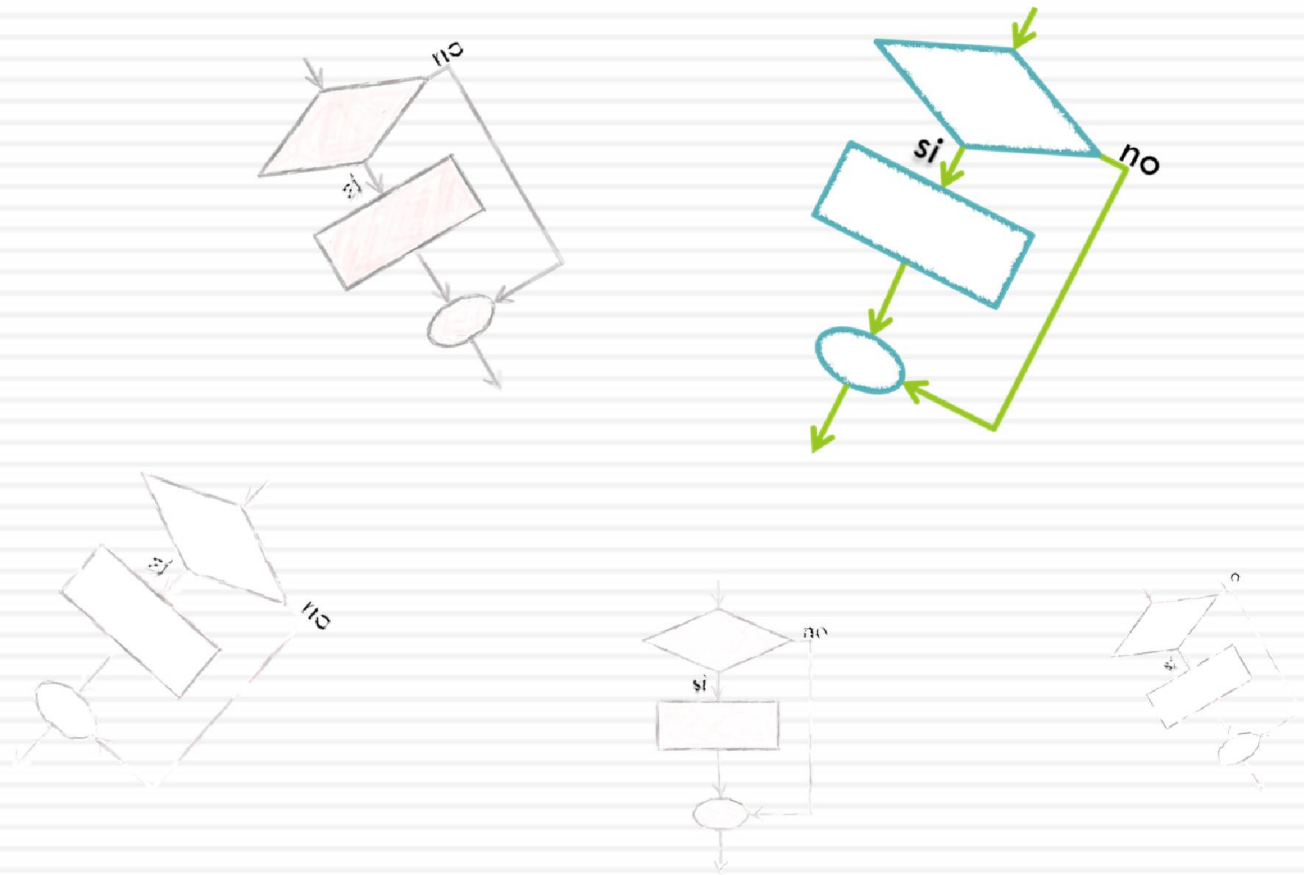




CICLO FOR



2

Estructura repetitiva: for

For

3

- ❑ Funciona similar al while.
- ❑ Es muy útil para recorrer arreglos.

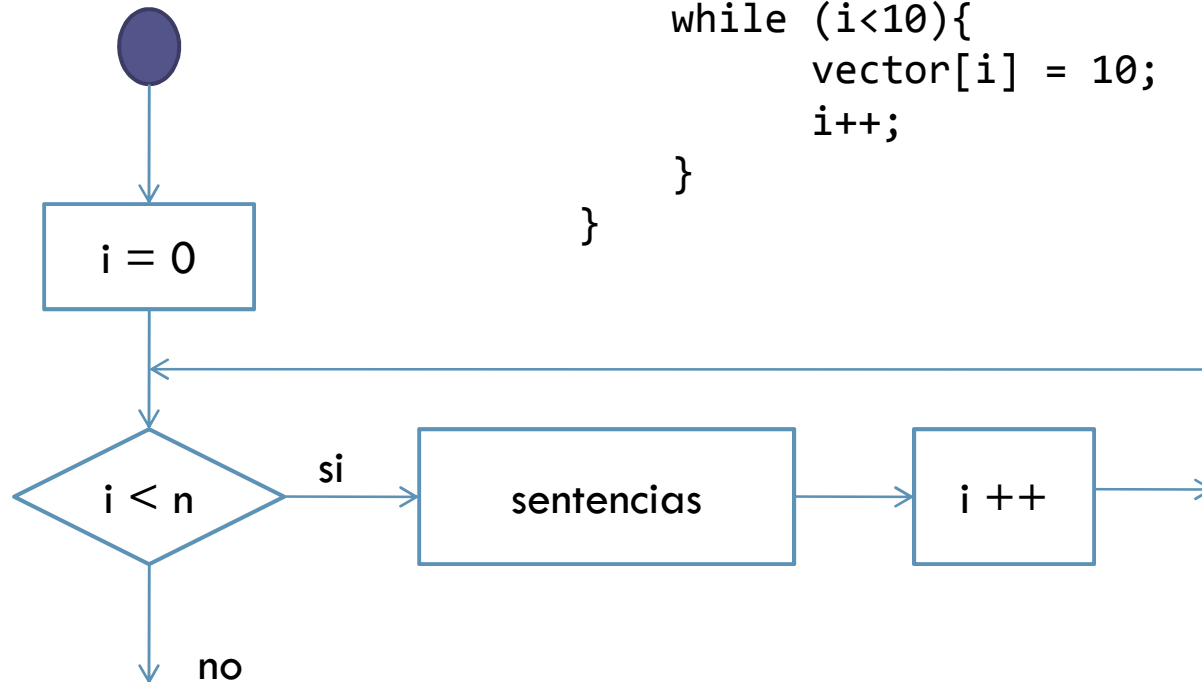
- ❑ Sintaxis:

```
for (inicialización ; condición ; incremento){  
    // Bloque de código que se repite.  
}
```

Ciclo while

4

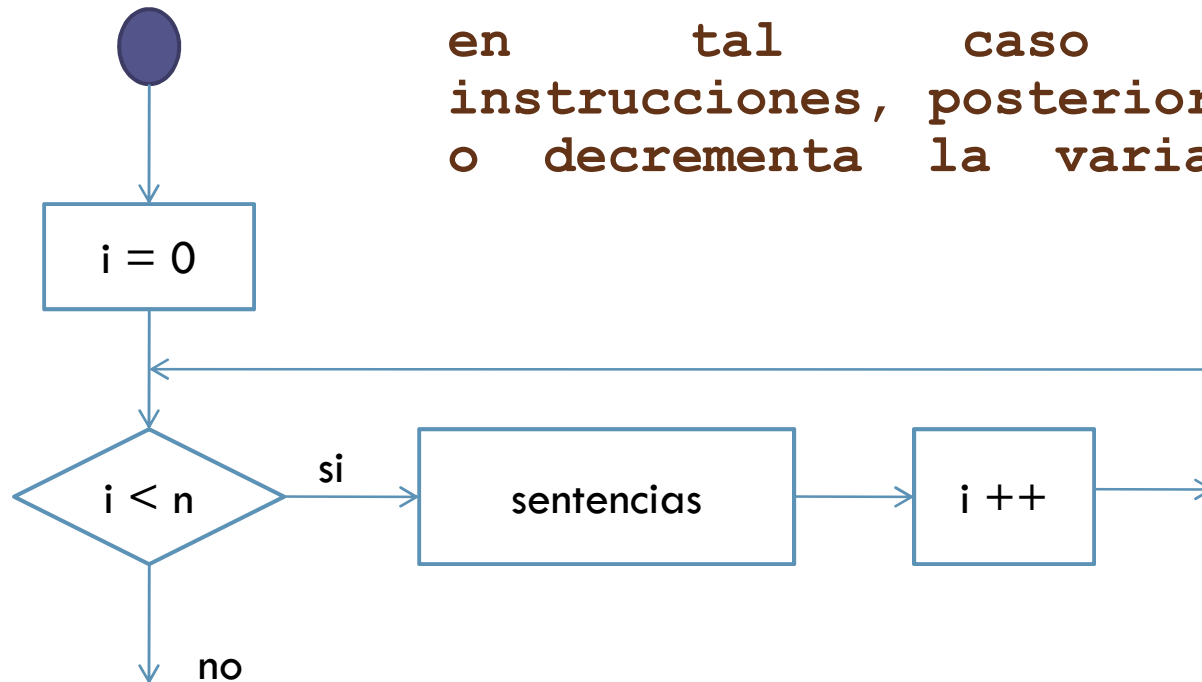
```
int main (){  
    int vector [10];  
  
    int i = 0;  
    while (i<10){  
        vector[i] = 10;  
        i++;  
    }  
}
```



For

5

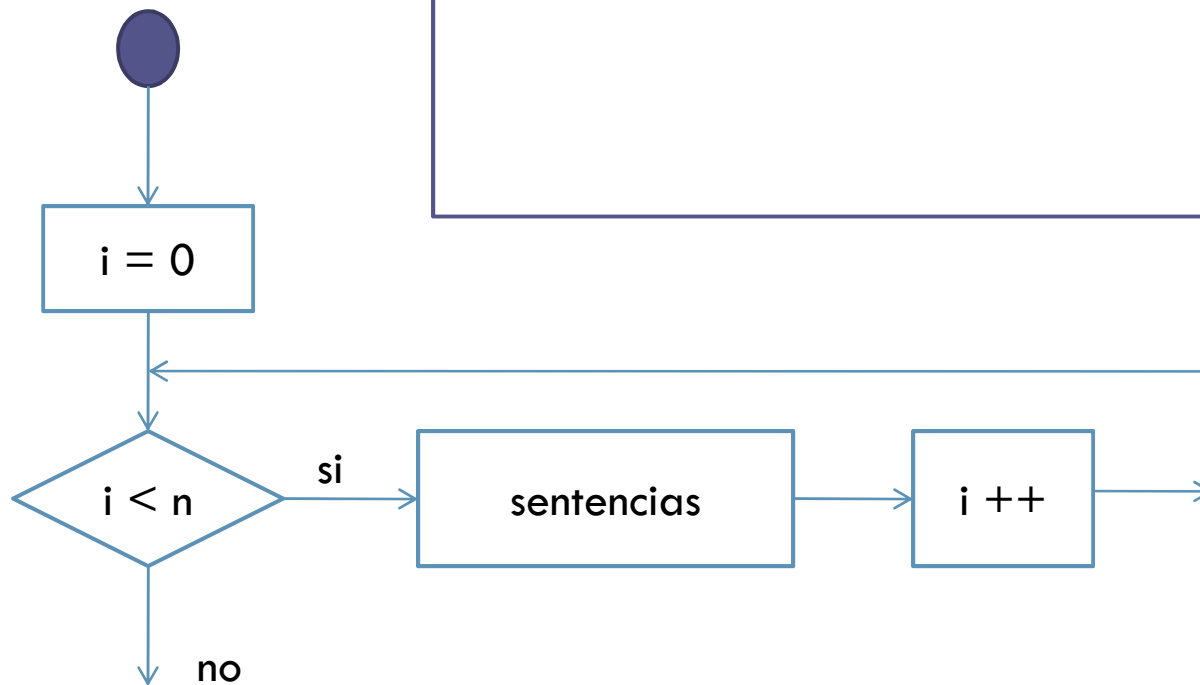
Inicializa el valor del contador, verifica si la condición se cumple y en tal caso ejecuta las instrucciones, posteriormente incrementa o decrementa la variable contador.



For

6

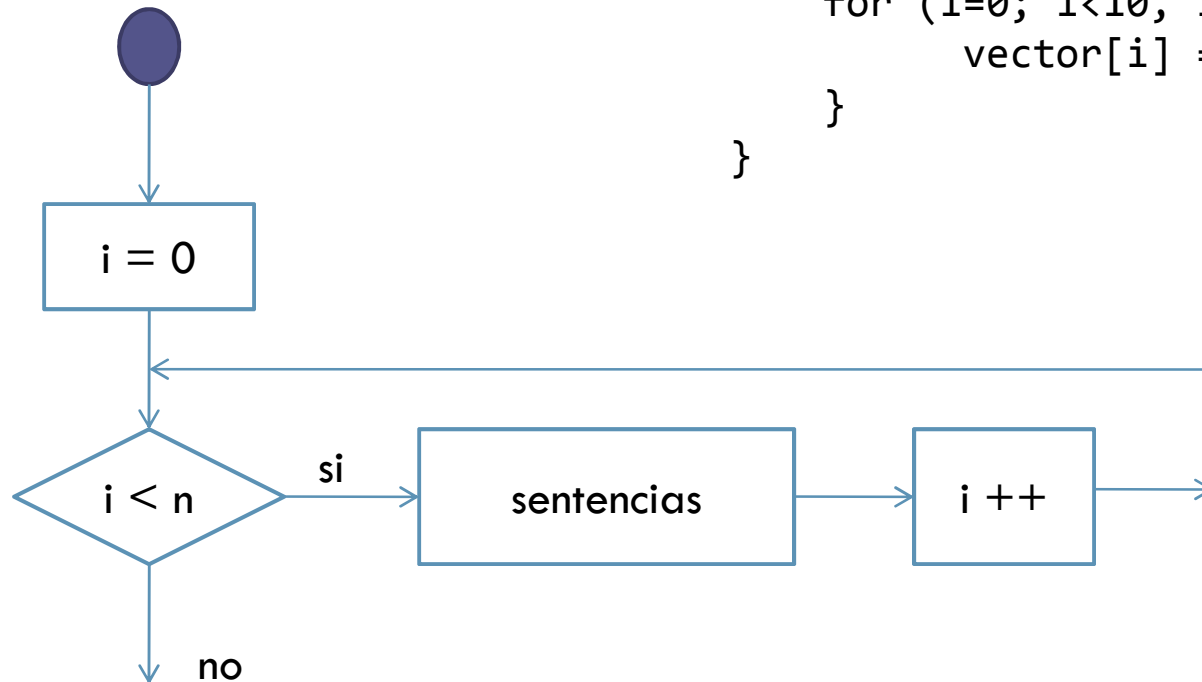
```
for (int i = 0; i < 10 ; i++ ){  
    System.out.println( "valor de i = " + i);  
}
```



Ciclo for

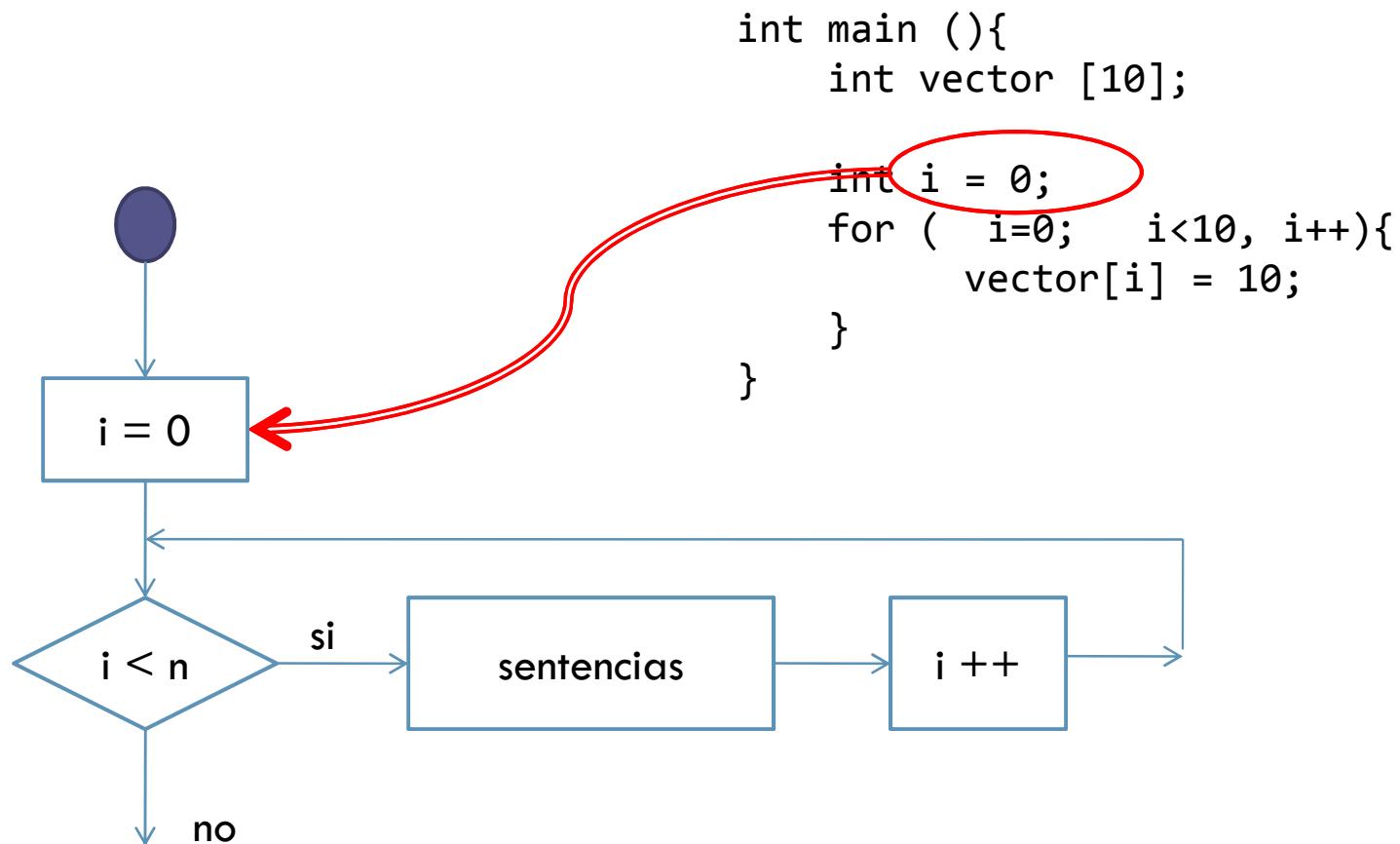
7

```
int main (){  
    int vector [10];  
  
    int i = 0;  
    for (i=0; i<10, i++){  
        vector[i] = 10;  
    }  
}
```



Ciclo for

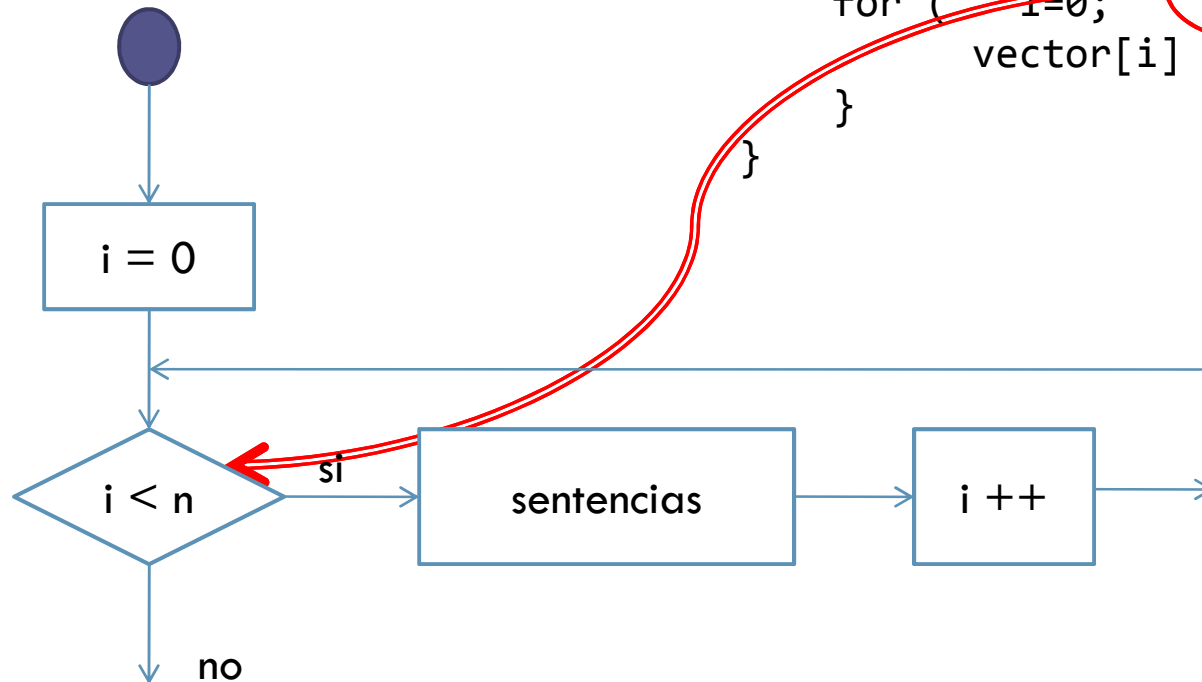
8



Ciclo for

9

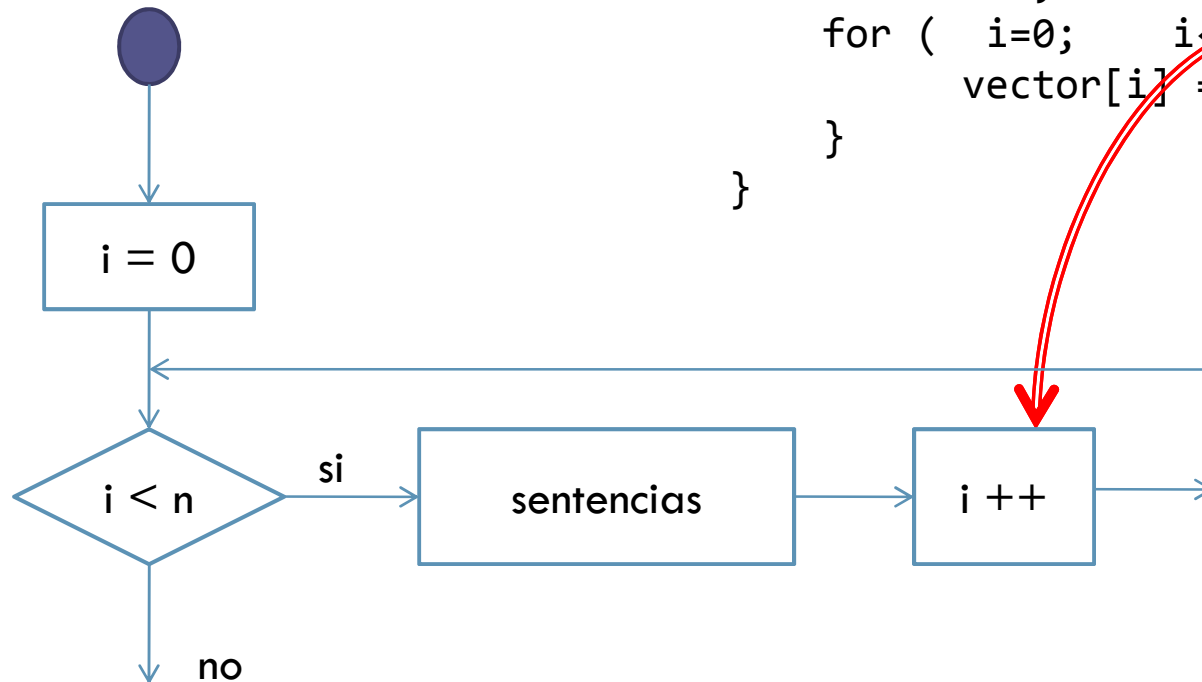
```
int main (){\n    int vector [10];\n\n    int i = 0;\n    for ( i=0; i<10, i++){\n        vector[i] = 10;\n    }\n}
```



Ciclo for

10

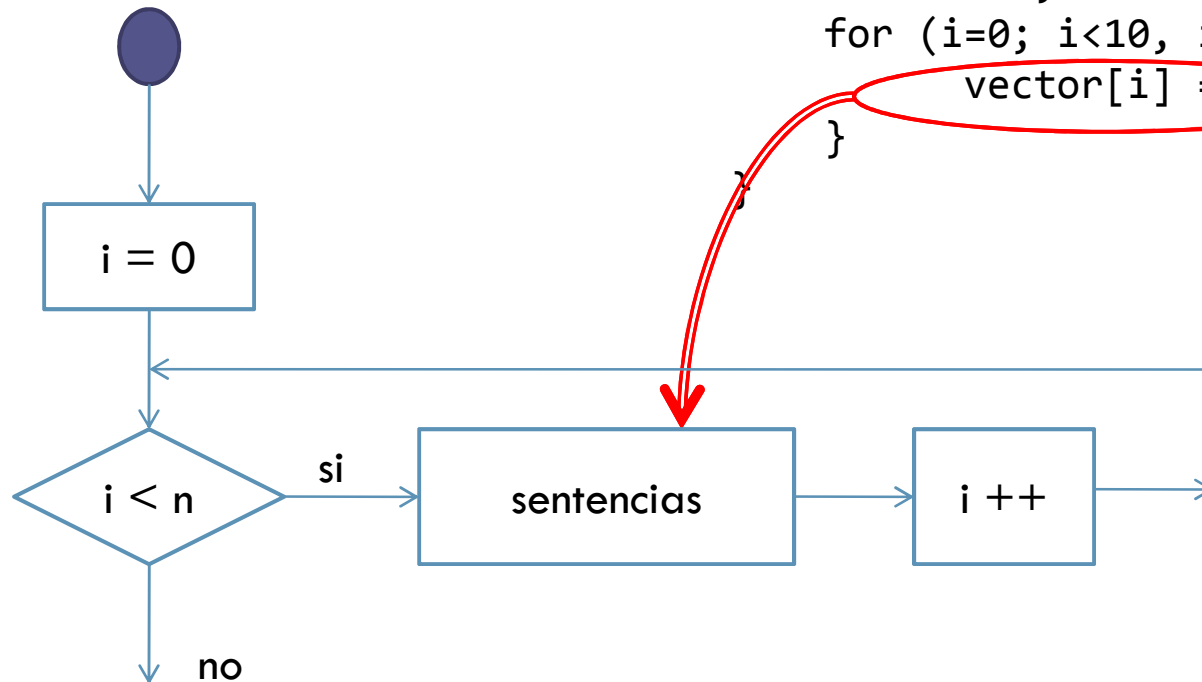
```
int main (){  
    int vector [10];  
  
    int i = 0;  
    for ( i=0; i<10, i++){  
        vector[i] = 10;  
    }  
}
```



Ciclo for

11

```
int main (){  
    int vector [10];  
  
    int i = 0;  
    for (i=0; i<10, i++){  
        vector[i] = 10;  
    }  
}
```

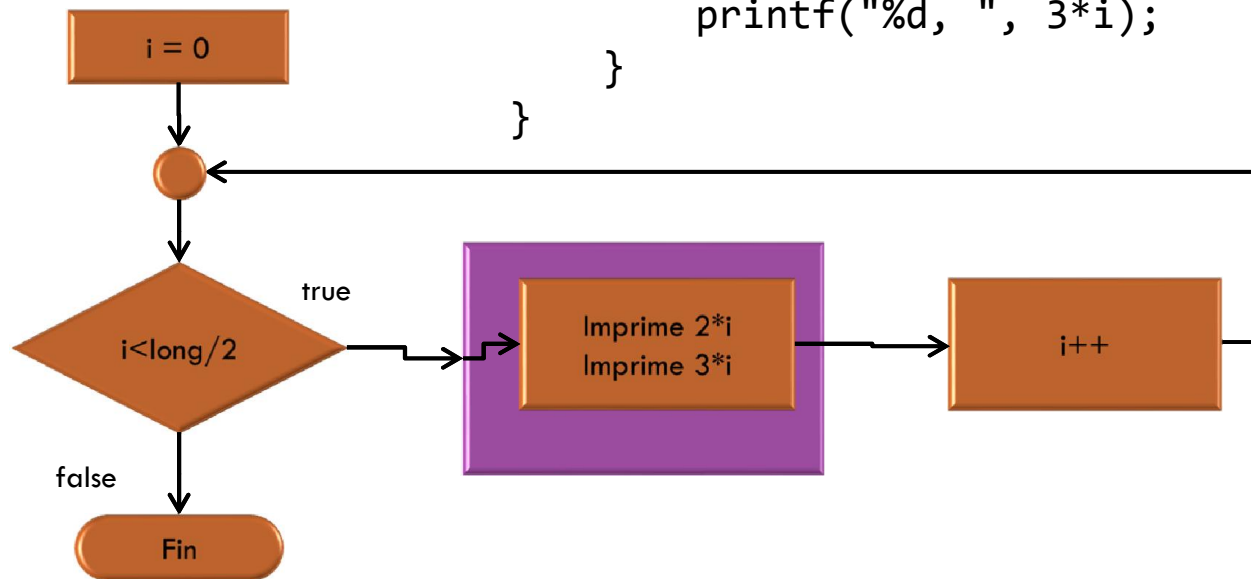


Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

12

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    for (i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```



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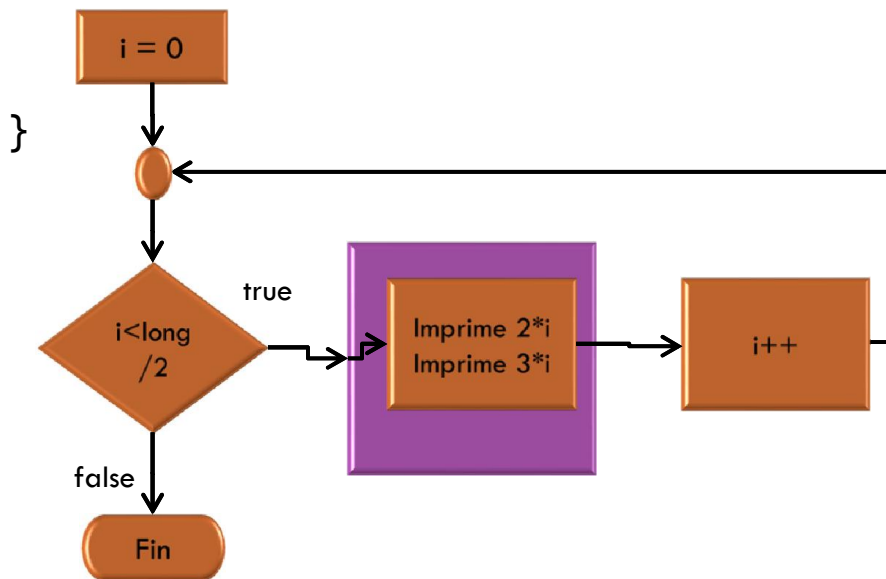
Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

13

```
int main (){  
    int longitudSerie = 50;  
    int i;  
  
    for (i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```

longitudSerie	50



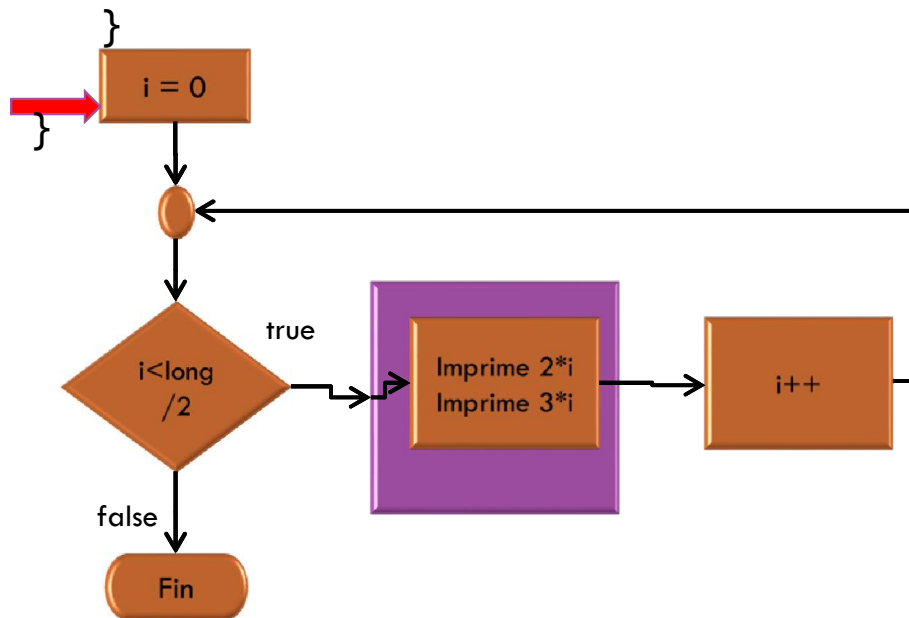
Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

14

```
int main (){  
    int longitudSerie = 50;  
    int i;  
    for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }
```

longitudSerie	50
i	1



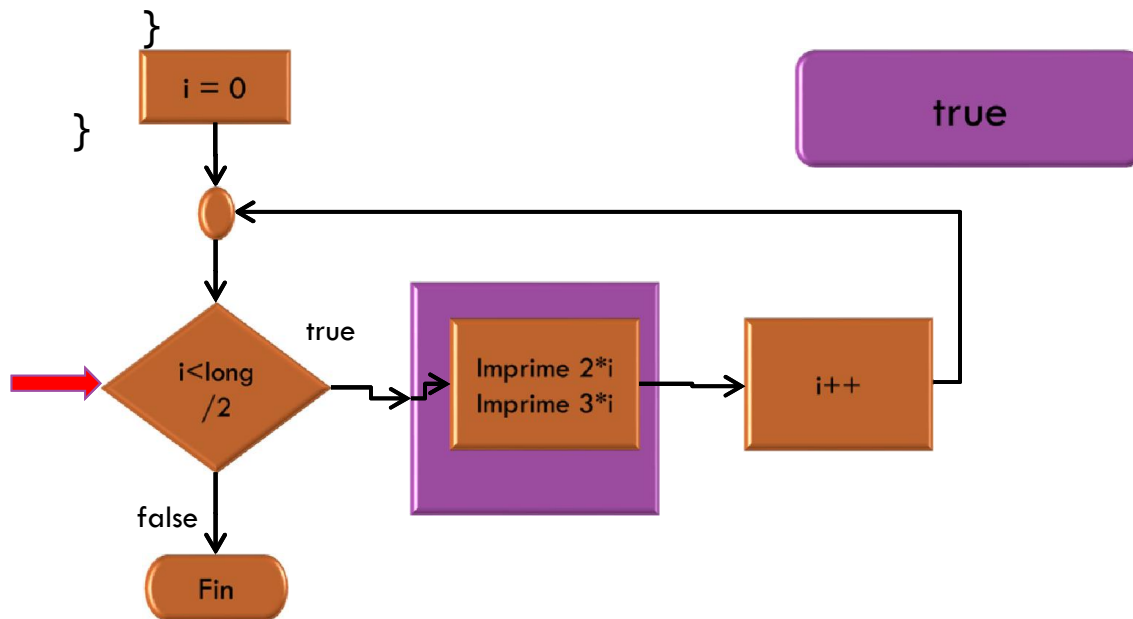
Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

15

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    → for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```

longitudSerie	50
i	1

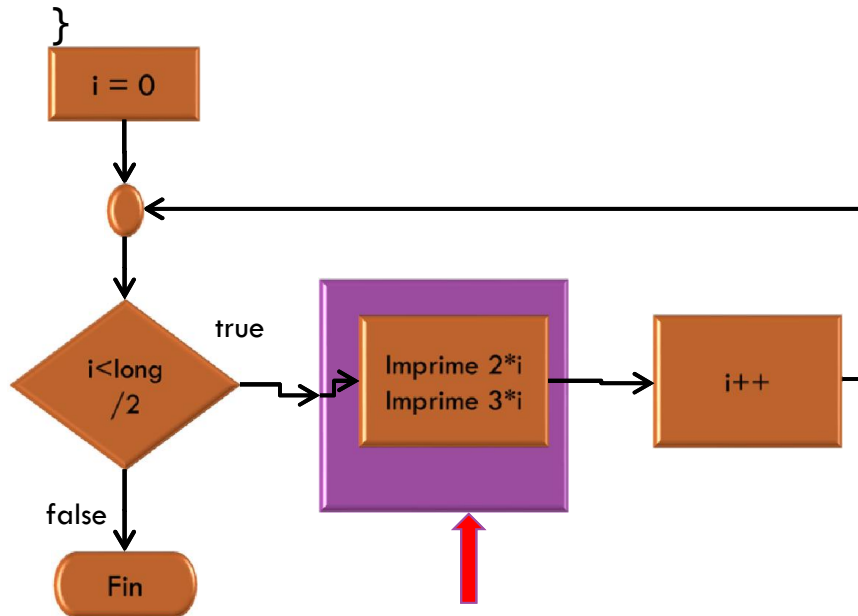


Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

16

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```



longitudSerie	50
i	1

2, 3,

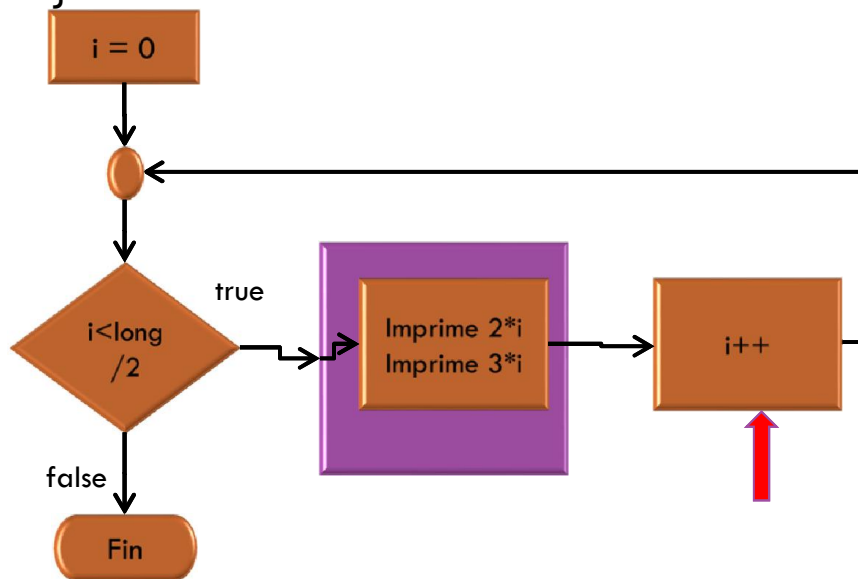
Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

17

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```

longitudSerie	50
i	2



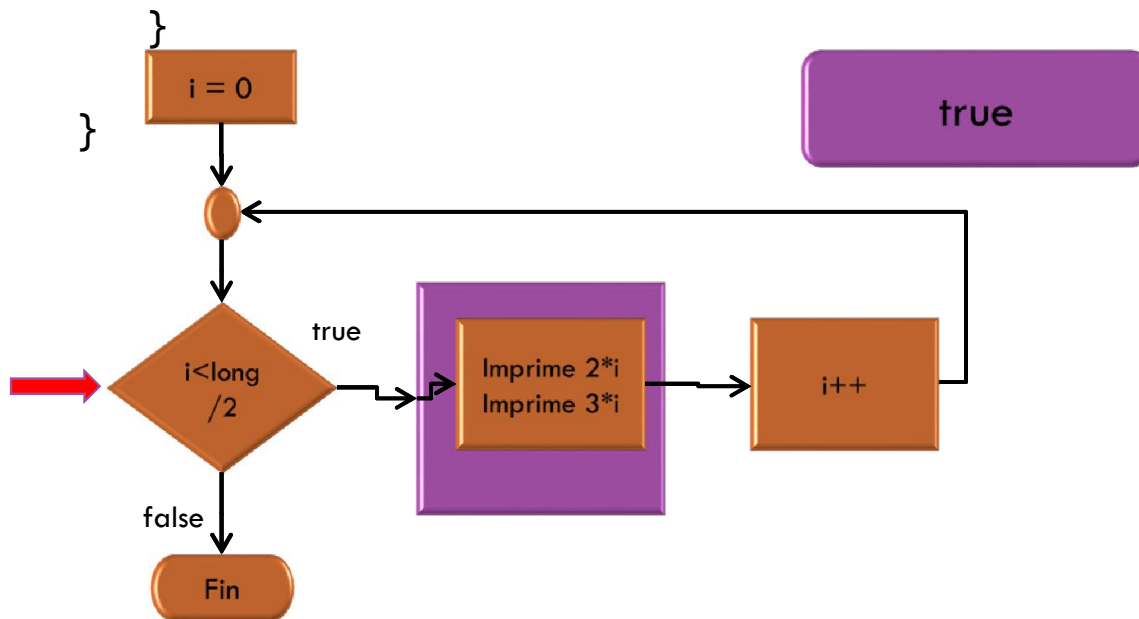
2, 3,

Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

18

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    → for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```



longitudSerie	50
i	2

2, 3,

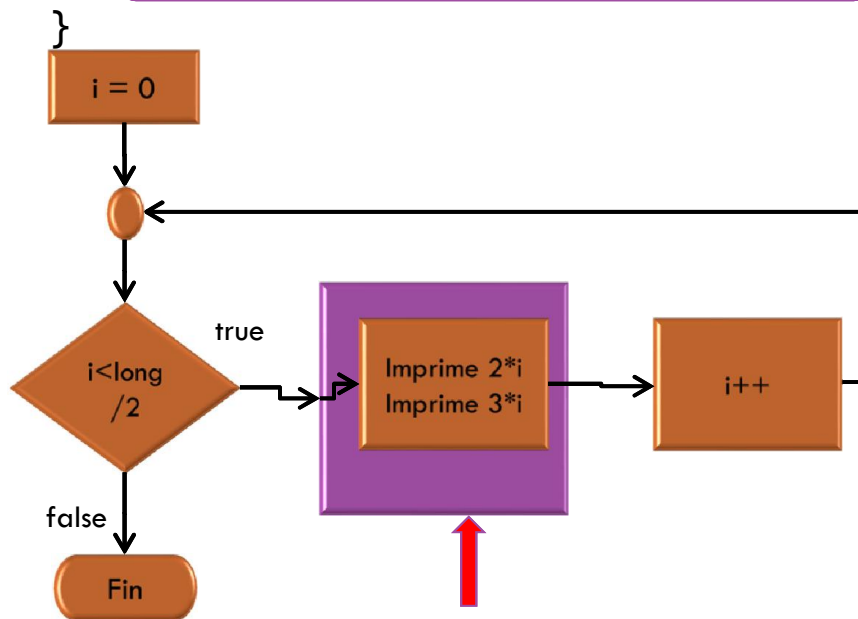
Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

19

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```

longitudSerie	50
i	2



2, 3, 4, 6,

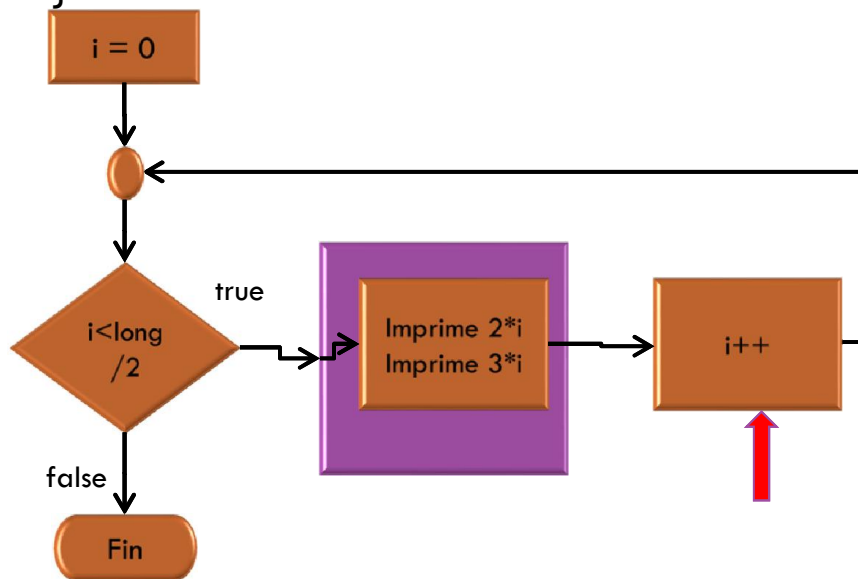
Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

20

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```

longitudSerie	50
i	3



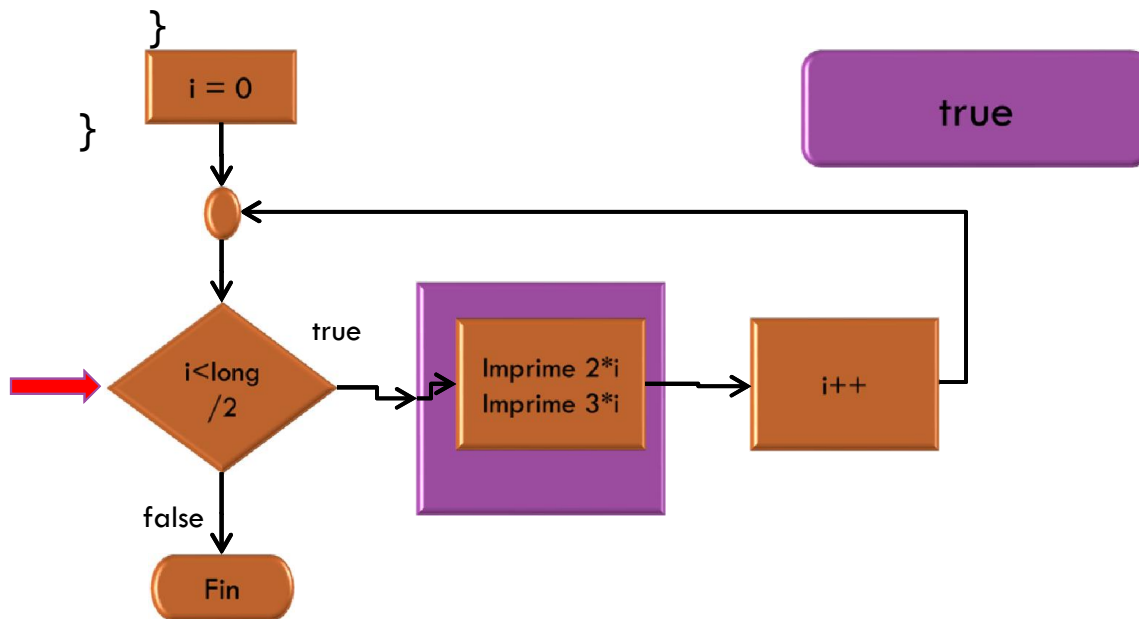
2, 3, 4, 6,

Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

21

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```



longitudSerie	50
i	3

2, 3, 4, 6,

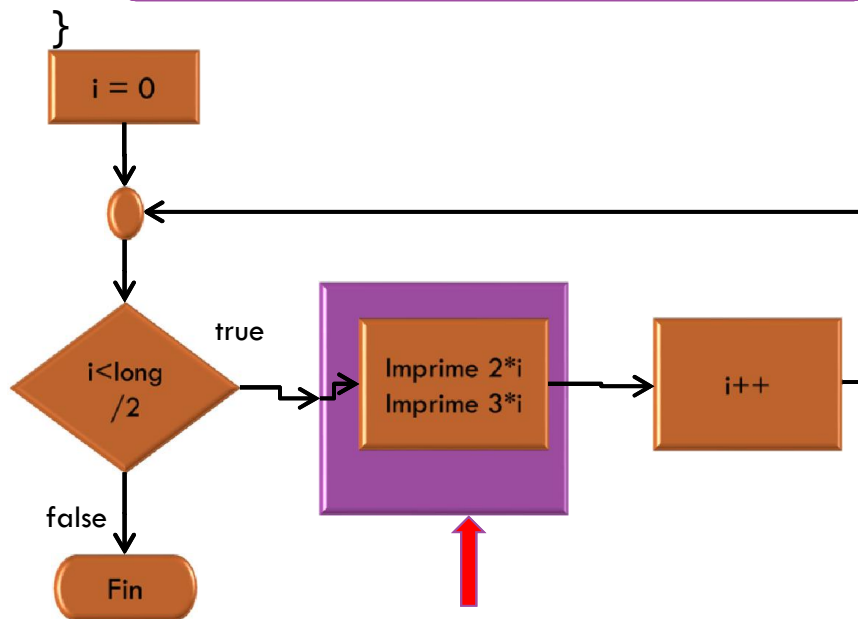
Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

22

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```

longitudSerie	50
i	3



2, 3, 4, 6, 6, 9

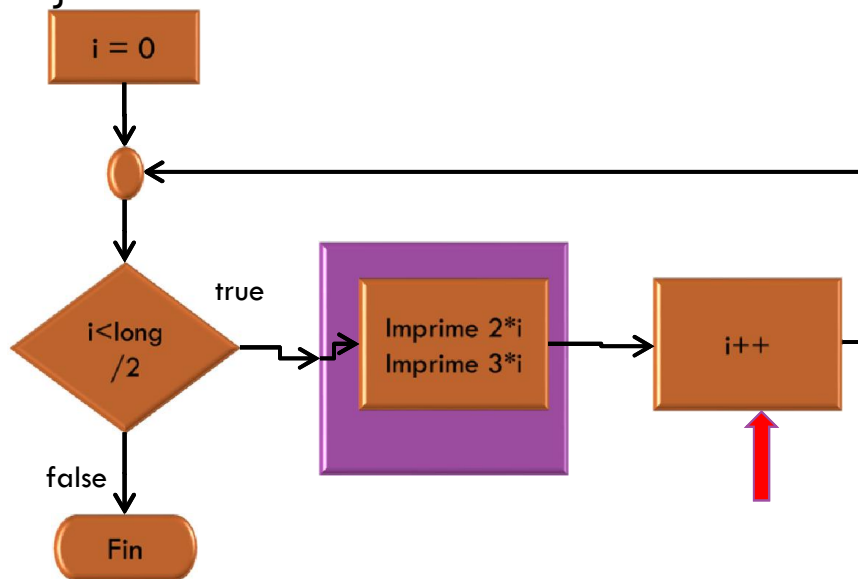
Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

23

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```

longitudSerie	50
i	4



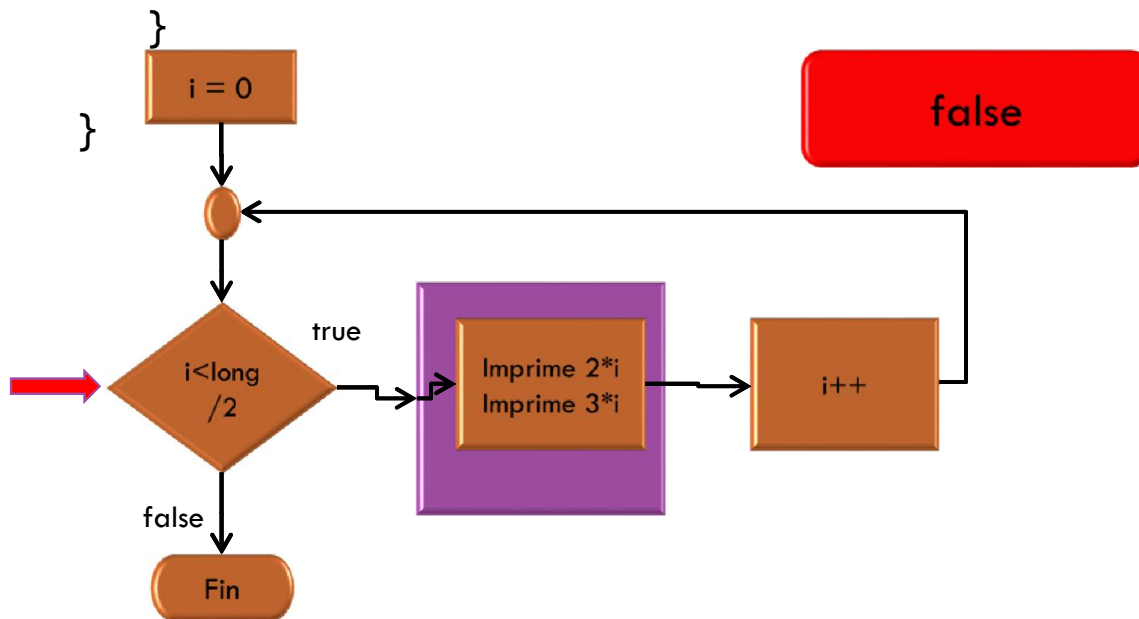
2, 3, 4, 6, 6, 9,

Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

24

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```



longitudSerie	50
i	26

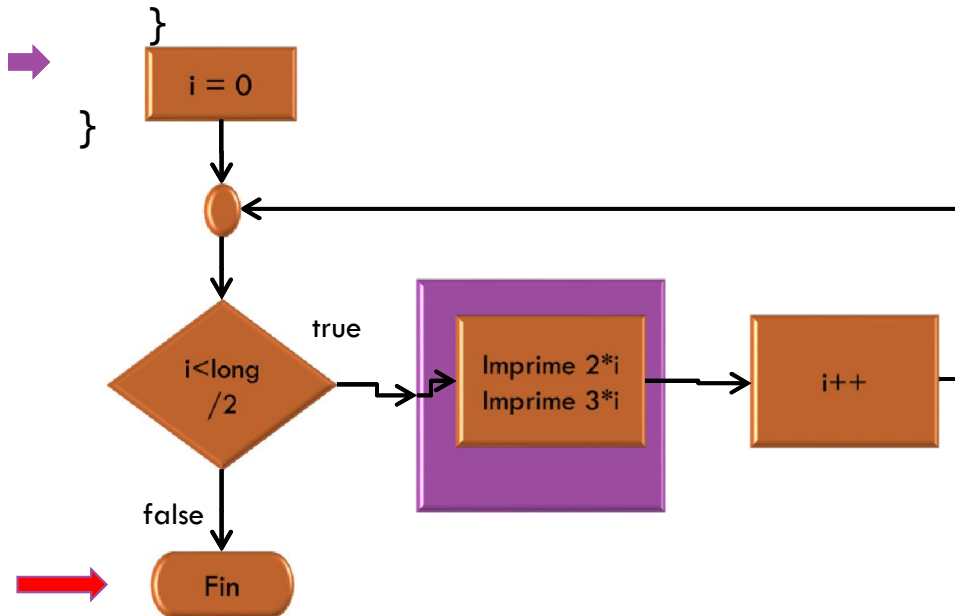
2, 3, 4, 6, 6, 9, 8, 12, 10, 15,
12, 18, 14, 21, 16, 24, 18, 27,
20, 30, 22, 33, 24, 36, 26, 39,
28, 42, 30, 45, 32, 48, 34, 51,
36, 54, 38, 57, 40, 60, 42, 63,
44, 66, 46, 69, 48, 72, 50, 75,
...

Ejemplo:

Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,

25

```
int main (){  
  
    int longitudSerie = 50;  
    int i;  
  
    for ( i = 1; i<=(longitudSerie/2); i++){  
        printf("%d, ", 2*i);  
        printf("%d, ", 3*i);  
    }  
}
```



longitudSerie	50
i	25

2, 3, 4, 6, 6, 9, 8, 12, 10,
15, 12, 18, 14, 21, 16, 24,
18, 27, 20, 30, 22, 33, 24,
36, 26, 39, 28, 42, 30, 45,
32, 48, 34, 51, 36, 54, 38,
57, 40, 60, 42, 63, 44, 66,
46, 69, 48, 72, 50, 75,
Presione una tecla para

continuar...

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Ejercicios

26

1. Escribe un programa que reciba un número N del usuario y haga la suma de todos los números desde 1 hasta N.

Ej.

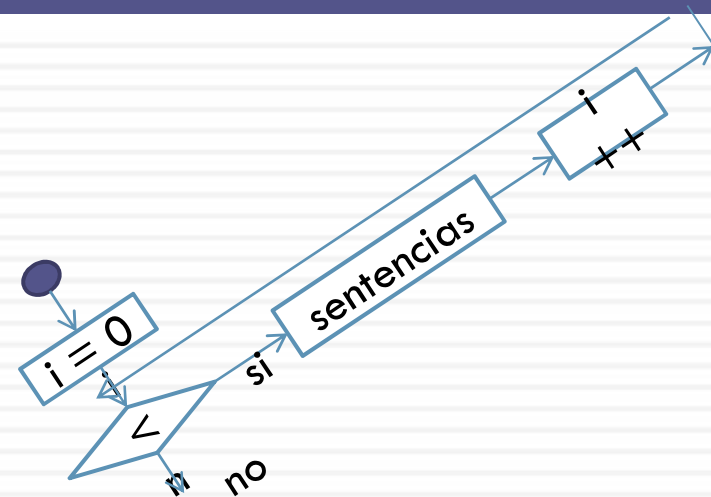
>> 5 $1+2+3+4+5 = 15$

2. Escriba un programa en C que utilice un ciclo para producir la siguiente tabla de valores

A	A+2	A+4	A+6
3	5	7	9
6	8	10	12
9	11	13	15
12	14	16	18

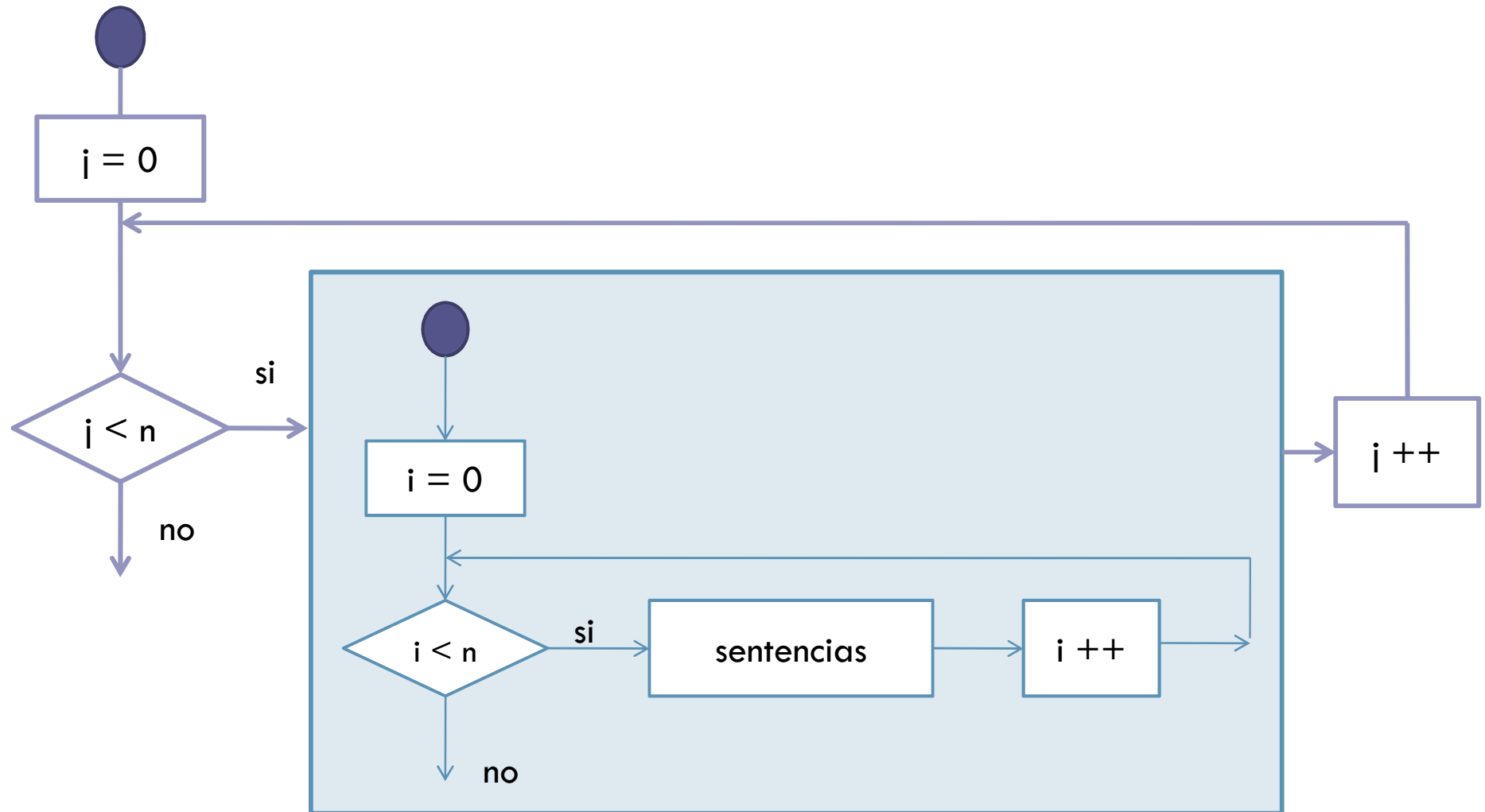
27

FOR ANIDADO



For anidado

28



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Ejemplo

29

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d,", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	

Ejemplo

30

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++) {
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++) {
```

```
            printf("j%d, ", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	
i	

Ejemplo


31

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```



```
    for (i=0; i<5; i++) {  
        printf("para i: %d \t", i);  
        for (j=0; j<3; j++) {  
            printf("j%d,", j);  
        }  
        printf("\n\n");  
    }  
    system ("Pause");  
    return 0;  
}
```

i	
i	

Ejemplo


32

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```



```
    for (i=0; i<5; i++) {  
        printf("para i: %d \t", i);  
        for (j=0; j<3; j++) {  
            printf("j%d,", j);  
        }  
        printf("\n\n");  
    }  
    system ("Pause");  
    return 0;  
}
```

i	0
j	

Ejemplo


33

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```



```
    for (i=0; i<5; i++) {  
        printf("para i: %d \t", i);  
        for (j=0; j<3; j++) {  
            printf("j%d,", j);  
        }  
        printf("\n\n");  
    }  
    system ("Pause");  
    return 0;  
}
```

i	0
j	

true

Ejemplo

34

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

➔

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d,", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	

true

Ejemplo

35

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d,", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	

true

para i: 0 _

Ejemplo

36

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++) {
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++) {
```

```
            printf("j%d,", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	0

true

para i: 0 _

Ejemplo

37

```
#include <stdio.h>

int main () {
    int i;
    int j;

    for (i=0; i<5; i++) {
        printf("para i: %d \t", i);
        for (j=0; j<3; j++) {
            printf("j%d, ", j);
        }
        printf("\n\n");
    }
    system ("Pause");
    return 0;
}
```

i	0
j	0

true

true

para i: 0 _

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Ejemplo

38

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d,", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	0

true

true

para i: 0 j0, _

Ejemplo

39

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d, ", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	1

true

true

para i: 0 j0, _

Ejemplo

40

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d, ", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	1

true

true

para i: 0 j0, _

Ejemplo

41

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d,", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	1

true

true

para i: 0 j0, j1, _

Ejemplo

42

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d, ", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	2

true

true

para i: 0 j0, j1, _

Ejemplo

43

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d, ", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	2

true

true

para i: 0 j0, j1, _

Ejemplo

44

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d,", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	2

true

true

para i: 0 j0, j1, j2, _

Ejemplo

45

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d, ", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	3

true

true

para i: 0 j0, j1, j2, _

Ejemplo

46

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++) {
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++) {
```

```
            printf("j%d, ", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	0
j	3

true

false

para i: 0 j0, j1, j2, _

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Ejemplo

47

```
#include <stdio.h>

int main () {
    int i;
    int j;

    for (i=0; i<5; i++) {
        printf("para i: %d \t", i);
        for (j=0; j<3; j++) {
            printf("j%d,", j);
        }
        printf("\n\n");
    }
    system ("Pause");
    return 0;
}
```

i	0
j	3

true

false

para i: 0 j0, j1, j2,

—

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Ejemplo

48

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++) {
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++) {
```

```
            printf("j%d, ", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	1
j	3

true

para i: 0 j0, j1, j2,

—

Ejemplo

49

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++) {
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++) {
```

```
            printf("j%d,", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }  
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	1
j	3

true

para i: 0 j0, j1, j2,

—

Ejemplo

50

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d,", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	1
j	3

true

para i: 0 j0, j1, j2,

para i:1 _

Ejemplo

51

```
#include <stdio.h>
```

```
int main () {
```

```
    int i;
```

```
    int j;
```

```
    for (i=0; i<5; i++){
```

```
        printf("para i: %d \t", i);
```

```
        for (j=0; j<3; j++){
```

```
            printf("j%d,", j);
```

```
        }
```

```
        printf("\n\n");
```

```
    }
```

```
    system ("Pause");
```

```
    return 0;
```

```
}
```

i	1
j	0

true

para i: 0 j0, j1, j2,

para i:1 _


Ejemplo

52

```
#include <stdio.h>

int main () {
    int i;
    int j;

    for (i=0; i<5; i++) {
        printf("para i: %d \t", i);
        for (j=0; j<3; j++) {
            printf("j%d,", j);
        }
        printf("\n\n");
    }
    system ("Pause");
    return 0;
}
```



i	5
j	3

true

para i: 0	j0, j1, j2,
para i: 1	j0, j1, j2,
para i: 2	j0, j1, j2,
para i: 3	j0, j1, j2,
para i: 4	j0, j1, j2,

Ejercicio

53

1. Escribe un programa que reciba un número entero N del usuario e imprima una escalinata de N pisos de asteriscos

*

**

**

*



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Ejercicio^N

54

- Haz un programa que muestre las tablas de multiplicar como se muestra a continuación.
- ▣ M y N son ingresadas por el usuario



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