Assignment 2

1. Why we need packages in java?
   - To prevent naming conflicts, to control access, to make searching/locating and usage of classes, interfaces, enumerations and annotations easier. Also group related classes

2. What is the default imported package?
   - Java.lang

3. What is Class? What is Object?
   - Class: template used to create objects and to define object data types and methods.
   - Object: stores its state in fields (variables in some programming languages) and exposes its behavior through methods

4. Why we need constructor?
   - To initialize an object

5. What is the default value of local variable? What is the default value of instance variable?
   - Local variables are not initialized to any default value
   - Instance variables:
     - Number: 0
     - Boolean: false
     - Obj: null

6. What is garbage collection?
   - automatically free up memory space that has been allocated to objects no longer needed by the program.

7. The protected data can be accessed by subclasses or same package. True or false?
   - False, only by subclass in other or any class within the same package

8. What is immutable class?
   - once an object is created, we cannot change its content (ex: wrapper class)

9. What's the difference between "==" and equals method?
   - "== " checks if both objects point to the same memory location whereas . equals() evaluates to the comparison of values in the objects.

10. What is wrapper class?
    - It is used to convert primitive types (int , char , float , etc) into corresponding objects

11. What is autoboxing?

- The automatic conversion of primitive data type into its corresponding wrapper class is known as autoboxing

12. StringBuilder is threadsafe but slower than StringBuffer, true or false?
    - False, on the contray

13. Constructor can be inherited, true or false?
    - False, they are not members. Can be invoked from subclasses

14. How to call a super class's constructor?
    - By using keyword 'super' and passing appropriate parameters

15. Which class is the super class of all classes?
    - Class Object

16. Create a program to count how many files/folders are there inside one folder.
    - the count method should take a parameter called Criteria like this: count(Criteria criteria){}
    - For Criteria class, multiple conditions should be included such as: folder path, includeSubFolder or not, the extension of the file be counted and so on.
    - Optional: Take the input from keyboard.
    - Take care of the invalid inputs. Exception handling.
    - Get proper result displayed.
      "There are XXX file(s) and XXX folder(s) inside folder XXX with extension XXX." or something user friendly.