**Lý do chọn hibernate thay vì JDBC**

**Xem lại throw và throws, try catch finally**

**declare: khai báo**

instantiated

initialized

immutable: bất biến (ko thay đổi)

StringBuffer Class is synchronized and StringBuilder is not synchronized

What is an aggregate object?

 An instance which has other objects

What are the things we have to follow while creating annotations?

methods must not have any throws clauses

methods must not have any parameters

method should return any one of primitive data types

* What is the size of char variable? 16 bit
* What is the size of boolean variable?16 bit
* Which of the following is a thread safe? tringBuffer - synchronized
* Method Overriding is an example of Dynamic Binding.
* Static functions can be accessed using null reference the size of short variable? 16bit
* **What kind of variables a class can consist of?**

class variables (static), local variables (inside method), instance variables (inside class but not static)

* **What is a marker interface?**

marker interface is an interface with no method.

* **List any five features of Java?**

Some features include Object Oriented, Platform Independent, Robust, Interpreted, Multi-threaded

* **How Java enabled High Performance?**

Java uses Just-In-Time compiler to enable high performance. Just-In-Time compiler is a program that turns Java bytecode, which is a program that contains instructions that must be interpreted into instructions that can be sent directly to the processor.

* Some Java keywords are import, super, finally, etc.
* Singleton class control object creation, limiting the number to one but allowing the flexibility to create more objects if the situation changes.
* **What do you mean by synchronized Non Access Modifier?**

Java provides these modifiers for providing functionalities other than Access Modifiers, synchronized used to indicate that a method can be accessed by only one thread at a time.

* **According to Java Operator precedence, which operator is considered to be with highest precedence?**

Postfix operators i.e () [] . is at the highest precedence.

**- What is the difference between StringBuffer and StringBuilder class?**

Use StringBuilder whenever possible because it is faster than StringBuffer. But, if thread safety is necessary then use StringBuffer objects.

* **Which package is used for pattern matching with regular expressions?**

java.util.regex package is used for this purpose.

java.util.regex consists of three classes − Pattern class, Matcher class and PatternSyntaxException class.

* **Finalize()**

It is possible to define a method that will be called just before an object's final destruction by the garbage collector. This method is called finalize( ), and it can be used to ensure that an object terminates cleanly.

* **What do you mean by Checked Exceptions?**

It is an exception that is typically a user error or a problem that cannot be foreseen by the programmer. For example, if a file is to be opened, but the file cannot be found, an exception occurs. These exceptions cannot simply be ignored at the time of compilation.

* **Explain Runtime Exceptions?**

It is an exception that occurs that probably could have been avoided by the programmer. As opposed to checked exceptions, runtime exceptions are ignored at the time of compliation.

* **Which are the two subclasses under Exception class?**

The Exception class has two main subclasses : IOException class and RuntimeException Class.

* **When throws keyword is used?**

If a method does not handle a checked exception, the method must declare it using the throwskeyword. The throws keyword appears at the end of a method's signature.

* **When throw keyword is used?**

An exception can be thrown, either a newly instantiated one or an exception that you just caught, by using throw keyword.

* **How finally used under Exception Handling?**

The finally keyword is used to create a block of code that follows a try block. A finally block of code always executes, whether or not an exception has occurred.

* **What is an applet?**

An applet is a Java program that runs in a Web browser. An applet can be a fully functional Java application because it has the entire Java API at its disposal.

* **An applet extend which class?**

An applet extends java.applet.Applet class.

* **Explain TreeSet?**

It is a Set implemented when we want elements in a sorted order.

* **Difference between throw and throws?**

It includes:

* Throw is used to trigger an exception where as throws is used in declaration of exception.
* Without throws, Checked exception cannot be handled where as checked exception can be propagated with throws.
* **What is JAR file?**

JAR files is Java Archive fles and it aggregates many files into one. It holds Java classes in a library. JAR files are built on ZIP file format and have .jar file extension.

* **What is a WAR file?**

This is Web Archive File and used to store XML, java classes, and JavaServer pages. which is used to distribute a collection of JavaServer Pages, Java Servlets, Java classes, XML files, static Web pages etc.

**Define** **composition**?

Holding the reference of the other class within some other class is known as composition.

**What are the ways in which a thread can enter the waiting state?**

A thread can enter the waiting state by invoking its sleep() method, by blocking on IO, by unsuccessfully attempting to acquire an object's lock, or by invoking an object's wait() method. It can also enter the waiting state by invoking its (deprecated) suspend() method.

**How does multi-threading take place on a computer with a single CPU?**

The operating system's task scheduler allocates execution time to multiple tasks. By quickly switching between executing tasks, it creates the impression that tasks execute sequentially.

**What invokes a thread's run() method?**

After a thread is started, via its start() method of the Thread class, the JVM invokes the thread's run() method when the thread is initially executed.

**Does it matter in what order catch statements for FileNotFoundException and IOException are written?**

Yes, it does. The FileNoFoundException is inherited from the IOException. Exception's subclasses have to be caught first.

**What is the difference between yielding and sleeping?**

When a task invokes its yield() method, it returns to the ready state. When a task invokes its sleep() method, it returns to the waiting state.

**Why Vector class is used?**

The Vector class provides the capability to implement a growable array of objects. Vector proves to be very useful if you don't know the size of the array in advance, or you just need one that can change sizes over the lifetime of a program.

**What is synchronization?**

Synchronization is the capability to control the access of multiple threads to shared resources. synchronized keyword in java provides locking which ensures mutual exclusive access of shared resource and prevent data race.

**What class of exceptions are generated by the Java run-time system?**

The Java runtime system generates RuntimeException and Error exceptions.

**Under what conditions is an object's finalize() method invoked by the garbage collector?**

The garbage collector invokes an object's finalize() method when it detects that the object has become unreachable.

**What is the difference between an Interface and an Abstract class?**

An abstract class can have instance methods that implement a default behavior. An Interface can only declare constants and instance methods, but cannot implement default behavior and all methods are implicitly abstract. An interface has all public members and no implementation.

**What are the advantages of ArrayList over arrays?**

ArrayList can grow dynamically and provides more powerful insertion and search mechanisms than arrays.

**Describe life cycle of thread?**

A thread is a execution in a program. The life cycle of a thread include −

Newborn state

Runnable state

Running state

Blocked state

Dead state

**What is the difference between the >> and >>> operators?**

The >> operator carries the sign bit when shifting right. The >>> zero-fills bits that have been shifted out.

**What is the range of the short type?**

The range of the short type is -(2^15) to 2^15 - 1.

**Life cycle of an applet includes which steps?**

Life cycle involves the following steps −

Initialization

Starting

Stopping

Destroying

Painting

**What is a Socket?**

Sockets provide the communication mechanism between two computers using TCP. A client program creates a socket on its end of the communication and attempts to connect that socket to a server.

**Advantages of Java Sockets?**

Sockets are flexible and sufficient. Efficient socket based programming can be easily implemented for general communications. It cause low network traffic.

**Disadvantages of Java Sockets?**

Socket based communications allows only to send packets of raw data between applications. Both the client-side and server-side have to provide mechanisms to make the data useful in any way.

**What is daemon thread?**

Daemon thread is a low priority thread, which runs intermittently in the back ground doing the garbage collection operation for the java runtime system.

**What is the difference between inner class and nested class?**

When a class is defined within a scope of another class, then it becomes inner class. If the access modifier of the inner class is static, then it becomes nested class.