



Career Services Assignment 3 – Java Flash Cards

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 the difference between JDK, JRE, JVM?	JDK stands for Java Development Kit, which is a software development kit for writing Java applications. JRE stands for Java Runtime Environment which is an environment that allows Java programs to run on a computer. JVM stands for Java Virtual Machine, which is a virtual machine that executes java byte-code.
What is the difference between ArrayList and LinkedList in Java?	ArrayList and LinkedList are both implementations of the List interface in Java. ArrayList is implemented as a resizable array, while LinkedList is implemented as a doubly-linked list. ArrayList provides constant-time access to its elements but linear-time access to its elements' position, while LinkedList provides constant-time position access but linear-time element access.
What is the purpose of the static keyword in Java?	The static keyword in Java is used to create a class-level variable or method that can be accessed without creating an instance of the class.
What is the difference between an abstract class and an interface in Java?	An abstract class is a class that cannot be instantiated and is designed to be subclassed. It can contain both abstract and non-abstract methods. An interface is a collection of abstract methods that define a set of actions that a class must implement.
What is the difference between checked and unchecked exceptions in Java?	Checked exceptions are exceptions that the Java compiler requires a method to handle or declare using the throws keyword. Unchecked exceptions are exceptions that do not need to be declared or caught at compile time.



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What is polymorphism in Java?	Polymorphism in Java refers to the ability of an object to take on many forms. This can be achieved through method overloading and method overriding.
What is the difference between overloading and overriding in Java?	Overloading refers to defining two or more methods in a class with the same name but different parameters. Overriding refers to redefining a method in a subclass that already exists in its superclass with the same name, return type, and parameters.
What is a Java bean?	A Java bean is a reusable software component that can be manipulated visually in a builder tool.
What is the purpose of the final keyword in Java?	The final keyword in Java is used to make a variable, method, or class immutable, meaning that it cannot be changed once it has been initialized or defined.
What is the difference between a constructor and a method in Java?	A constructor is a special method used to initialize an object when it is created, while a method is a set of instructions that perform a specific task.
What is the difference between a stack and a queue in Java?	A stack is a collection that stores elements in a last-in-first-out (LIFO) manner, while a queue stores elements in a first-in-first-out (FIFO) manner.
What is a Java thread and how does it differ from a process?	A thread is a lightweight process that can run concurrently with other threads within the same program. A thread differs from a process in that it shares the same memory space as other threads in the program.
What is the purpose of the synchronized keyword in Java?	The synchronized keyword in Java is used to control access to shared resources in a multi-threaded environment. It ensures that only one thread at a time can access a shared resource, preventing race conditions and other concurrency issues.
What is the difference between a HashSet and a TreeSet in Java?	HashSet and TreeSet are both implementations of the Set interface in Java. HashSet stores elements in a hash table, while TreeSet stores elements in a red-black tree. HashSet provides constant-time performance



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	for basic operations but does not guarantee order, while TreeSet guarantees order but provides slower performance for some operations.
What is the difference between a HashMap and a TreeMap in Java?	HashMap and TreeMap are both implementations of the Map interface in Java. HashMap stores key-value pairs in a hash table, while TreeMap stores key-value pairs in a red-black tree. HashMap provides constant-time performance for basic operations but does not guarantee order, while TreeMap guarantees order but provides slower performance for some operations.
What is the purpose of the transient keyword in Java?	The transient keyword in Java is used to indicate that a variable should not be serialized when the object is written to a file or over the network. This is useful for preventing sensitive data from being exposed.
What is the difference between a private and a protected method in Java?	A private method can only be accessed within the same class, while a protected method can be accessed within the same class and its subclasses.
What is the purpose of the assert keyword in Java?	The assert keyword in Java is used to test assumptions about the state of the program at runtime. If the assertion fails, an AssertionError is thrown.
What is the difference between a do-while loop and a while loop in Java?	A while loop repeatedly executes a block of code while a condition is true, while a do-while loop executes the block of code at least once and then repeatedly executes it while a condition is true.
What is the purpose of the try-catch-finally block in Java?	The try-catch-finally block in Java is used to handle exceptions. Code that may throw an exception is placed in the try block, and any exceptions are caught and handled in the catch block. The finally block is used to execute code that should always be run, regardless of whether an exception is thrown or not.



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