

If a thread attempts to execute a synchronized method or synchronized statement and is unable to acquire an object's lock, it enters the waiting state until the lock becomes available.

94. What is the difference between the Reader/Writer class hierarchy and the InputStream/OutputStream class hierarchy?

The Reader/Writer class hierarchy is character-oriented, and the InputStream/OutputStream class hierarchy is byte-oriented.

95. What classes of exceptions may be caught by a catch clause?

A catch clause can catch any exception that may be assigned to the Throwable type. This includes the Error and Exception types.

96. If a class is declared without any access modifiers, where may the class be accessed?

A class that is declared without any access modifiers is said to have package access. This means that the class can only be accessed by other classes and interfaces that are defined within the same package.

97. What is the SimpleTimeZone class?

The SimpleTimeZone class provides support for a Gregorian calendar.

98. What is the Map interface?

The Map interface replaces the JDK 1.1 Dictionary class and is used to associate keys with values.

99. Does a class inherit the constructors of its superclass?

A class does not inherit constructors from any of its superclasses.

100. For which statements does it make sense to use a label?

The only statements for which it makes sense to use a label are those statements that can enclose a break or continue statement.

101. What is the purpose of the System class?

The purpose of the System class is to provide access to system resources.

102. Which TextComponent method is used to set a TextComponent to the read-only state?

setEditable()

103. How are the elements of a CardLayout organized?

The elements of a CardLayout are stacked, one on top of the other, like a deck of cards.

104. Is &&= a valid Java operator?

No, it is not.

105. Name the eight primitive Java types.

The eight primitive types are byte, char, short, int, long, float, double, and boolean.

106. Which class should you use to obtain design information about an object?

The Class class is used to obtain information about an object's design.

107. What is the relationship between clipping and repainting?

When a window is repainted by the AWT painting thread, it sets the clipping regions to the area of the window that requires repainting.

108. Is "abc" a primitive value?

The String literal "abc" is not a primitive value. It is a String object.

109. What is the relationship between an event-listener interface and an event-adaptor class?

An event-listener interface defines the methods that must be implemented by an event handler for a particular kind of event. An event adapter provides a default implementation of an event-listener interface.

110. What restrictions are placed on the values of each case of a switch statement?

During compilation, the values of each case of a switch statement must evaluate to a value that can be promoted to an int value.

111. What modifiers may be used with an interface declaration?

An interface may be declared as public or abstract.

112. Is a class a subclass of itself?

A class is a subclass of itself.

113. What is the highest-level event class of the event-delegation model?

The java.util.EventObject class is the highest-level class in the event-delegation class hierarchy.

114. What event results from the clicking of a button?

The ActionEvent event is generated as the result of the clicking of a button.

115. How can a GUI component handle its own events?

A component can handle its own events by implementing the required event-listener interface and adding itself as its own event listener.

116. What is the difference between a while statement and a do statement?

A while statement checks at the beginning of a loop to see whether the next loop iteration should occur. A do statement checks at the end of a loop to see whether the next iteration of a loop should occur. The do statement will always execute the body of a loop at least once.

117. How are the elements of a GridBagLayout organized?

The elements of a GridBagLayout are organized according to a grid. However, the elements are of different sizes and may occupy more than one row or column of the grid. In addition, the rows and columns may have different sizes.

118. What advantage do Java's layout managers provide over traditional windowing systems?

Java uses layout managers to lay out components in a consistent manner across all windowing platforms. Since Java's layout managers aren't tied to absolute sizing and positioning, they are able to accommodate platform-specific differences among windowing systems.

119. What is the Collection interface?

The Collection interface provides support for the implementation of a mathematical bag - an unordered collection of objects that may contain duplicates.

120. What modifiers can be used with a local inner class?

A local inner class may be final or abstract.

121. What is the difference between static and non-static variables?

A static variable is associated with the class as a whole rather than with specific instances of a class. Non-static variables take on unique values with each object instance.

122. What is the difference between the paint() and repaint() methods?

The paint() method supports painting via a Graphics object. The repaint() method is used to cause paint() to be invoked by the AWT painting thread.

123. What is the purpose of the File class?

The File class is used to create objects that provide access to the files and directories of a local file system.

124. Can an exception be rethrown?

Yes, an exception can be rethrown.

125. Which Math method is used to calculate the absolute value of a number?

The abs() method is used to calculate absolute values.

126. How does multithreading 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.

127. When does the compiler supply a default constructor for a class?

The compiler supplies a default constructor for a class if no other constructors are provided.

128. When is the finally clause of a try-catch-finally statement executed?

The finally clause of the try-catch-finally statement is always executed unless the thread of execution terminates or an exception occurs within the execution of the finally clause.

129. Which class is the immediate superclass of the Container class?

Component

130. If a method is declared as protected, where may the method be accessed?

A protected method may only be accessed by classes or interfaces of the same package or by subclasses of the class in which it is declared.

131. How can the Checkbox class be used to create a radio button?

By associating Checkbox objects with a CheckboxGroup.

132. Which non-Unicode letter characters may be used as the first character of an identifier?

The non-Unicode letter characters \$ and _ may appear as the first character of an identifier

133. What restrictions are placed on method overloading?

Two methods may not have the same name and argument list but different return types.

134. What happens when you invoke a thread's interrupt method while it is sleeping or waiting?

When a task's interrupt() method is executed, the task enters the ready state. The next time the task enters the running state, an InterruptedException is thrown.

135. What is casting?

There are two types of casting, casting between primitive numeric types and casting between object references. Casting between numeric types is used to convert larger values, such as double values, to smaller values, such as byte values. Casting between object references is used to refer to an object by a compatible class, interface, or array type reference.

136. What is the return type of a program's main() method?

A program's main() method has a void return type.

137. Name four Container classes.

Window, Frame, Dialog, FileDialog, Panel, Applet, or ScrollPane

138. What is the difference between a Choice and a List?

A Choice is displayed in a compact form that requires you to pull it down to see the list of available choices. Only one item may be selected from a Choice. A List may be displayed in such a way that several List items are visible. A List supports the selection of one or more List items.

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

The Java runtime system generates RuntimeException and Error exceptions.

140. What class allows you to read objects directly from a stream?

The `ObjectInputStream` class supports the reading of objects from input streams.

141. What is the difference between a field variable and a local variable?

A field variable is a variable that is declared as a member of a class. A local variable is a variable that is declared local to a method.

142. 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.

143. How are `this()` and `super()` used with constructors?

`this()` is used to invoke a constructor of the same class. `super()` is used to invoke a superclass constructor.

144. What is the relationship between a method's throws clause and the exceptions that can be thrown during the method's execution?

A method's throws clause must declare any checked exceptions that are not caught within the body of the method.

145. What is the difference between the JDK 1.02 event model and the event-delegation model introduced with JDK 1.1?

The JDK 1.02 event model uses an event inheritance or bubbling approach. In this model, components are required to handle their own events. If they do not handle a particular event, the event is inherited by (or bubbled up to) the component's container. The container then either handles the event or it is bubbled up to its container and so on, until the highest-level container has been tried.

In the event-delegation model, specific objects are designated as event handlers for GUI components. These objects implement event-listener interfaces. The event-delegation model is more efficient than the event-inheritance model because it eliminates the processing required to support the bubbling of unhandled events.

146. How is it possible for two `String` objects with identical values not to be equal under the `==` operator?

The `==` operator compares two objects to determine if they are the same object in memory. It is possible for two `String` objects to have the same value, but located in different areas of memory.

147. Why are the methods of the `Math` class static?

So they can be invoked as if they are a mathematical code library.

148. What `Checkbox` method allows you to tell if a `Checkbox` is checked?

`getState()`

149. What state is a thread in when it is executing?

An executing thread is in the running state.

150. What are the legal operands of the `instanceof` operator?

The left operand is an object reference or null value and the right operand is a class, interface, or array type.

151. How are the elements of a `GridLayout` organized?

The elements of a `GridLayout` are of equal size and are laid out using the squares of a grid.

152. What is an I/O filter?

An I/O filter is an object that reads from one stream and writes to another, usually altering the data in some way as it is passed from one stream to another.