JAVA ASSIGNMENT BOOK

MAKE A MOVE TO JAVA

Assignments

TASK ONE: BASIC EXERCISE

1. Swap two numbers using third variable as result name and do the same task without using any third variable.

2. Write a program to print the value given by the user.

3. Write a program to complete the task given below:

    - Ask the user to enter any 2 numbers in between 1-10 and add both of them to another variable call z.
    - Use z for adding 30 into it and print the final result by using variable results.

TASK TWO: OPERATORS AND DECISION MAKING STATEMENT

1. Write a program in JAVA to perform the following operation:

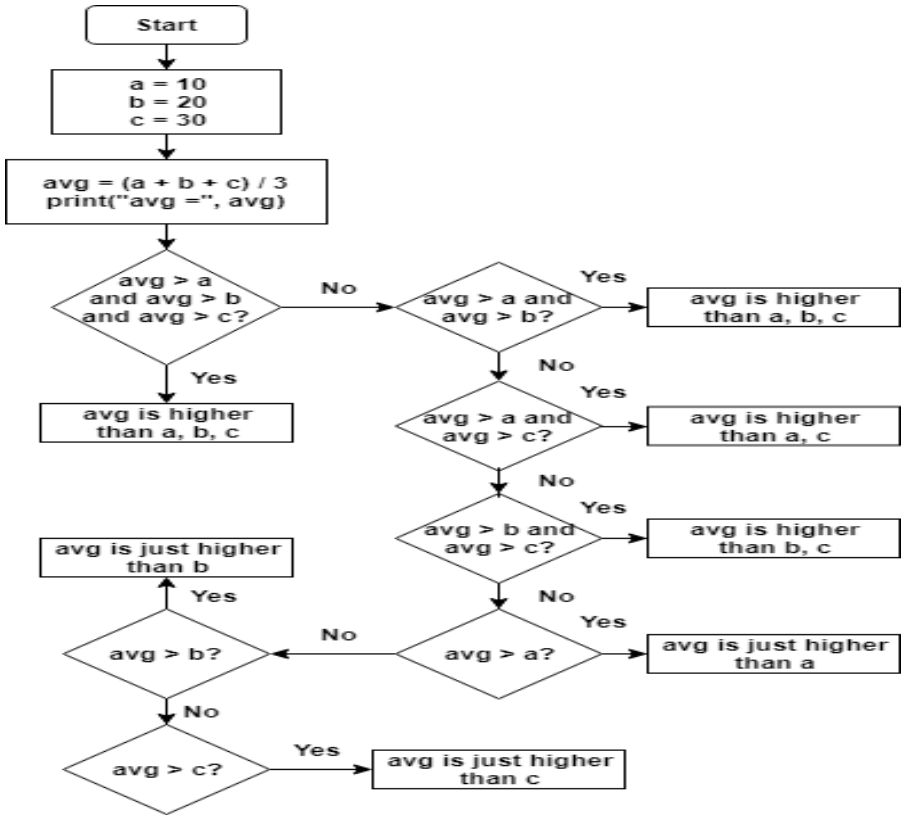
    - If a number is divisible by 3 it should print “Consultadd” as a string
    - If a number is divisible by 5 it should print “JAVA Training” as a string
    - If a number is divisible by both 3 and 5 it should print “Consultadd JAVA Training” as a string.

2. Write a program in JAVA to perform the following operator based task:

    - Ask user to choose the following option first:
        - If User Enter 1 - Addition
        - If User Enter 2 - Subtraction
        - If User Enter 3 - Division
        - If User Enter 4 - Multiplication
        - If User Enter 5 - Average

- Ask user to enter the 2 numbers in a variable for first and second(first and second are variable names) for the first 4 options mentioned above and print the result.
- Ask user to enter two more numbers as first1 and second2 for calculating the average as soon as user choose an option 5.
- At the end if the answer of any operation is Negative print a statement saying “Oops option X(1/2/3/4/5/) is returning the negative number”
- NOTE: At a time user can perform one action at a time.

3. Write a program in JAVA to implement the given flowchart:



4. Write a program in JAVA to break and continue if the following cases occurs:

- If user enters a negative number just break the loop and print “It’s Over”
- If user enters a positive number just continue in the loop and print “Good Going”

5. Write a program that prints all the numbers from 0 to 6 except 3 and 6.

Expected output: 0 1 2 4 5

6. Given an integer , perform the following conditional actions:

- If is odd, print NEW
- If is even and in the inclusive range of 2 to 5 , print OLD
- If is even and in the inclusive range of 6 to 30, print NEW
- If is even and greater than 30, print OLD

Complete the stub code provided in your editor to print whether or not is weird.

7. Write a Java program that reads a floating-point number and prints "zero" if the number is zero. Otherwise, print "positive" or "negative". Add "small" if the absolute value of the number is less than 1, or "large" if it exceeds 1,000,000.

8. Write a JAVA program which takes character input from the user,

    - If the character is from **r, a, n, d, o, m** (consider both upper and lower cases), then print FOUND.
    - Print NOT FOUND for all the other alphabets.

TASK THREE : LOOPING STATEMENTS

1. Write a simple program to print multiplication table of a certain number taken from user,

    For eg. 2 X 1 = 2

    2 X 2 = 4

    and so on.

2. Write a program in which:
    a. Take 10 values input from user using loop.
    b. Print sum of all the numbers provided
    c. Print the Average of those 10 values

3. Write a JAVA program that takes user input from 1 to 12 for months, and display number of days of a particular month. (Shows “Invalid Details“ if incorrect month number will be provided).

4. Write a JAVA program that takes one integer input n from the user, and display all the so, print sum of n natural numbers.

5. Write a JAVA program that takes long type input from user, and
    a. Calculate and display the number of digits.
    b. Calculate the sum of all the digits of the input.

6. Write a program that accepts three numbers from the user and prints "**INCREASING**" if the numbers are in increasing order, "**DECREASING**" if the numbers are in decreasing order, and "**Neither increasing or decreasing order**" otherwise. FOR eg.
    - Input first number: 1524
    - Input second number: 2345
    - Input third number: 3321

    Output :

    INCREASING

TASK FOUR : ARRAYS AND STRING

1. Write a JAVA program that takes given String of words and return the **length of the shortest word**.
2. Write a JAVA program that gives **sum** of all the values of array **except the highest and lowest values.**
3. Write a JAVA method to remove **all the spaces** from the String and return the resultant.

4. Write a JAVA method to return a boolean true if the string doesn't have repeating letters and consecutive or nonconsecutive i.e. all the letters of the string be unique (**isogram**) else false.
    a. Write a JAVA program that reverse the words of a sentence.
        i. **For eg**, => "Be Happy and Stay Motivated" => "eB yppah dna yatS detavitoM".
5. Write a JAVA program that takes out the even from the odds and odd from the list of even numbers,
   For eg, => {23,25,75,87,47,1,91,51,**2**} //Output for this case =>2

   => {22,44,64,76,98,12,**43**,54,90} // Output for this case =>43.

6. Write a JAVA program that swaps the case of the alphabets of the string,
    a. **For eg,** => "heLLo WOrLd" => "HEllO woRlD".
7. Write a JAVA program that gives boolean values; true, if the string has balanced braces and false, if the string has unbalanced braces:

   For eg, => "({{)}[}](()" //output => true //can't use stack

   //valid parenthesis

   {{([ )] }}

   => "[})(" //output => false.

TASK FIVE : CLASSES AND OBJECTS

1. Print the sum, difference and product of two complex numbers by creating a class named 'Complex' with separate methods for each operation whose real and imaginary parts are entered by user.

2. Write a program that would print the information (name, year of joining, salary, address) of three employees by creating a class named 'Employee'. The output should be as follows:

Name	Year of joining	Address
Robert	1994	64C- Walls Streat
Sam	2000	68D- Walls Streat
John	1999	26B- Walls Streat

3. Write a program to print the names of students by creating a Student class. If no name is passed while creating an object of Student class, then the name should be "Unknown", otherwise the name should be equal to the String value passed while creating object of Student class. (Hint: Overloading concept)

4. Create a class named 'Rectangle' with two data members- length and breadth and a method to calculate the area which is 'length*breadth'. The class has three constructors which are :

   1 - having no parameter - values of both length and breadth are assigned zero.

   2 - having two numbers as parameters - the two numbers are assigned as length and breadth respectively.

   3 - having one number as parameter - both length and breadth are assigned that number.

Now, create objects of the 'Rectangle' class having none, one and two parameters and print their areas.

5. Suppose you have a Saving Box with an initial amount of $50 and you have to add some more to it. Create a class 'AddAmount' with a data member named 'amount' with an initial value of $50. Now make two constructors of this class as follows:

   1 - without any parameter - no amount will be added to the Saving Box

   2 - having a parameter which is the amount that will be added to Saving Box

   Create object of the 'AddAmount' class and display the final amount in Saving Box. Also, create a method that can display how many transactions are done on the Saving Box.

6. Create a class named 'Programming'. While creating an object of the class, if nothing is passed to it, then the message "I love programming languages" should be printed. If some String is passed to it, then in place of "programming languages" the name of that String variable should be printed.

   For example, while creating object if we pass "Java", then "I love Java" should be printed. There can be more than one programming languages.

TASK SIX : STRING(Good questions)

1. Write a function that will return the count of distinct case-insensitive alphabetic characters and numeric digits that occur more than once in the input string. The input string can be assumed to contain only alphabets (both uppercase and lowercase) and numeric digits.

Example

"abcde" -> 0 # no characters repeats more than once

"aabbcde" -> 2 # 'a' and 'b'

"aabBcde" -> 2 # 'a' occurs twice and 'b' twice (`b` and `B`)

"indivisibility" -> 1 # 'i' occurs six times

"Indivisibilities" -> 2 # 'i' occurs seven times and 's' occurs twice

"aA11" -> 2 # 'a' and '1'

"ABBA" -> 2 # 'A' and 'B' each occur twice

2. Deoxyribonucleic acid (DNA) is a chemical found in the nucleus of cells and carries the "instructions" for the development and functioning of living organisms.

In DNA strings, symbols "A" and "T" are complements of each other, as "C" and "G".

DnaStrand.makeComplement("ATTGC") // return "TAACG" (in the result the A is replaced by T, also, C is replaced by G and vice versa.)

DnaStrand.makeComplement("GTAT") // return "CATA"

3. Write a function that takes in a string of one or more words, and returns the same string, but with all five or more letter words reversed. Strings passed in will consist of only letters and spaces. Spaces will be included only when more than one word is present.

Examples: spinWords("Hey fellow warriors") => returns "Hey wollef sroirraw" spinWords("This is a test") => returns "This is a test" spinWords("This is another test")=> returns "This is rehtona test"

4. Your task is to write a function that takes a string and return a new string with all vowels removed.

For example, the string "This website is for All!" would become "Ths wbst s fr LL!".