Methods and instance variables are known as members.</p> <p>Public: Public members are visible in the same package as well as the outside package that is for other packages.</p> <p>Private: Private members are visible in the same class only and not for the other classes in the same package as well as classes in the outside packages.</p>
<p>Difference between Default and Protected access specifiers.</p>	<p>Default: Methods and variables declared in a class without any access specifiers are called default.</p> <p>Protected: Protected is the same as Default but if a class extends then it is visible even if it is outside the package.</p>

<p>Difference between Abstract class and Interface.</p>	<p>Abstract Class:</p> <ul style="list-style-type: none">• Abstract classes have a default constructor, and it is called whenever the concrete subclass is instantiated.• It contains Abstract methods as well as Non-Abstract methods.• The class which extends the Abstract class shouldn't require the implementation of all the methods, only Abstract methods need to be implemented in the concrete sub-class.• Abstract class contains instance variables. <p>Interface:</p> <ul style="list-style-type: none">• It doesn't have any constructor and couldn't be instantiated.• The abstract method alone should be declared.• Classes that implement the interface should provide the implementation for all the methods.• The interface contains only constants.
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