

ASSIGNMENT NO 3

PAGE NO.

DATE 12.02.22

(Q1) Check if a year is leap year or not.

(Q2) Write algorithm to print all odd numbers backward from 99 to 1.

(Q3) Java program to calculate Distance between two points.

(Q4) Write algorithm to print sum of even and odd digits, considering 10 numbers are taken from user.

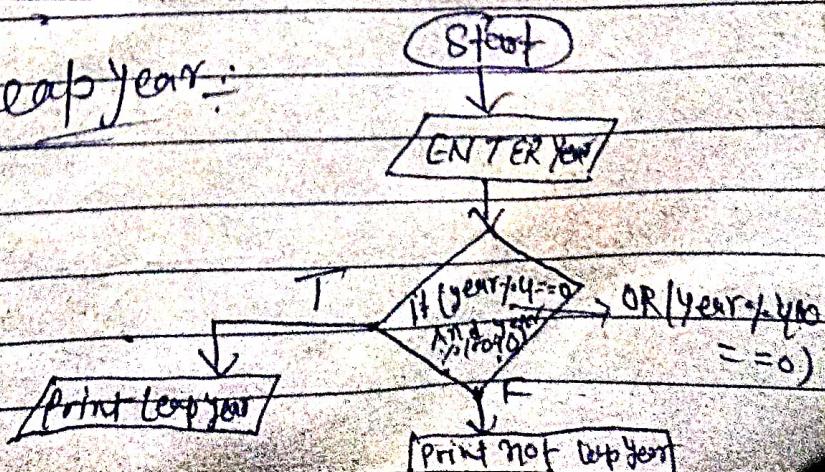
(Q5) Calculate product of digits of number.

(Q6) WAP to print first x terms of the series $3N + 2$ which are not multiples of 4.

(Q7) Write algorithm to find compound interest, provided principle, time and R.O.T. are taken by user.

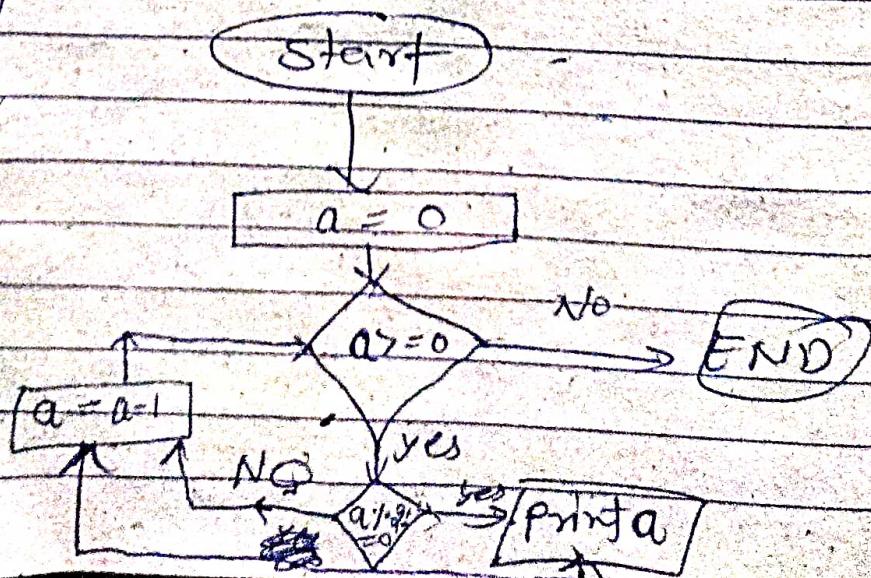
(Q8) Check if a year is leap year or not.

Flowchart of leap year:



- Algorithm :-
- 1) Take integer Variable year.
 - 2) Assign a value to the Variable
 - 3) Check if the year is divisible by 4 but not 100. Display "leap year".
 - 4) Check if the year is divisible by 400, Display "leap year".
 - 5) Otherwise, Display "not leap year".

Q2) Print all odd numbers backward from 99 to 1



Algorithm :-

Step :- 1) start

(using loop) 2) Declare Variable a of integer type

3) Set a=0

4) Repeat Step 5 to 7 While (a >= 0)

5) if (a >= 2) = 0

6) then print a

7) a = a - 1

8) Stop.

Q3) calculate distance between two points.

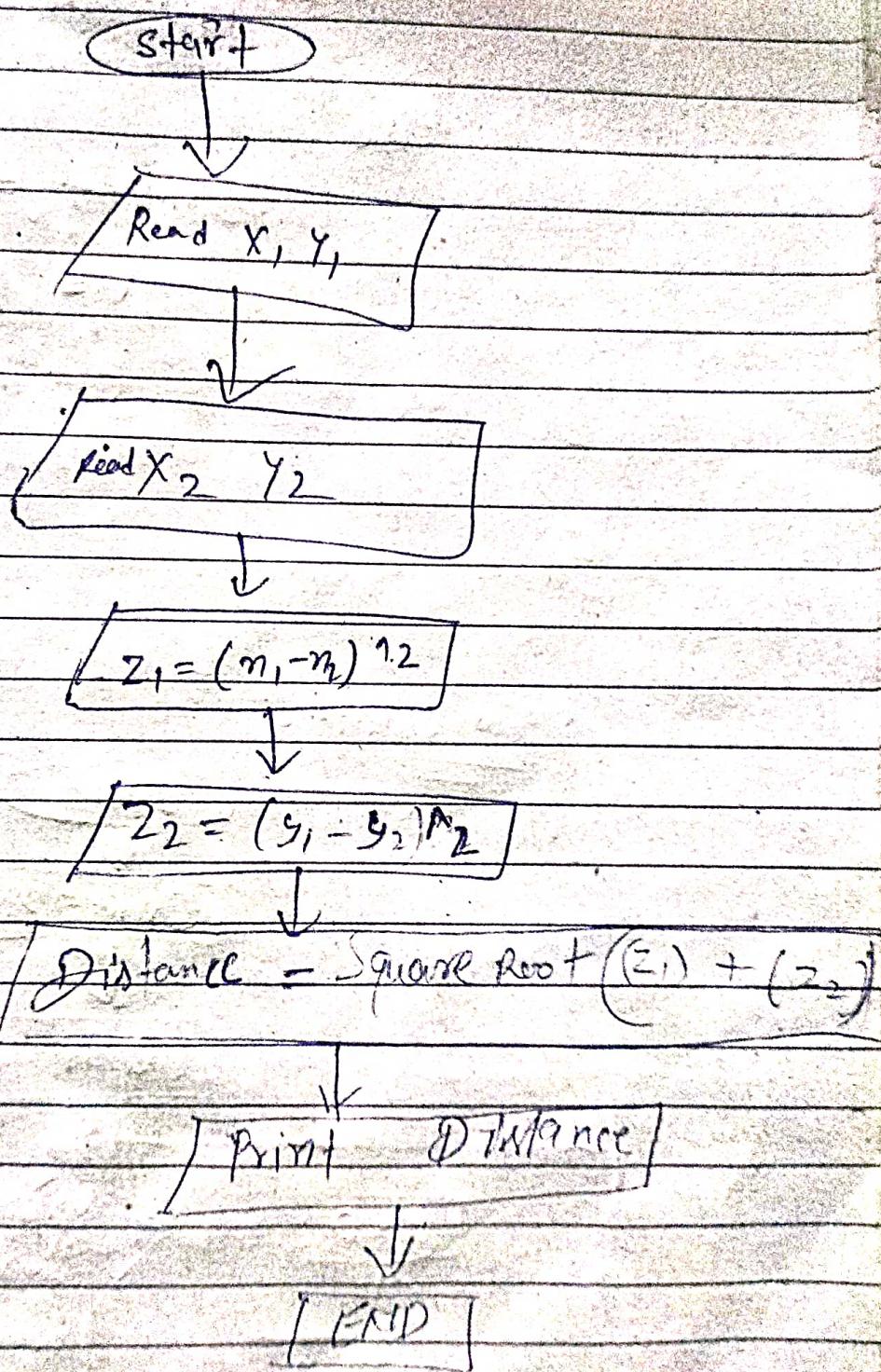
Algorithm :- 1) Enter a. two points as input from user

2) calculate the difference

X - cooridinates i.e: $x_2 - x_1$ and y- cooridinates i.e: $y_2 - y_1$ of two points.

3) Apply the formula derived
from Pythagorean ($\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$)

4) Exit.



Q) Sum of odd and even digits

Algorithm →

Step - 1 Enter ten numbers from user.
 $\text{sum} = 0$

2) check for ($\text{int } i = 0; i < \text{number}; i++$)
then if true ($(\text{number} \% 10) \neq 0$)
else.

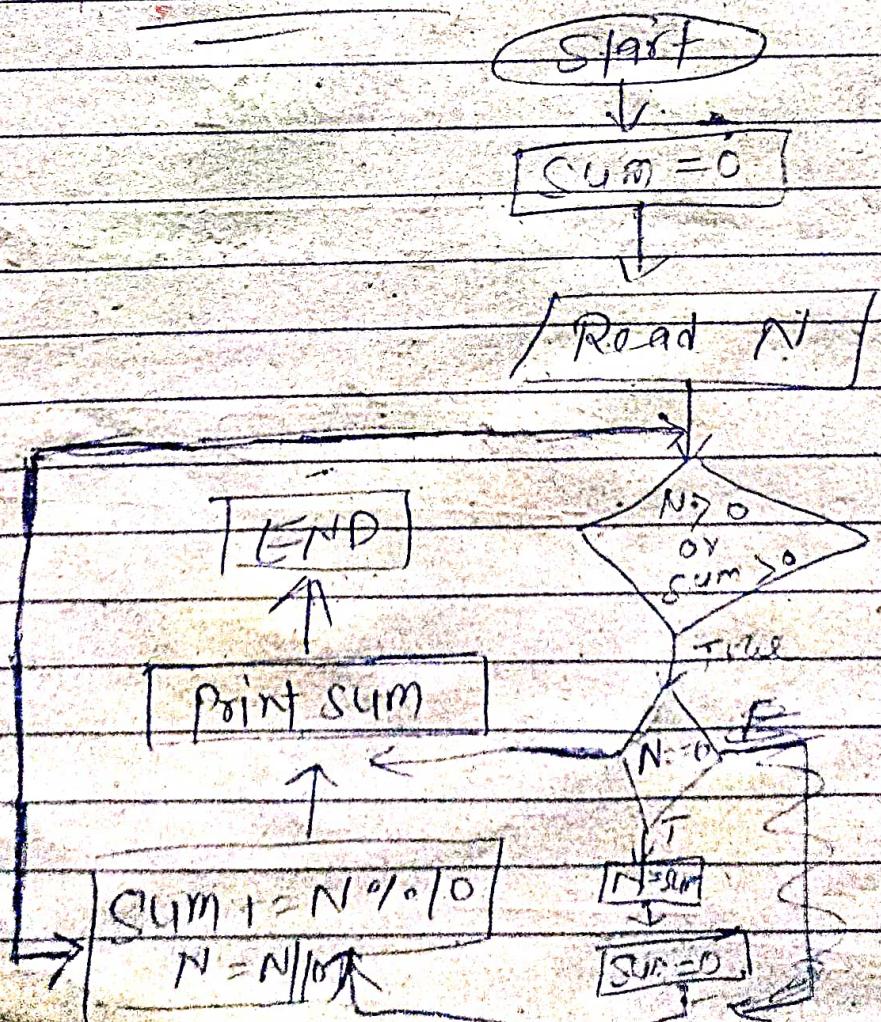
$$\text{sum} += N \% 10$$

$$N = N / 10$$

3) print sum of 10 numbers

4) exit

Flow Chart -



Q5 Product of digits of number.

Algorithm -

- 1) Enter a no. from user and store to any variable
- 2) Initialize another variable to store product i.e. product = 1.

- 3) Multiplying a no. with 1 gives same, so as summation with 0 - return same.

- 4) Also be sure to initialize the product with 0 if num is 0.

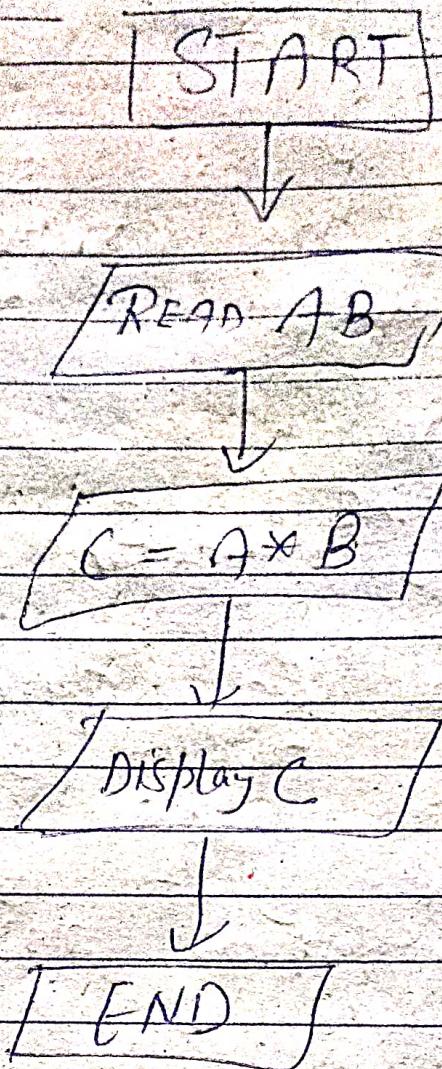
- 5) Find last digit of number by performing modulo division by 10 i.e.
last digit = num % 10

- 6) Multiply last digit found above with product i.e.
product = product * (last digit)
- 7) Remove last digit by dividing the no. by 10
then num = num / 10

Repeat step 5-7 till no. becomes 0.

Finally you will be left with product of digits in product Variable.

Flow chart -



(Q6) x forms series $3N + 2$ J+1/n
* i=4

Algorithm - 1) Enter Nos and initialization
in int.

2) initialization int Count

3) check Condition
 $\text{for}(\text{int } i=1; \text{Count} < \text{N}; i++)$

using op = $3^x i + 2$,

then $i = 1$ ($a[0] \cdot b[1] = 0$)

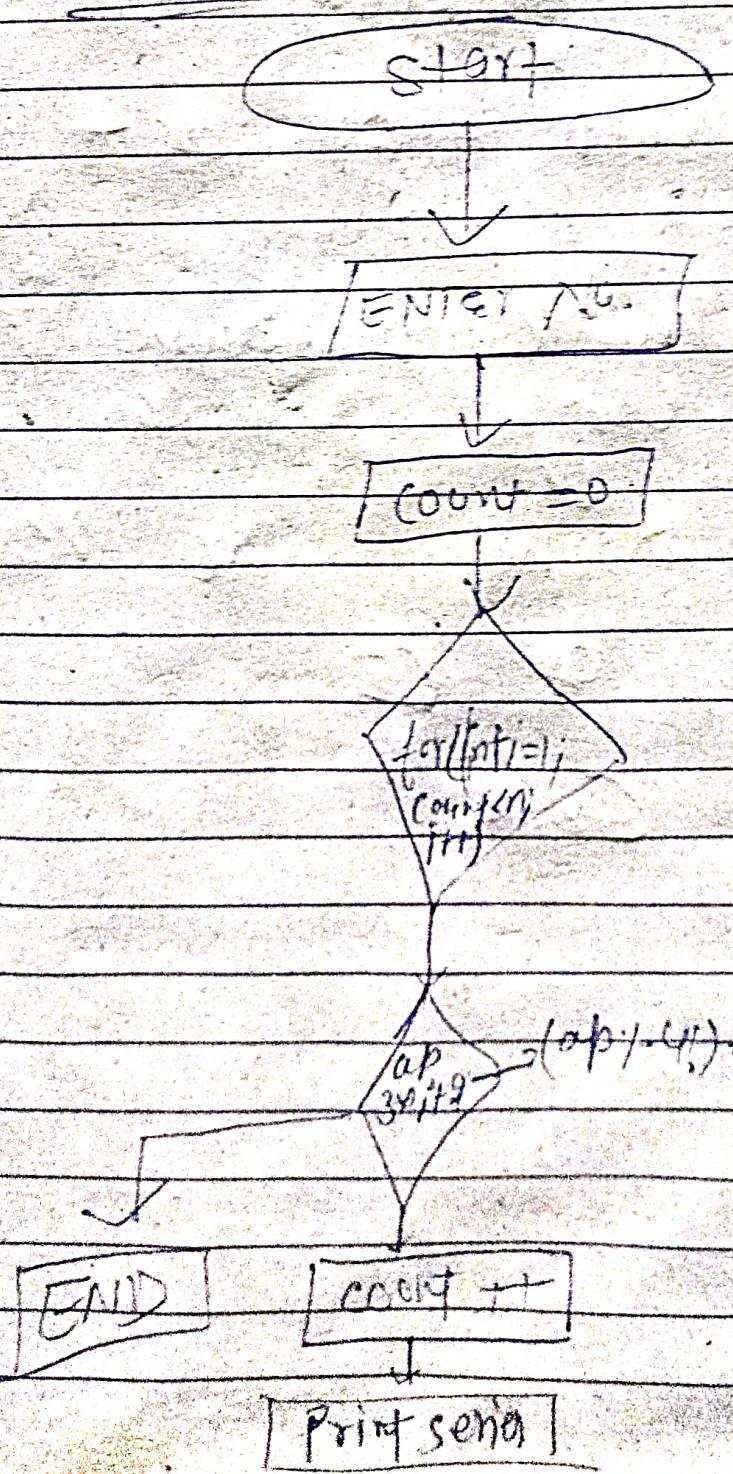
b) go to point $a[i+1]$ and increment
to be $= count++$

5) print series $3n+2$

6

Exit

Flow chart



(Q-7) Compound interest = principle * time
and ROI from user

Algorithm →
1) Enter time in variable say
 $\text{time}(t)$

2) Enter rate in variable say
 $\text{rate}(R)$

3) calculate Amount . Using
formula,

Amount = principle * $(1 + \frac{\text{rate}}{100})^{\text{time}}$

4) calculate Compound Interest
Using Formula.

5) printing the result value
of CI

6) Exit.

flow Chart :-

Start

C I

Enter time (t)

Enter Rate (r)

using

formula

$$\text{amount} = \text{principle} \times (1 + \text{rate}/100)^t$$

Calculator
C I using formula

Print etc

TFND R