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.

```java
import java.util.*;

public class Solutions {
   public static boolean isElligible(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(isElligible(age));
   }
}
```

6. Write an infinite loop using do while condition.

```java
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.

```java
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();
            }
        }
    }
```