**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);

}

}

1. 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);

}

}

1. 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));

}

}

1. 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));

}

}

1. 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 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));

}

}

1. Write an infinite loop using do while condition.

import java.util.\*;

public class Solutions {

public static void main(String args[]) {

do {

} while(true);

}

}

1. 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);

}

}

1. 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. .

//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);

}

}

1. 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.

1. 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();

}

}

}