

# Java - Introduction to Programming

## Exercise 1 SOLUTIONS

1. Enter 3 numbers from the user & make a function to print their average.  
//Try to convert it into a function on your own.

```
import java.util.*;

public class Solutions {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        int a = sc.nextInt();
        int b = sc.nextInt();
        int c = sc.nextInt();

        int average = (a + b + c) / 3;
        System.out.println(average);
    }
}
```

2. Write a function to print the sum of all odd numbers from 1 to n.

```
import java.util.*;

public class Solutions {
    public static void printSum(int n) {
        int sum = 0;

        for(int i=1; i<=n; i++) {
            if(i % 2 != 0) {
                sum = sum + i;
            }
        }

        System.out.println(sum);
    }

    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
```

```
int n = sc.nextInt();  
printSum(n);  
}  
}
```

3. Write a function which takes in 2 numbers and returns the greater of those two.

```
import java.util.*;  
  
public class Solutions {  
    public static int getGreater(int a, int b) {  
        if(a > b) {  
            return a;  
        } else {  
            return b;  
        }  
    }  
  
    public static void main(String args[]) {  
        Scanner sc = new Scanner(System.in);  
        int a = sc.nextInt();  
        int b = sc.nextInt();  
        System.out.println(getGreater(a, b));  
    }  
}
```

4. Write a function that takes in the radius as input and returns the circumference of a circle.

```
import java.util.*;  
  
public class Solutions {  
    public static Double getCircumference(Double radius) {  
        return 2 * 3.14 * radius;  
    }  
  
    public static void main(String args[]) {  
        Scanner sc = new Scanner(System.in);  
        Double r = sc.nextDouble();  
        System.out.println(getCircumference(radius));  
    }  
}
```

5. Write a function that takes in age as input and returns if that person is eligible to vote or not. A person of age > 18 is eligible to vote.

```
import java.util.*;

public class Solutions {
    public static boolean isEligible(int age) {
        if(age > 18) {
            return true;
        }
        return false;
    }
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        int age = sc.nextInt();
        System.out.println(isEligible(age));
    }
}
```

6. Write an infinite loop using do while condition.

```
import java.util.*;

public class Solutions {
    public static void main(String args[]) {
        do {

        } while(true);
    }
}
```

7. Write a program to enter the numbers till the user wants and at the end it should display the count of positive, negative and zeros entered.

```
import java.util.*;

public class Solutions {
    public static void main(String args[]) {
        int positive = 0, negative = 0, zeros = 0;
        System.out.println("Press 1 to continue & 0 to stop");
        Scanner sc = new Scanner(System.in);
        int input = sc.nextInt();
```

```

        while(input == 1) {
            System.out.println("Enter your number : ");
            int number = sc.nextInt();
            if(number > 0) {
                positive++;
            } else if(number < 0) {
                negative++;
            } else {
                zeros++;
            }
        }

        System.out.println("Press 1 to continue & 0 to stop");
        input = sc.nextInt();
    }

    System.out.println("Positives : "+ positive);
    System.out.println("Negatives : "+ negative);
    System.out.println("Zeros : "+ zeros);
}

```

8. Two numbers are entered by the user, x and n. Write a function to find the value of one number raised to the power of another i.e.  $x^n$ .

//Try to convert it into a function on your own.

```

import java.util.*;

public class Solutions {
    public static void main(String args[]) {
        System.out.println("Enter x");
        Scanner sc = new Scanner(System.in);
        int x = sc.nextInt();
        System.out.println("Enter n");
        int n = sc.nextInt();

        int result = 1;
        //Please see that n is not too large or else result will exceed the size
        of int
        for(int i=0; i<n; i++) {

```

```

        result = result * x;
    }

    System.out.println("x to the power n is : "+ result);
}

```

9. Write a function that calculates the Greatest Common Divisor of 2 numbers.  
(BONUS)

```

import java.util.*;

public class Solutions {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        int n1 = sc.nextInt();
        int n2 = sc.nextInt();

        while(n1 != n2) {
            if(n1 > n2) {
                n1 = n1 - n2;
            } else {
                n2 = n2 - n1;
            }
        }

        System.out.println("GCD is : "+ n2);
    }
}

```

//Try to convert it into a function on your own.

10. Write a program to print Fibonacci series of n terms where n is input by user :

0 1 1 2 3 5 8 13 21 .....

In the Fibonacci series, a number is the sum of the previous 2 numbers that came before it.

(BONUS)

```

import java.util.*;

public class Solutions {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
    }
}

```

```
int n = sc.nextInt();

int a = 0, b = 1;

System.out.print(a+" ");

if(n > 1) {
    //find nth term
    for(int i=2; i<=n; i++) {
        System.out.print(b+" ");
        //the concept below is called swapping
        int temp = b;
        b = a + b;
        a = temp;
    }

    System.out.println();
}
}
```