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LMS Assignment 4

1. What's the difference between final, finally? What is finalize()? *Final method cannot be overridden, final class cannot be extended and final variable cannot be reassigned. Finally is a keyword used in try catch block and code under finally executes irrespective of the exceptions. Finalize() is called by the garbage collector on an object that has been dereferenced.*
2. What's the difference between throw and throws?
   a. *Throw keyword is used inside a function when an exception is needed to be thrown while throws is used on the method signature when the statements can lead to exceptions*
   b. *Throw keyword is used to throw an exception explicitly one at a while throws can be used to declare multiple exceptions.*
   c. *Throw cannot propagate checked exceptions while throws is used to propagate the checked exceptions.*
   d. *Throw include the instance of the exception to be thrown while throws include the class of the exception to be thrown.*
3. What are the two types of exceptions? *Checked(checked at compile time) and unchecked exceptions(checked at runtime).*
4. What is error in java? *Error is a subclass of Throwable that tells that there is a problem and a reasonable java application should not try to catch that error.*
5. Exception is object, true or false? *True*
6. Can a finally block exist with a try block but without a catch? *Yes*
7. From java 1.7, give an example of the try-resource feature.
   Try(Connection connection = DatabaseConnection.getConnection();
   Statement stmt = connection.createStatement();){

   }catch(SQLException ex){

   }
8. What will happen to the Exception object after exception handling? *Will be collected by the garbage collector once it has been dereferenced.*
9. Can we use String as a condition in switch(str){} clause? *Yes, just make sure to check upper or lower case.*
10. What's the difference between ArrayList, LinkedList and vector?

Array list	LinkedList	vector
Not synchronized		synchronized
Implements list interface	Implement list and queue	Implements list interface
Increases its size by 50%		Increases by 100%
Uses dynamic array as its internal implementation	Uses doubly linked list as its internal implementation	

11. What's the difference between hashTable and hashMap?

a. *hashmap is not synchronized while hashtable is synchronized.*
b. *Hashmap allows one null key and multiple null values while hashtable doesn't allow any null key and value.*
c. *Hashmap has high performance while hashtable is low performance.*

12. What is static import? *This concept allows static members of a class to be accessed directly without a class name or any object.*
13. What is static block? *Is a set of code that is run only once when the class is loaded into memory and it spans all instances of the class.*
14. Explain the keywords:
    a. Default: *as a modifier, when no other modifier has been assigned to variables. Default methods allow new functionality to be added to the interfaces of the libraries and ensure binary compatibility*
    b. *Break: used inside the loops and is used to terminate the loop.*
    c. *Continue: used to break out of execution of current iteration in a loop and proceed to the next iteration.*
    d. Synchronized*: synchronized keyword is used to ensure that one thread at a time can invoke a instance and static method, or enter a specific block of code.*
    e. Strictfp: *used for restricting floating point calculations and ensuring same result on every platform while performing operations in the floating point variable.*
    f. Transient: *it is used to avoid serialization. Any object defined as transient will not be serialized.*
    g. Volatile: *it is used to modify the value of a variable by different threads. Used to make class thread safe. Means that multiple threads can use a method and instance of the class at the same time without any problem.*
    h. InstanceOF: *used to test if an object is an instance of a specific class or an interface. Compares the instance with a type.*

My solution is in this repository: https://github.com/gkiprono/assignment-4.git