CORE -JAVA-THEORY

# CORE- JAVA

1. Interview Questions:
   1. Reverse a Given String:

* create a string to be reversed and assign it to the variable.
* use decremental for-loop.
* use str.length() & str.charAt() methods.
* logic.
  1. Count the number of words in the given String:
* Create a string (bug if there is space at the beginning then first trim and then split)
* Trim and split based on space and assign it to a string array.
* And use string array reference variable with length method to print number of words.
* Use for each loop statement to print all the words.
  1. To check number of opening and closing parenthesis and if same number print no error if not same print error.
* First use scanner class to take an input.
* Give 2 conditions to count ‘(‘ & ‘)’.
* Use for statement and use charAt method to compare and if it matches then increase the condition , continue as follows.
* Put if else condition for count1==count2 🡪 no error like that.
  1. Build A square of 5x5:
* Use nested for loop
* 1st loop has I <5; and it is used to go to next line.
* 2nd loop has i<5; and \* is printed.
  1. Build a right-angle triangle:
* It is same as square
* Here in 2nd loop just put if condition where all it should be blank that’s it.

1. MUTABLE AND IMMUTABLE:
   1. Mutable: is something where, class object keeps on changing.
   2. Immutable: here once object is created then its state cannot be altered.
2. Steps to create an immutable Class:

* Create a final class.
* Set the values of the variables/properties using only PUBLIC constructors.
* Make the properties as private and final.
* Do-not provide any setters.
* Example:
  + **final** **public** **class** Ex2 {

**private** **final** **int** age;

**private** **final** String name;

**public** Ex2(**int** age, String name) { // Initializing properties values.

**this**.age = age;

**this**.name = name;

}

**public** **static** **void** main(String[] args) {

Ex2 ex = **new** Ex2(20, "pankaj");

// object creation to assign values by calling constructor.

}

**public** String getName() { // getters

**return** name;

}

**public** **int** getAge() { // getters

**return** age;

}

}

1. String is immutable:

* Even if we reassign value to String’s reference variable it won’t change its values there itself, instead it will create new object and store in it. whereas past object will go for garbage collection so String class is IMMUTABLE.
* always use s1.equals(s2) to compare values of 2 Strings.
* Example 1(IMP):
  + String s1 = "pankaj"; //object 1 and stores pankaj in it.
  + String s2 = "pankaj"; // as values are same it will point to object 1 only
  + String s3 = "Pankaj"; // as java is case sensitive this will create new object2 and stores Pankaj.
* Example 2(IMP):
  + String s1 = new String("pankaj”) ;// creates a new object 1 and stores pankaj.
  + String s2 = "pankaj"; // even though s1 and s2 values are same still as s1 is manually created in new object so here it will create another object 2 and stores pankaj in it.
  + String s3 = "pankaj"; // as values are same it will point to object 2 as here no new object created manually.
  + String s4 = new String("pankaj"); // creates a new object 3 and stores pankaj.
    - s1 == s4 -> false
    - s2 == s1 -> false
    - s2 == s3 -> true
    - s2 == s4 -> false
    - s3 == s4 -> false
    - s3 == s1 -> false

1. String Constant pool:

* Where object of string is created and stored, it is called as string constant pool:

