

Task 1 :- Basic Conditional statements and Looping programs

a) Give 5 numbers, how many are even or odd

Aim:- To design an algorithm and java program that takes 5 numbers as input and determines how many of them are even and how many are odd.

Algorithm:-

Step 1:- Start

Step 2: Initialize two counters

Step 3: Read 5 numbers from the user.

Step 4: For each number

* If the number $\% 2 == 0 \rightarrow$ increment even count

* else \rightarrow increment odd count

Step 5:- Display even count and odd count

Step 6:- Stop

Program:-

```
import java.util.Scanner;  
public class EvenOddCounter{  
    public static void main (String [] args){  
        Scanner Sc = new Scanner (System.in);  
        int evenCount = 0, oddCount = 0;  
        int [] numbers = new int [5];  
        System.out.println ("Enter 5 numbers: ");  
        for (int i=0; i<5; i++){  
            numbers [i] % 2 == 0 ) {  
                evenCount++;  
            } else {  
                oddCount++;  
            }  
        }  
        System.out.println ("Even Count: " + evenCount);  
        System.out.println ("Odd Count: " + oddCount);  
    }  
}
```

error part

bo ro 1218 200 pram word, readmore 2 9010 (0

orj. avol. b110 Enter 5 numbers: no input of -1 m.A

12, 15, 9, 4, 3 min 2 total both

in word b110 now 200 want to pram word

b60 200

output:-

Total Even numbers: 2

Total odd numbers: 3

now get more readmore 2 b60 9 : 2912

readmore does not : N 2912

function (→ 0 = 80 N readmore onto 21 *

b60 200 pram word, ← 2019 *

b60 200 pram word, ← 2019 *

9012 → 2912

error part

; return 2. It u. now program

first two b60 and readmore

f (opn() part) now b60 21012 21012
(1. n1012), readmore = 2 word &

as b60, as b60 now 21012

((2) hi word = readmore [] hi;

"readmore & 21012")

```
System.out.println("total Even Numbers: " + evenCount);
System.out.println("Total odd numbers: " + oddCount);
sc.close();
}
```

}

}

Output
11 random first values
85 random second values

Output
10 digits total 20 nos

Result:- The given program was successfully verified and executed

b) sum of last digit of two given numbers

Aim:- To write a program that finds the sum of the last digits of two given numbers.

Algorithm:

1) Start

2) Input two numbers, say a and b,

3) Find the last digit of 'a' using $a \% 10$

4) Find the last digit of 'b' using $b \% 10$

5) Add these two last digits

6) Output the result

7) Stop

Program:

```
import java.util.Scanner;
```

```
public class LastDigitSum {
```

```
    public static void main (String [] args) {
```

```
        Scanner sc = new Scanner (System.in);
```

```
        System.out.print ("Enter first number:");
```

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

```
        System.out.print ("Enter second number:");
```

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

```
        int last Digit A = a % 10;
```

```
        int last Digit B = b % 10;
```

```
        int sum = last Digit A + last Digit B;
```

~~System.out.println ("sum of last digit = " + sum);~~

sc.close();

}

3

Result:- Thus, the sum of the last digit
is obtained as

Input:-

enter first number : 22

enter second number : 28

Output:-

sum of last digits = 10

c) To check whether a given number is prime
Aim:- To design and implement a Java program
that determines whether a user - integer is
a prime number.

Algorithm:-

- 1) Start
- 2) Initialize an integer variable flag initialized to 1
- 3) Read an integer number from the user
- 4) If num <= 1, set flag = 0
- 5) If n > 1, start a loop with a counter i
begin at 2
- 6) if num % i == 0
- 7) If flag == 1 display Is prime
- 8) Stop

Program:-

```
import .java.util .Scanner;  
Class Is_prime{  
    public static void main (String [] args){  
        Scanner Sc = new Scanner (System.in);  
        System.out.print ("Enter a number:");  
        int num = sc.nextInt();  
        int flag = 1;  
        if (num <= 1){  
            flag = 0;  
        } else {  
            for (int i = 2; i <= num/2; i++) {  
                if (num % i == 0) {  
                    flag = 0;  
                    break;  
                }  
            }  
        }  
    }  
}
```

Input: ~~Program takes two inputs or~~
~~it depends on user~~
Enter a number? 66 ~~removable fourth~~

Output:-

Not a prime number

It is divisible by 2 so it is not prime. No effort is to be made to remove 2 from the number. If 66 is divisible by 2, then 66 is not prime.

import java.util.*;
class Prime {
 public static void main(String[] args) {
 int n = 66; // Given number
 boolean flag = true; // Assume number is prime
 for (int i = 2; i < n; i++) {
 if (n % i == 0) { // If divisible by any number other than 1 and itself
 flag = false; // Not prime
 break; // Exit loop
 }
 }
 if (flag) { // If flag is still true, then number is prime
 System.out.println("The number is prime");
 } else { // If flag is false, then number is not prime
 System.out.println("The number is not prime");
 }
 }
}

```
if (flag == 1){  
    System.out.println (" prime number");  
} else {  
    System.out.println (" Not a prime number");  
}  
}  
y  
z
```

-tugrit

IN: redmon & rafne

-tugrit

OUT: SN 90 10101010

Result:
The given program was successfully verified

d) Factorial of a number

Aim:- To calculate the factorial of a given number a, which positive integer using an iterative approach.

$$n! = n(n-1) \cdot (n-2) \cdots - 1$$

Algorithm:-

- 1) Start
- 2) Read an integer num from the user.
- 3) Set fact = 1
- 4) Initialize i=1 to i<=num
→ multiply fact by i and get the fact value with new value
- 5) After the loops ends, fact contains the factorial of num print the result
- 6) Stop.

Program:-

```
import java.util.Scanner;
class Factorial {
    public static void main (String [] args) {
        Scanner sc = new Scanner (System.in);
        System.out.print ("enter a number:");
        int num = sc.nextInt();
        int fact = 1;
        for (int i=1; i<=num, i++) {
            fact = fact * fact * i;
        }
        System.out.println ("Factorial of " + num + " is " + fact);
    }
}
```

Result:-

Hence the above java code was successfully.

Input:-

enter a number : 42

Output:-

factorial of 42 is : 0

e) N^{th} Fibonacci

Aim:- To develop a java program that reads an integer N from the user and prints the N^{th} Fibonacci number using an iterative approach.

Algorithm:-

- 1) Start
- 2) the user to enter the value of n
- 3) Initialize variable $a=0, b=1, c$
- 4) If $n=1$ then output a
If $n=2$ then output b .
- 5) Repeat from $i=3$ to n , $c=a+b, a=b, b=c$
- 6) End.

Program:-

```
import java.util.Scanner;  
class Nth Fibonacci{  
    public static void main(String[] args){  
        Scanner sc = new Scanner (System.in);  
        System.out.print ("Enter value of N : ");  
        int n = sc.nextInt();  
        int a=0, b=1, c;  
        if (n==1){  
            System.out.println ("Nth Fibonacci number is : "+a);  
        } else if (n==2){  
            System.out.println ("Nth Fibonacci number is : "+b);  
        } else {  
            for (int i=3, i<=n ; i++) {  
                c = a+b;  
                a = b;  
                b = c;  
            }  
            System.out.println ("Nth Fibonacci number is : "+c);  
        }  
    }  
}
```

no most comfortable way to go about it ~~in~~
but all things have their own way to go about it
depends on what no price reduction is possible

Input :-

anthropia

Enter a number n=56 brot2 (1)
The given numbers are 0 to 500 with 56

• I fugtuo now seen 2x
2d, dzo, dzos, not as; most fozos) (a

brief (J)

borderline

Worboys, John. 1960. Scavengers?

Mr. E. P. Morrissey

11pm (7pm) Mon Nov 24, 2013

Answers SC = sum score (after 100%)

(": 4.90 "now extra") Army No. 20002

$$(1) \tan \alpha_2 = \text{def.}$$

(3) $\tau = d$, $\alpha = \alpha_0$ has

~~3 (1-1)~~ 7;

Edwardian "modern" style furniture.

$f(s_{\text{min}}) \approx$

100

```
System.out.println("Nth Fibonacci number  
is : "+b);  
}  
}  
}
```

VEL TECH	
EX No.	5
PERFORMANCE (5)	5
RESULT AND ANALYSIS (3)	3
VIVA VOCE (3)	3
RECORD (4)	4
TOTAL (15)	15
SIGN WITH DATE	03/02/2017

Result:- Hence the java program was

successfully executed