

- Identity Property:

- addition & subtraction →

$$\begin{aligned}5 + 0 &\rightarrow 5 \\5 - 0 &\rightarrow 5\end{aligned}$$

Identity → 0

- multiplication & division →

identity → 1

$$7 * 1 = 7$$

$$7 / 1 = 7$$

Running Sum for loop

Problem Submissions Leaderboard Discussions

You will be given a number n of integer data-type.

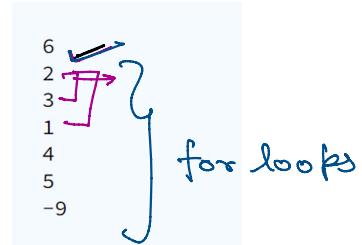
After this you will be given n integers as input of integer data-type, and you have to print the sum after you take input of an integer each time.

Initially the sum is zero.

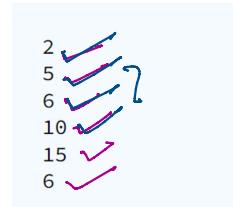
- Cumulative adding

Number	Cumulative Sum
5	5
10	→ 15
10	→ 25
20	→ 45
30	→ 75
30	→ 105
50	→ 155
100	→ 255

Sample Input 1



Sample Output 1



```
int n = input  
sum = 0;  
for (int i = 1; i <= n; i++)  
    int num = sc.nextInt();  
    sum += num;  
    sys.out.println(sum);
```

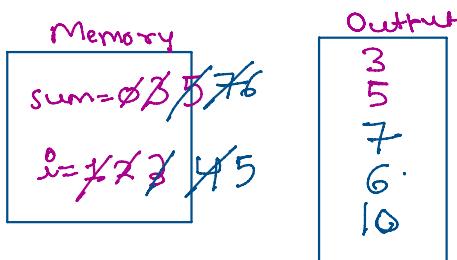
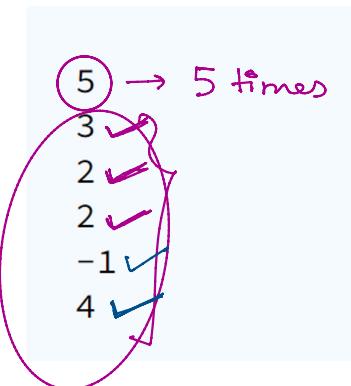
- When we want the process result we use `println()` statement inside the for loops.
- When we want the final result we use `println()` statement outside the for loops

```

Scanner scn = new Scanner(System.in);
int n = scn.nextInt(); → 5 ✓
int sum = 0; ✓ 3 ≤ 5
for(int i = 1; i <= n; i++) {
    int num = scn.nextInt(); → 3 2 4 ✓
    sum += num; sum = 3 + 2 = 5
    System.out.println(sum); ✓ 7 - 1 = 6 + 4
}

```

Sample Input 0



$$\text{Account} = \emptyset + 10 + 15 = 25 + 50 = 75 - 25 = 50$$

sell fruits $\Rightarrow 10$ ✓
 sell fruits $\Rightarrow 15$
 sell fruits = 50
 purchase fruits = -25

Fibonacci number 12

Problem	Submissions	Leaderboard	Discussions
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You have given an integer n , you have to print first n numbers of the fibonacci series till n .

- Fibonacci Series \rightarrow



- Fibonacci Series \rightarrow 0 1 $\frac{+}{}$ $\frac{-}{}$ $\frac{+}{}$ $\frac{-}{}$ $\frac{+}{}$ $\frac{-}{}$

$$c = a + b$$

a	b	c										
0	1	1	2	3	5	8	13	21	34	55	89	

✓ ✓

Steps

- $n \rightarrow$ input 13
- int $a = 0, b = 1;$
- for ($i = 1 ; i \leq n ; i++$)
- print (a) ✓
- int $c = a + b$
- $a = b$
- $b = c$

$i = 1, 2, 3, 4, 5$

1	2	3	4	5	6	7	8	9	10	11	12
0	1	1	2	3	5	8	13	21	34	55	89



$i = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10$

```
Scanner scn = new Scanner(System.in);
int n = scn.nextInt(); 10
int a = 0;
int b = 1;
for(int i = 1 ; i <= n ; i++){
    System.out.print(a + " ");
    int c = a+b; ✓
    a = b; ✓
    b = c; ✓
}
System.out.println();
```

0 1 1 2 3 5 8 13 21 34 ✓

10 ✓

Sample Output 0

0 1 1 2 3 5 8 13 21 34

Nth Fibonacci Number 7

[Problem](#)[Submissions](#)[Leaderboard](#)[Discussions](#)

Nth term of Fibonacci series $F(n)$, where $F(n)$ is a function, is calculated using the following formula -

- Whenever the question demands the process / progress of for loop to be printed just write `println()` statement inside the for loops.
- whenever question demand to print the final output we don't care about the process. So `println()` statement will be outside for loops.

```
Scanner scn = new Scanner(System.in);
int n = scn.nextInt(); 4
int a = 0;
int b = 1;      4 ≤ 4
for(int i = 1 ; i <=n ; i++){
    int c = a+b;
    a = b;
    b = c;
}
System.out.println(a);
```

$i = 1 \leq 4$

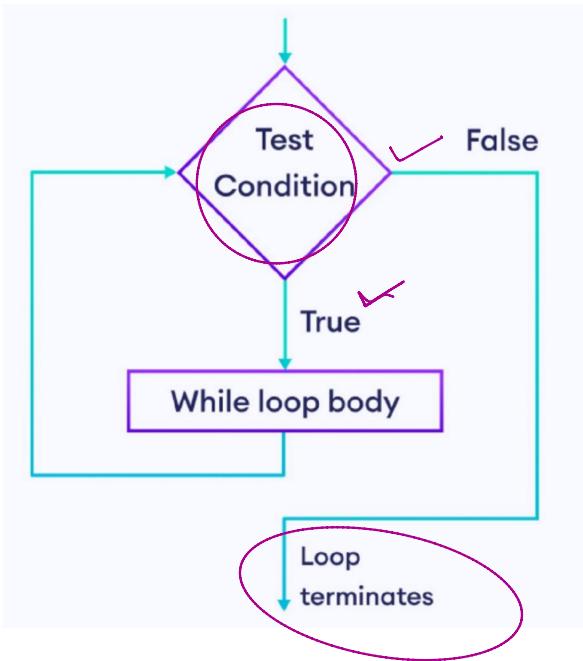
	a	b				
0	0	1				
1	1	1				
2	2	3				
3	3	5				
4						

... 3

While loop

Syntax → `while (testCondition) {`

`// body of while loop`



```

int i = 0 ;
while(i < 3){
    System.out.println("Geekster");
    i++;
}

```

```

int i = 0 ;
while(i<3){ test condition
    System.out.println("Geekster");
}   updating no value
      ...

```

infinite

```

int i = 0 ;
while(true){
    System.out.println("Geekster");
}
      ...

```

infinite loops

boolean
test condition

true
false

```

int i = 0 ; ①
while(i<=10){②
    System.out.println("Geekster");③
    i++;| ④
}

```

① ✓ ② ✓ ③ ✓ ④ ✓

}

```
for(int i 1 ✓ = 1 ; i<2 ✓ 10 ; i4 ✓++){
    System.out.println("Geekster")3
}
```

break & Continue

Note: breaks & Continues always work under conditions.
if - else → you can write to break/continue keyword
inside the if - else condition.

```
for(int i ✓ = 1 ; i<✓ 10 ; i✓++){
    if(i==4){
        break;
    }
    System.out.println(i);
}
```

i= ~~1, 2, 3~~ 4

1
2
3

```
int number = 51; ✓
while(✓ true){ infinite
    if(number % 7 == 0){
        break;
    }
    number++;
}
System.out.println(number); ✓
```

Memory
number → 51
56 52
53 54
54 55

true

for (int i=0; ^{true}; i⁺⁺)

Continue → skip that part

```
for ( i=0 to 10 )  
{   if ( i==4 )  
    { continue }  
    print (i)  
}
```

0
1
2
3
5
6
7
8
9
10

```
for(int i = 1; i < 11; i++){  
    if(i%2 !=0){ → odd  
        continue; ← skip  
    }
```

1 → skip
2 → print
3 → skip
4 → print
5 → skip
6 → print
⋮

```
    System.out.println(i); ✓
```

```
}
```

Break Vs Continue

- Ends the entire loop
- Skips the code after it for that iteration of the loop.

from 41 → 55 — all need to complete this question with while loop.

