Notes:

I)For all exercises, use the following class to read from keyboard:

**import java.util.Scanner;**

**public class KeyBoard {**

**private static Scanner *s* = new Scanner(System.*in*);**

**public static String readString() {**

**return *s*.nextLine();**

**}**

**public static char readChar() {**

**String str = *s*.nextLine();**

**return str.charAt(0);**

**}**

**public static int readInt() {**

**String str = *s*.nextLine();**

**return Integer.*parseInt*(str);**

**}**

**public static float readFloat() {**

**String str = *s*.nextLine();**

**return Float.*parseFloat*(str);**

**}**

**}**

Example:

System.out.println(“Enter a number”);

int num = KeyBoard.readInt();

Just create a Keyboard.java file and paste the code into it.

II) As much as possible do the user prompting and accepting from keyboard in the main method and not in the called method.

III) Remember that System.out**.print** method prints without adding new line at the end (as compared to System.out**.println**)

1. Write a program to swap the values in 2 variables.

Input: a=2 b=5

Output: a=5 b=2

1. Write a program to swap the values in 2 variables without using a third variable. How many ways can you think of?

Input: a=2 b=5

Output: a=5 b=2

1. Write a method called add which takes 2 integers num1 and num2 as input parameter and returns their sum .
2. Write a method calculateInterest to Calculate Simple Interest. It should take p,t and r as input parameters and return interest.
3. Write a method called convertToBinary which takes an int input parameter and returns its binary representation as return value in a String
4. Write a Java method to find the smallest number among three numbers. Accept 3 int params and return an int. Use if/else at first. Can you do this using the ternary operator?
5. Write a method named isEven that accepts an int argument. The method should return true if the argument is even, or false otherwise.
6. Write a value-returning method, isVowel that returns the value true if a given character is a vowel, and otherwise returns false. Use if/else at first. Then do the same using switch/case. Can you use the fall-through nature of switch case?
7. A prime number is a number that is evenly divisible only by itself and 1. For example, the number 5 is prime because it can be evenly divided only by 1 and 5. The number 6, however, is not prime because it can be divided evenly by 1, 2, 4, and 6. Write a method named isPrime, which takes an integer as an argument and returns true if the argument is a prime number, or false otherwise.
8. A nonnegative integer is called a palindrome if it reads forward and backward in the same way. For example, the numbers 5, 121, 3443, and 123454321 are palindromes. Write a method that takes as input a nonnegative integer and returns true if the number is a palindrome; otherwise, it returns false. Also write a main to test your method.
9. Write a program to generate first 100 numbers in the Fibonacci series. Print 10 numbers per line separated by a tab space.
10. Write a method calculateFactorial which accepts an int as input param and returns its factorial as return value
11. Write a Program to Print Pyramid Number Pattern in Java.

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1. Write a Program to Print the Pascal’s Triangle in Java

Input : N = 5

Output:

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1 1

1 2 1

1 3 3 1

1 4 6 4 1

1 5 10 10 5 1

1. Write a program to print the following pattern

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