1. 1. what is the difference between arraylist and linkedlist, provide the scenarios for each one’s usage?

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| --- | --- |
| **ArrayList**   1. ArrayList internally uses a **dynamic array** to store the elements. 2. Manipulation with ArrayList is **slow** because it internally uses an array. If any element is removed from the array, all the bits are shifted in memory. 3. An ArrayList class can **act as a list** only because it implements List only. 4. ArrayList is **better for storing and accessing** data. | **Linkedlist**   1. LinkedList internally uses a **doubly linked list** to store the elements. 2. Manipulation with LinkedList is **faster** than ArrayList because it uses a doubly linked list, so no bit shifting is required in memory. 3. LinkedList class can **act as a list and queue** both because it implements List and Deque interfaces. 4. LinkedList is **better for manipulating** data. |

2.what is error page, how to create one in JSP?

Errorpage is used for handling exceptions in jsp.

In JSP, there are two ways to perform exception handling:

1. By **errorPage** and **isErrorPage** attributes of page directive
2. By **<error-page>** element in web.xml file

3. what are different type of tags available in JSP?

In JSP tags can be devided into 4 different types. These are:

1. **Directives** <%@ %>  
   In the directives we can import packages, define error handling pages or the session information of the JSP page.
2. **Declarations**<%! %>  
   This tag is used for defining the functions and variables to be used in the JSP.
3. **Scriplets**<% %>  
   In this tag we can insert any amount of valid java code and these codes are placed in \_*jspService*method by the JSP engine.
4. **Expressions**<%= %>  
   We can use this tag to output any data on the generated page. These data are automatically converted to string and printed on the output stream.
5. what are the ways to iterate over list? what is fail fast case in collections? how to overcome the same?

4 Ways those are..

Simple For loop

Enhanced For loop

Iterator

ListIterator

Fail fast case in collections is if we perform any operation or trying to change structure of collection while iterating it will give currontmodificationexception. To overcome this we use concurrentcollection classes.

6. what is the differnce between httpSession's getSession(), getSession(true) and getSession(false) methods which one is prefered?

getSession() : Returns the current session associated with this request, or if the request does not have a session, creates one.

getSession(true) : Returns the current HttpSession associated with this request, if there is no current session, returns a new session

getSession(false) : Returns the current HttpSession associated with this request, if there is no current session, returns null.

Among getSession(), getSession(true) and getSession(false), getSession() is preferred.

7. What is memory leakage? How to prevent the same?

The memory leakage is a situation when the garbage collector does not recognize the unused objects and they remain in the memory indefinitely that reduces the amount of memory allocated to the application. Because the unused objects still being referenced that may lead to OutOfMemoryError. It also affects the reliability of the application.

Prevention:

1. We need to pay close attention to our usage of static; declaring any collection or heavy object as static ties its lifecycle to the lifecycle of the JVM itself, and makes the entire object graph impossible to collect.

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8. Can we declare class as final?

Yes, we can declare class as final by using the final keyword. The final class cannot be inherited and so the final keyword is commonly used with a class to prevent inheritance

9. How can we ensure that a resource is not used by the multiple threads simultaneously in multi-threading?

In multi-threading, access to the resources which are shared among multiple threads can be controlled by using the concept of synchronization. Using synchronized keyword, we can ensure that only one thread can use shared resource at a time and others can get control of the resource only once it has become free from the other one using it.

10. What is cloning where is the cloning used?

The object cloning is a way to create exact copy of an object. The clone() method of Object class is used to clone an object.The java.lang.Cloneable interface must be implemented by the class whose object clone we want to create. If we don't implement Cloneable interface, clone() method generates CloneNotSupportedException.

Use of cloning:

The clone() method saves the extra processing task for creating the exact copy of an object. If we perform it by using the new keyword, it will take a lot of processing time to be performed that is why we use object cloning.