14-Jan-2024 - Programming Foundation

Assignment -

Question 1:- To Print the area of chosen geometric figures. (Circle, rectangles, Squares.)

* Area of Circle - $A = \pi \cdot r$.
* Area of Rectangle $A = l \times b$.
* Area of Square $A = l \times l$.

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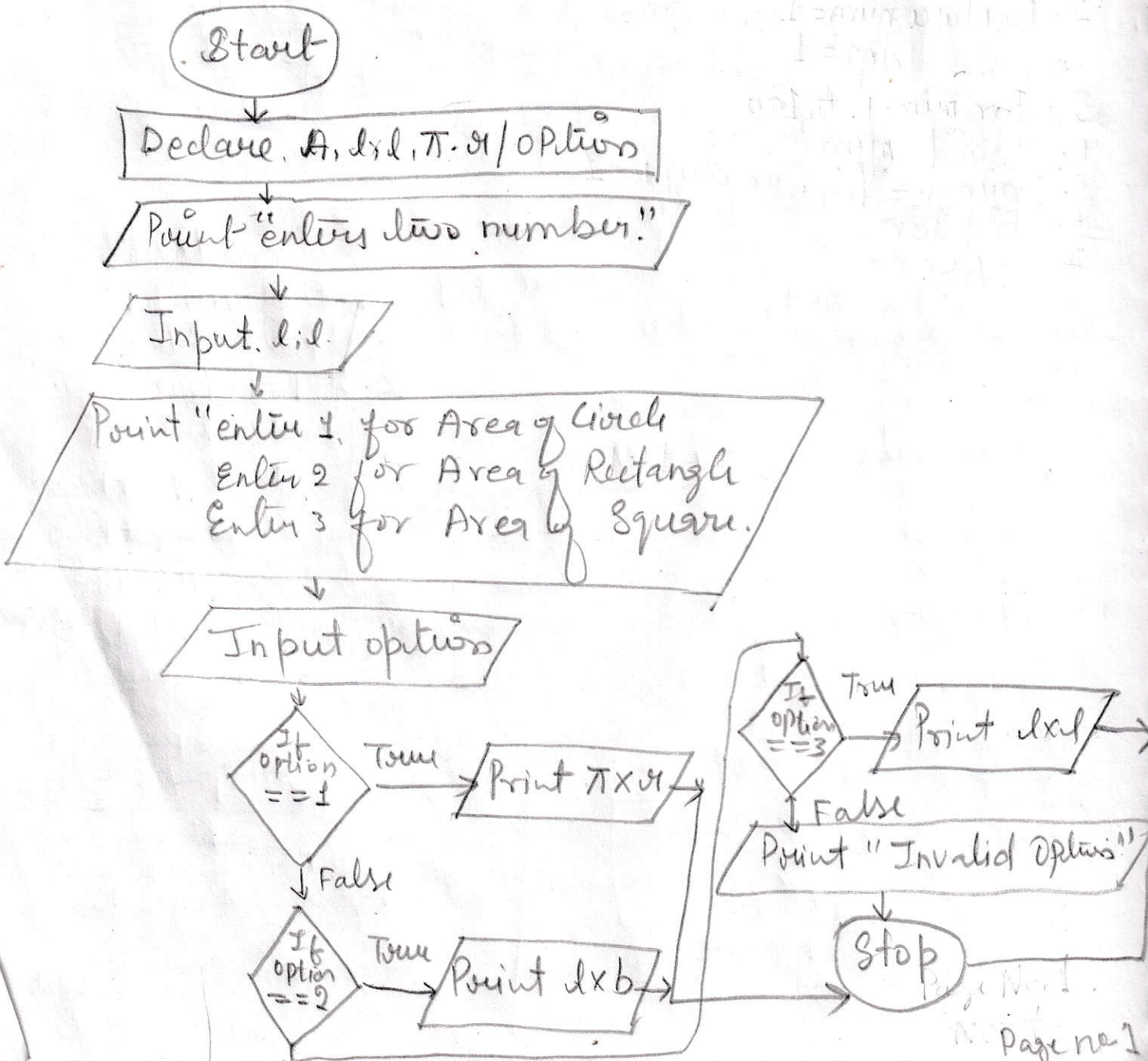
Options.
1. Circle.
2. Rectangle.
3. Square.
```

Flowchart -



Pseudocode.

1. Start.
2. Declare. l, d, π, r, A, option.
3. Print "Enter Two number"
4. Input: l, d, π, r, A.
5. Print "Enter 1 for Area of Circle"
   Enter 2 for Area of Rectangle.
   Enter 3 for Area of Square..
6. Input option.
7. If (option == 1) then
8. Print π x r.
9. Else If (option == 2) then.
10. Print l x b.
11. Else if (option == 3) then.
12. Print l x l.
13. Else.
14. Print "Invalid option"
15. End If
16. Stop.

Question 2:- To Print Factorial of a number 5.

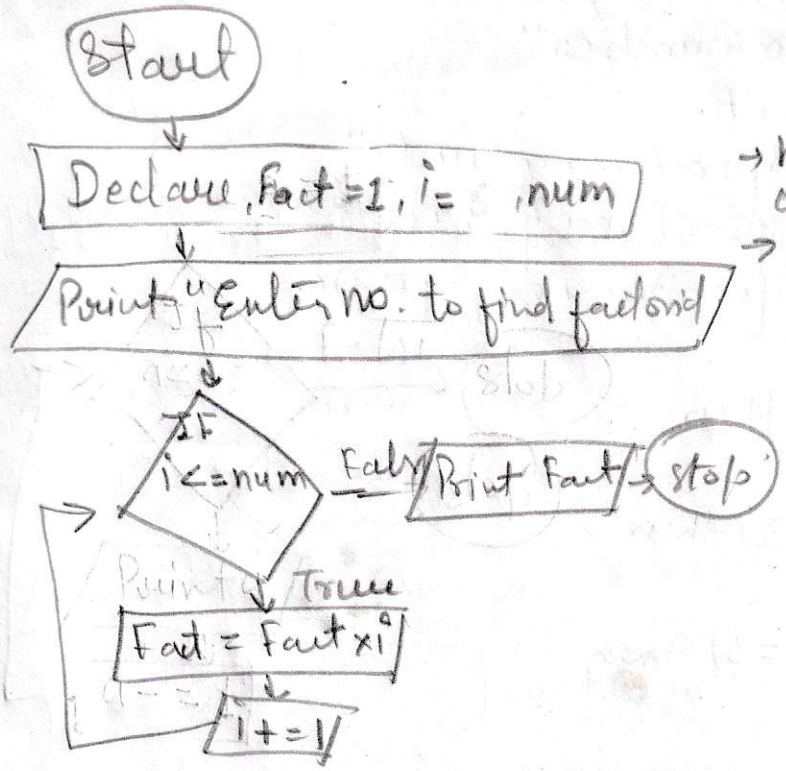
its mean.

5!
$= 5 \times 4 \times 3 \times 2 \times 1$
$= 120$.

i =

→ here decreasing i.
only we get 0, loop stop
→ num = 5. Fact no.

Flowchart.



Fact	i	num
i	1	5
1	2	
2	3	
6	4	
24	5	

Fact value.

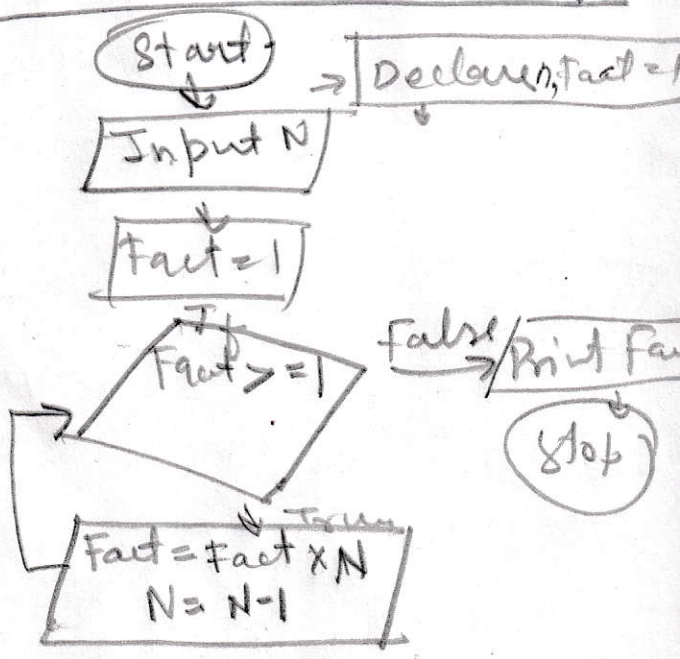
1<=5 True
2<=5 True
3<=5 True
4<=5 True
5<=5 True
6<=5 False

1 x 1 = 1
Fact i = no.
1 x 2 = 2
2 x 3 = 6
6 x 4 = 24
8 x 24 = 120.
Fact x i = Fact.

Pseudocode.

1. start
2. Declare, Fact=1, i=1, num.
3. Print "Enter no. to Find Factorial.
4. For loop i=1 to 5.
5. Fact = Fact x i.
6. Print Fact.
7. i+=1
8. End for loop.
9. Stop.

Flowchart For decreasing.



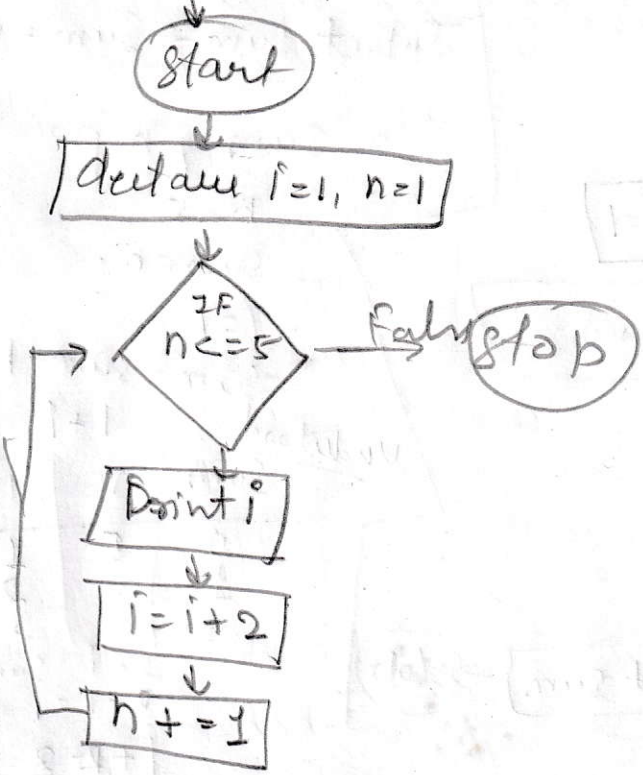
For Understanding.

DownN	Fact	
3	1	3>=1
2	3	2>=1
1	6	1>=1
		0>=1 False

n=3

Question 3. To print the first 20 odd number. (5)

Flowchart,



Pseudocode.

1. Start
2. Declare i=1, n=1
3. Print 5 odd no.
4. For loop. i=1 to 5.
5. i=i+2
6. Print i odd no.
7. n+=1
8. End For loop.
9. Stop.

1, 3, 5, 7, 9.

i=i+2. For odd no.

i	n
1	1
i=i+2 3	2
5	3
7	4
9	5
11	6

1 we have already

→ 1<=5 T

i=i+2.

i=i+2=3

→ 2<=5 T.

i=i+2

3+2.

i=5

→ 3<=5 T

5+2

i=7

4<=5 T.

i=7+2=9

i=9.

5<=5 T.

i=9+2=11

6<=5 False

Stop Now

Question 4:- To Print Sum of n positive number

5 → 1+2+3+4+5 = 15.

3 → 1+2+3 = 6.

Input Sum = Sum + n.

Sum of n positive

n = 5

Sum = 0.

i = 1

Sum = Sum + i.

Understood:- 1+1

Sum	n	i
0	5	1
1		2
3		3

i = 1 Sum

0+1 = 1 1<=5

1+2 = 3 2<=5

3+3 = 6 3<=5

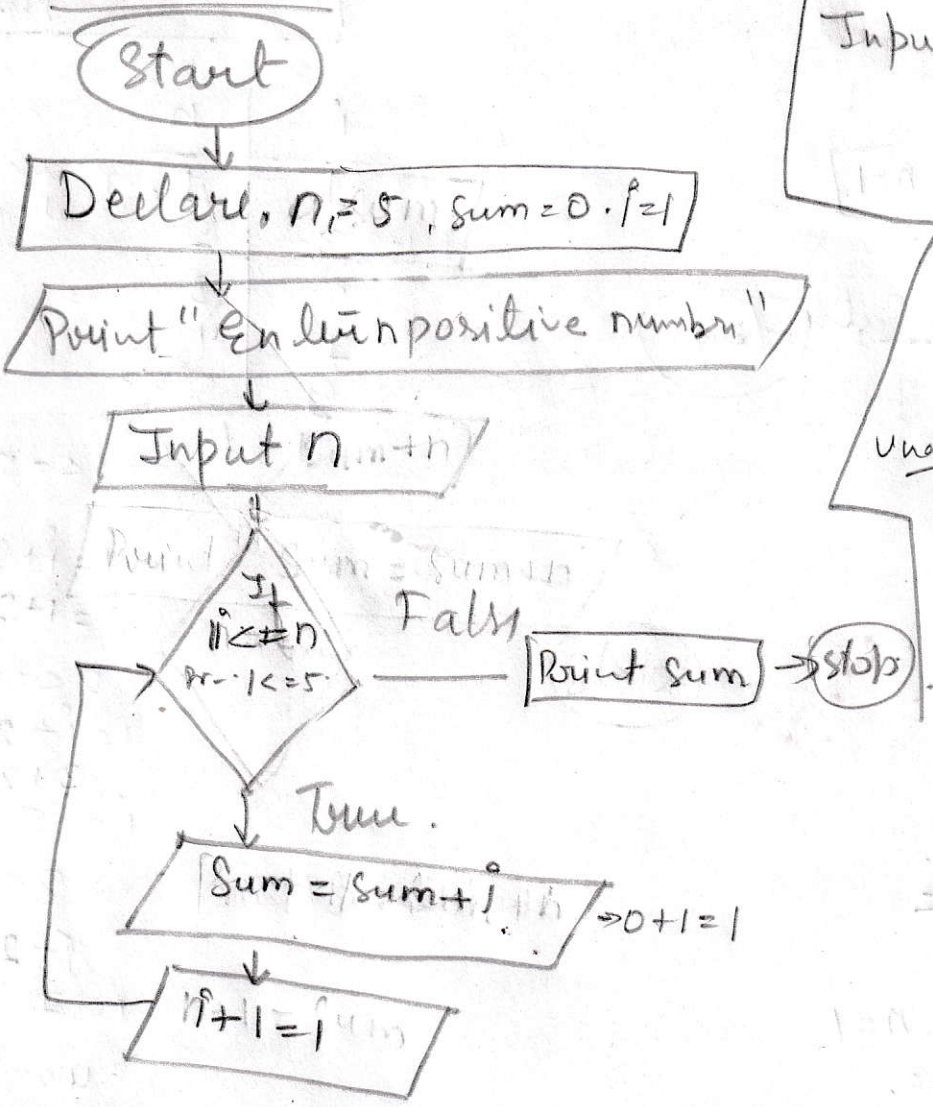
6+4 = 10 4<=5

10+5 = 15 5<=5

6 > 5

False

Flowchart



Pseudocode.

1. Start
2. Declare n = 5, sum = 0, i = 1
3. Print n positive number
4. Input n
5. For loop i = 1 to 5.
6. Sum = Sum + i
7. Print Sum of n positive numbers.
8. i + 1 = i
9. End for loop.
10. Stop.

Question 5: To print 10 terms of fibonacci series?

~~Question 3: To print 10 terms of fibonacci series.~~ → 0,1.

0,1 we have already. 0, 1, 1, 2, 3, 5, 8, 13.

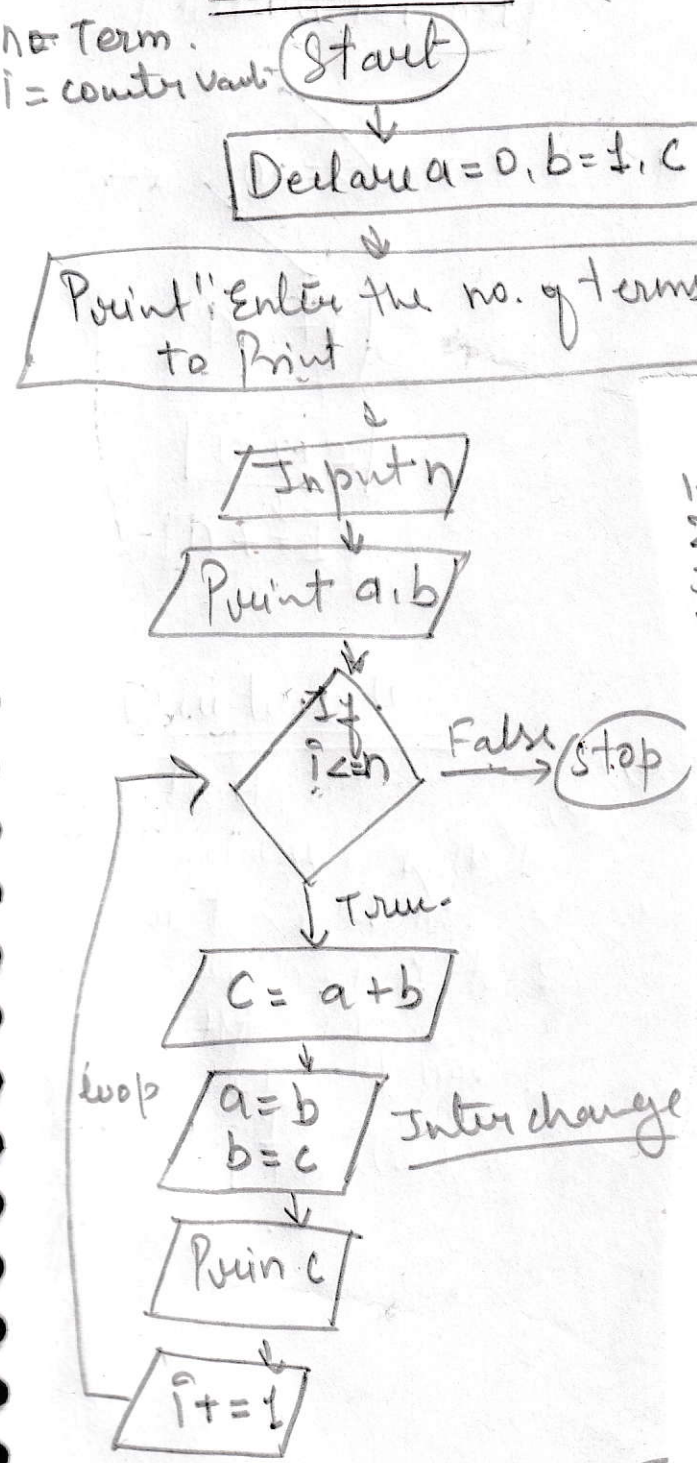
a b c
0+1 = 1
1+1 = 2
1+2 = 3
3+2 = 5
5+3 = 8
8+5 = 13

a=0 b=1 c=a+b.

n = Term.
i = counter var.

0=1
1=1

Flowchart.



Pseudocode. Q5.

1. Start.
2. Declare a=0, b=1, c, n, i=2
3. Input n
4. Print a, b
5. For loop. i = 2 to 8
6. c = a+b
7. a = b, b = c
8. Print c
9. End for loop
10. Stop.

* If we write 10. fibonacci

a=b
b=c

a=1 +2
b=1

a=1, +=3
b=2

a=2, 5
b=3

0 +	1	1	8	2
1 +	1	2		3
1	2	3		4
2	3	5		5
3	5	8		
5	8	13		