

fibonacci

0 1 1 2 3 5 ...

✓ 1 1 2 3 5 ...

0 1 1 2 3 5 8 13 ...

1 1 2 3 5 ...

Fibonacci number 12

Problem

Submissions

Leaderboard

Discussions

You have given an integer n, you have to print first n numbers of the **fibonacci** series till n.

$n=5$

0 1 1 2 3

?

$n=6$

0 1 1 2 3 5

$n=7$

0 1 1 2 3 5 8

$n=$

for (n times)
{
 + print
 + logic
}

Sample Input 1

5

Sample Output 1

0 1 1 2 3

a = 0

b = 1

0

1

1

2
=

3
=

5

8

a

b

```
for ( // ?  
      syso(a) )  
{  
      
}
```

```
Scanner scn = new Scanner(System.in);
int n = scn.nextInt(); // 3
```

```
for(int i = 0; i < n; i++){
    System.out.println("aman");
```

```
}
```

```
}
```

```
}
```

aman

~~i=0~~

~~1~~

~~2~~

i= 3

~~0 < 3~~ ✓

~~1 < 3~~ ✓

~~2 < 3~~ ✓

~~3 < 3~~ ✗

i=0 0 < 3 1 < 3 2 < 3 (3 < 3) ✗

```
int n = scn.nextInt();
```

```
for(int i = 1; (i <= n); i++){
    System.out.println("aman");
```

```
}
```

~~i=1~~

~~2~~

~~3~~

4

~~1 ≤ 3~~ ✓

~~2 ≤ 3~~ ✓

~~3 ≤ 3~~ ✓

~~4 ≤ 3~~ ✗

$n = 5$

0 1 1 2 3

0 1 1 2 3
a n

b

$0 < 5^{\checkmark}$

$1 < 5$

$2 < 5^{\checkmark}$

$3 < 5^{\checkmark}$

$4 < 5^{\checkmark}$

$5 < 5$ ✗

$a = 0$ ✗ ✗ ✗ ✗ ✗ $i = 0$

$b = 1$ ✗ ✗ ✗ ✗ ✗ ✗ ✗ ✗

next = 8

dry run
 $n = 4$

```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         Scanner scn = new Scanner(System.in);
8         int n = scn.nextInt();
9         int a = 0;
10        int b = 1;
11
12        for(int i = 0; i < n; i++){
13            System.out.print(a + " ");
14            int next = a + b;
15            a = b;
16            b = next;
17        }
18    }
19 }
20 }
```

0 1 1 2 $n=4$

0 1 1 2 3
↑

? → 0 1 1 2

$a = \phi \ X \ X \ X \ 3$
 $b = 1 \ 1 \ 2 \ 3 \ 5$

next = 5

$i = \phi$
1
2
3
4

$0 < 4 \checkmark$
 $1 < 4 \checkmark$
 $2 < 4 \checkmark$
 $3 < 4 \checkmark$

$4 < 4$
 $a = b$

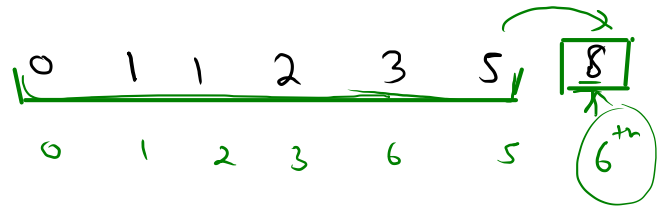
// $n=4 \rightarrow 3$

```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         Scanner scn = new Scanner(System.in);
8         int n = scn.nextInt();
9         int a = 0;
10        int b = 1;
11
12        for(int i = 0; i < n; i++){
13            System.out.print(a + " ");
14            int next = a + b;
15            a = b;
16            b = next;
17        }
18        System.out.println(a);
19    }
20 }
```

Nth Fibonacci Number 7

$n=6$

↪ 8



```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         Scanner scn = new Scanner(System.in);
8         int n = scn.nextInt();
9         int a = 0;
10        int b = 1;
11
12        for(int i = 0; i < n; i++){
13            int next = a + b;
14            a = b;
15            b = next;
16        }
17        System.out.print(a + " ");
18
19    }
20 }
```

$n=4$

↪ 3

$n=5$

↪ 5

$n=7$

↪ 13

Running Sum for loop

Problem	Submissions	Leaderboard	Discussions
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Imagine you are a math teacher and one of your students, Maria, is struggling with understanding how to find the running sum of a series of integers. You decide to give her a problem to work on as practice.

The problem is as follows: Maria will be given a series of n integers as input. she has to print the sum after she take input of an integer each time

For example, if the series of integers is 3, 4, 5, 6 the output should be 3, 7, 12, 18

Maria is a little bit confused at first, but with your guidance and some careful practice, she is eventually able to understand and solve the problem successfully.

NOTE: Initially the sum is zero.

Sample Input 0

5
1 2 3 4 5

Sample Output 0

1 3 6 10 15

algo:
i/p
find sum
print sum

sum = 0 + 3 + 4 + 5 + 6

i/p { 3, 4, 5, 6 }

eg. i/p { 5 }

1	2	3	4	5
1	3	6	10	15

o/p { 1, 3, 6, 10, 15 }

eg. i/p { 3 }

7	2	3
7	9	12

o/p { 7, 9, 12 }

sum = 0 + 1 + 2 + 3 + 4 + 5

1 3 6 10 15

eg. i/p { 2 }

11	8
11	19

o/p { 11, 19 }

sum = 0 + 1 + 19 + 11 + 8

3
7 2 5

7	9	14
---	---	----

n=3

sum = 0 + 7 + 8 + 14

i=1	1 ≤ 3	x=7
2	2 ≤ 3	x=2
3	3 ≤ 3	x=5
4	4 ≤ 3	

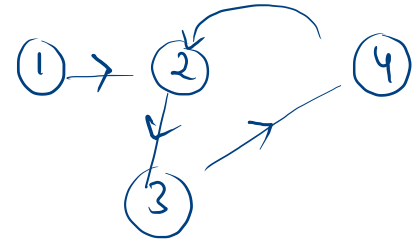
```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         Scanner scn = new Scanner(System.in);
8         int n = scn.nextInt();
9         int sum = 0;
10
11         for(int i = 1; i <= n; i++){
12             int x = scn.nextInt(); //input
13             sum += x; // find sum
14             System.out.print(sum + " ");
15         }
16     }
17 }
18 }
```



```

11 public static void main(String[] args) {
12     for(int i = 0; i<3; ){
13         System.out.println(i);
14     }
15 }
16 }

```



$$i=0$$

$$\begin{aligned}
 0 < 3 & \checkmark \\
 0 < 3 & \checkmark \\
 0 < 3 & \checkmark \\
 0 < 3 & \checkmark \\
 0 < 3 &
 \end{aligned}$$

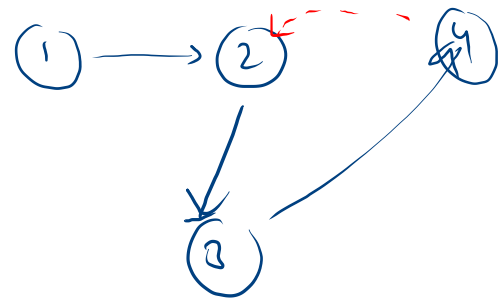
$$0 \leq 3$$

0
0
0
0
0
0
0
0

```

11 public static void main(String[] args) {
12     for(int i = 0; i<3; ){
13         System.out.println(i);
14         i++;
15     }
16 }
17 }
18

```



	$i = 0$	$0 < 3$
0	1	$1 < 3$ ✓
1	2	$2 < 3$ ✓
2	3	$3 < 3$ ✗

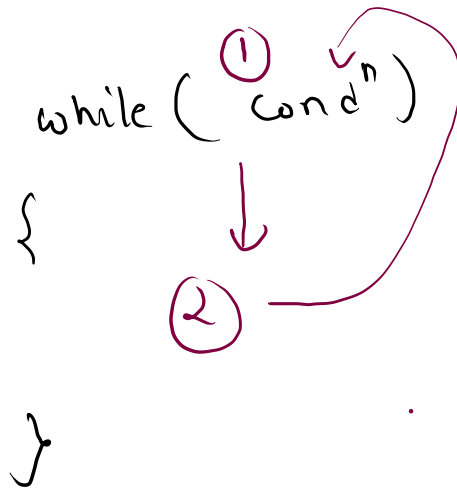
```

11 public static void main(String[] args) {
12     int i = 0;
13     for( ; i<3; ){
14         System.out.println(i);
15         i++ ;
16     }
17 }
18 }
19 }

```

0
1
2

while loop



```
11 public static void main(String[] args) {  
12     int i = 0;  
13  
14     while( i<3){  
15         System.out.println(i);  
16         i++;  
17     }  
18 }
```

$i = 0$
✓
2
3

$0 < 3$
 $1 < 3$ ✓
 $2 < 3$ ✓
 $3 < 3$ ✗

Why to use while?

Adv. of while?

What is better for v/s while?

It's your choice.

↓
Audi
(Burger)

↓
BMW
(Pizza)

Print 0 to n.

n=4.

```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         Scanner scn = new Scanner(System.in);
8         int n = scn.nextInt();
9
10        int i = 0;
11        while(i <= n){
12            System.out.println(i);
13            i++;
14        }
15    }
16 }
```

~~i=0~~

~~1~~

~~2~~

~~3~~

~~4~~

5

0 ≤ 4 ✓

1 ≤ 4 ✓

2 ≤ 4 ✓

3 ≤ 4 ✓

4 ≤ 4 ✓

5 ≤ 4 ✗

0
1
2
3
4

Print 5 to n

```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         Scanner scn = new Scanner(System.in);
8         int n = scn.nextInt();
9
10        int i = 5;
11        while(i <= n){
12            System.out.println(i);
13            i++;
14        }
15    }
16 }
```

Print 4,13,22,31.....n

Problem

Submissions

Leaderboard

Discussions

Sample Input 0

55

Sample Output

4
13
22
31
40
49

A programming task was assigned to a beginner named Alex. The task was to print the sequence 4, 13, 22, 31.... until n using a while loop. Alex took the value of n as input from the user and successfully completed the task.

4, 13, 22, 31,

n=55

4 13 22 31 40 49 55 58

+9 +9 +9 +9 +9

start = 4

update \Rightarrow

condⁿ \Rightarrow

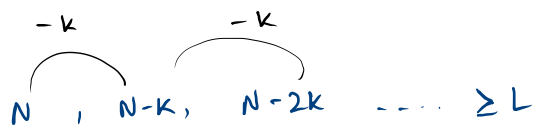
$i += 9$
 $i \leq n$

```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         Scanner scn = new Scanner(System.in);
8         int n = scn.nextInt();
9
10        int i = 4;
11        while(i <= n){
12            System.out.println(i);
13            i += 9;
14        }
15    }
16 }
```

Print n, n-k, n-2k, n-3k.... till l

You will be given three integer inputs N, K and L and you to print the series N, N-K, N-2K, N-3K.... till last where the value printed in the end should be just greater than or equal to the given input L.

To be clear: You will print L if L belongs to the series.



start = N
Update → term - K
condⁿ → $i \geq L$

N = 22 L = 6

```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         Scanner scn = new Scanner(System.in);
8         int N = scn.nextInt();
9         int K = scn.nextInt();
10        int L = scn.nextInt();
11
12        int i = N;
13        while(i >= L){
14            System.out.println(i);
15            i -= K;
16        }
17    }
18 }
```

N=22
K=4
L=6

~~i=22~~
18
~~14~~
~~10~~
6
2

$22 \geq 6$
 $18 \geq 6$
 $14 \geq 6$
 $10 \geq 6$
 $6 \geq 6$
 $2 \geq 6$ ✗

22
18
14
10
6
2 ✗

o/p

22
18
14
10
6

Sample Input 3

22 — N
4 — K
6 — L

Sample Output 3

22
18
14
10
6