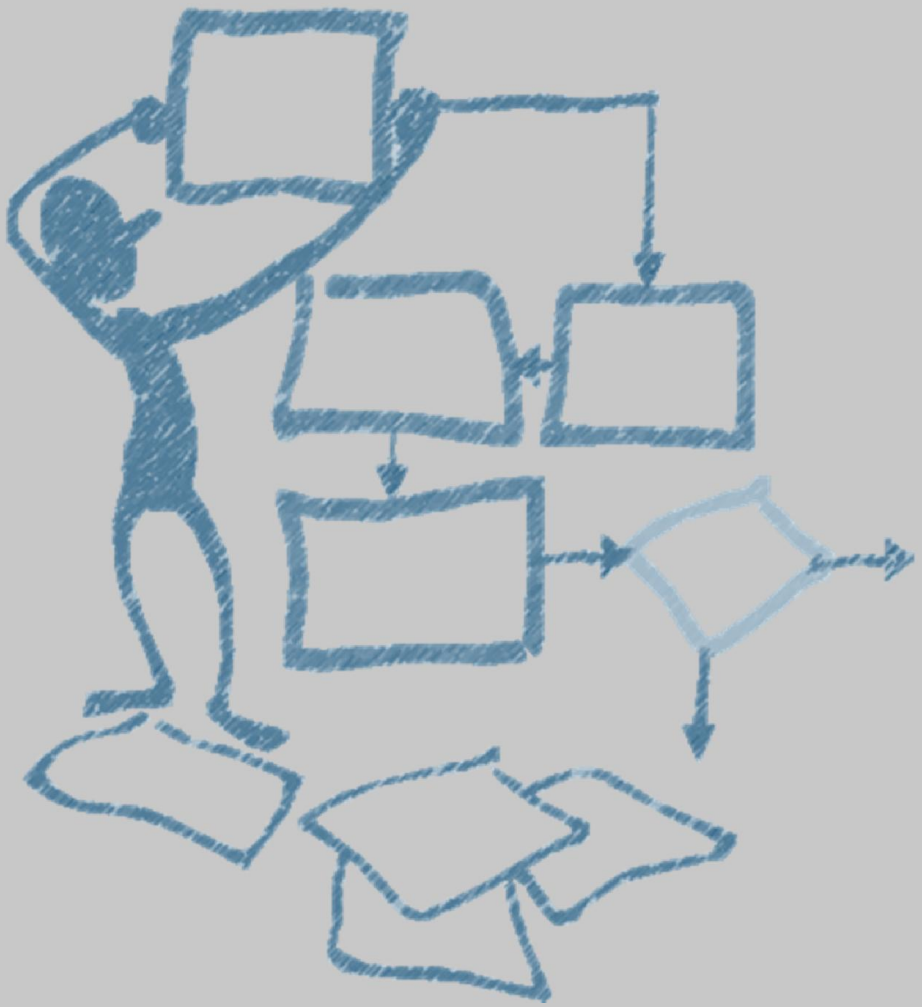
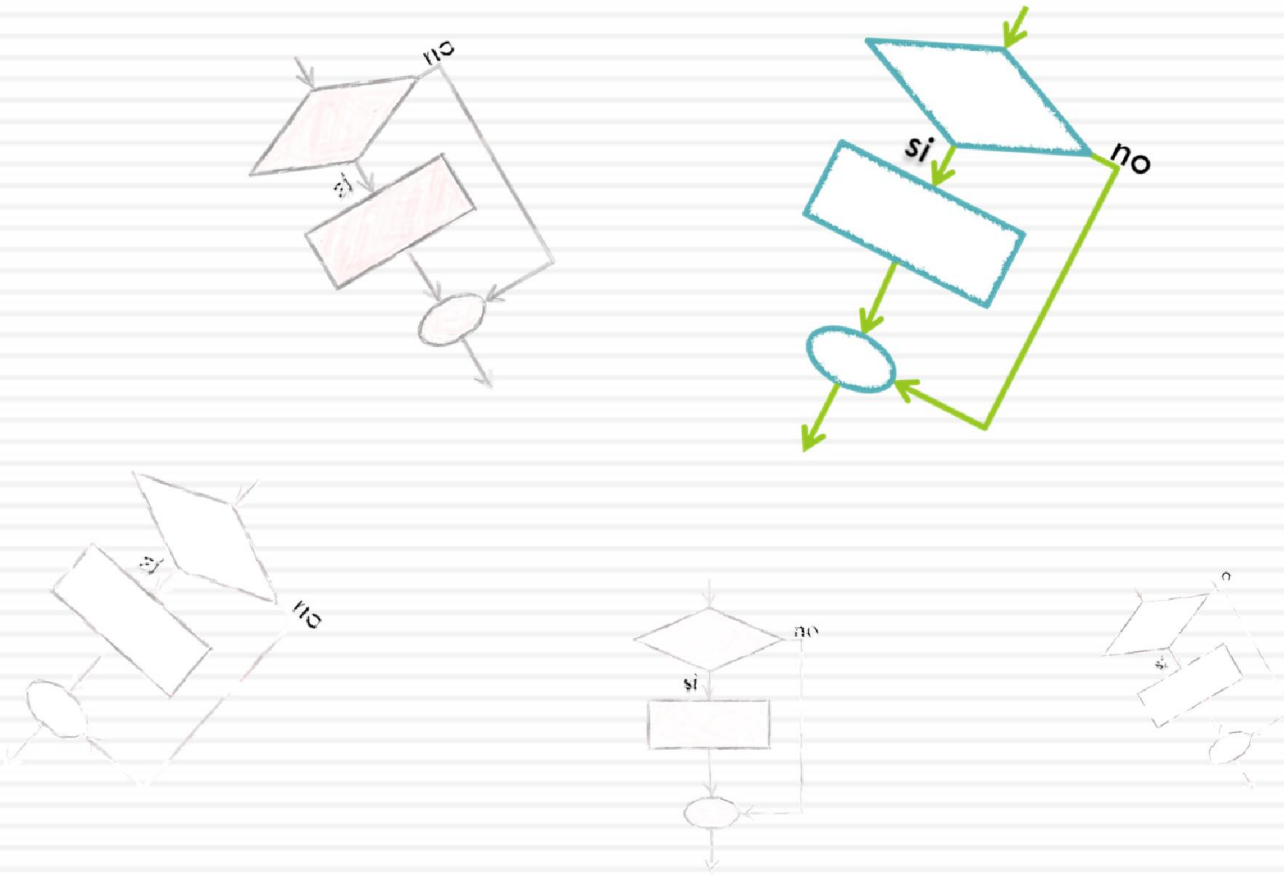


CICLO FOR



2

Estructura repetitiva: for

For

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

- Sintaxis:

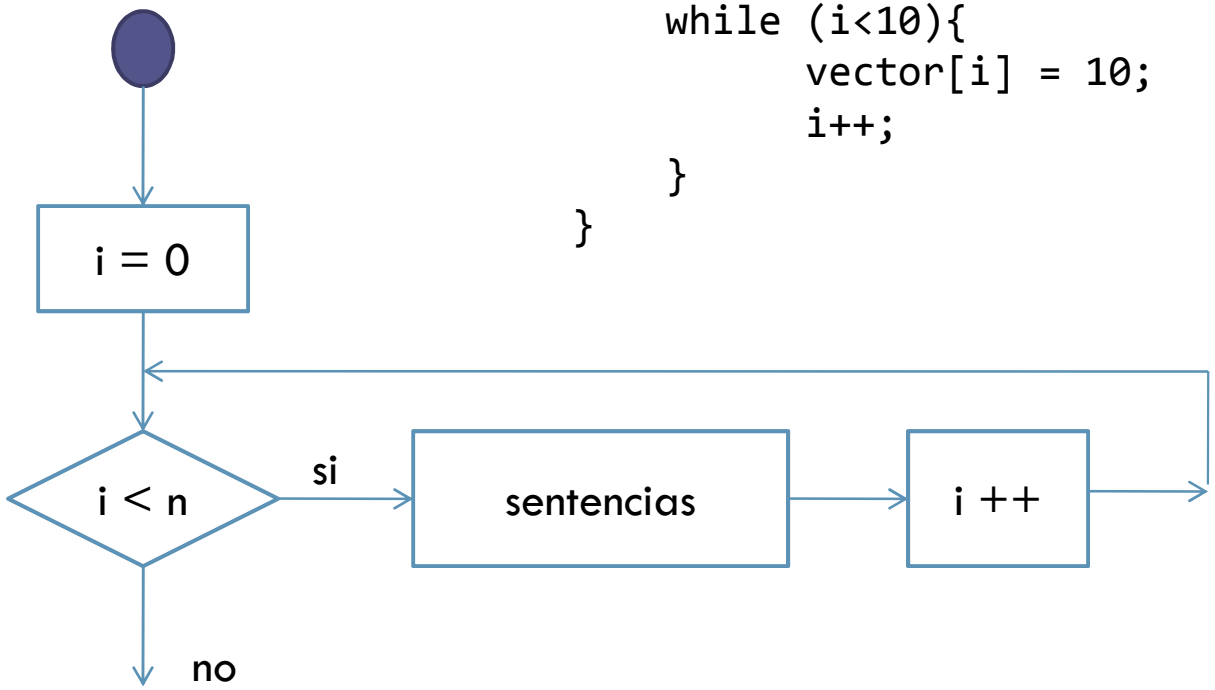
```
for (inicialización ; condición ; incremento){

        // Bloque de código que se repite.
}
```

Ciclo while

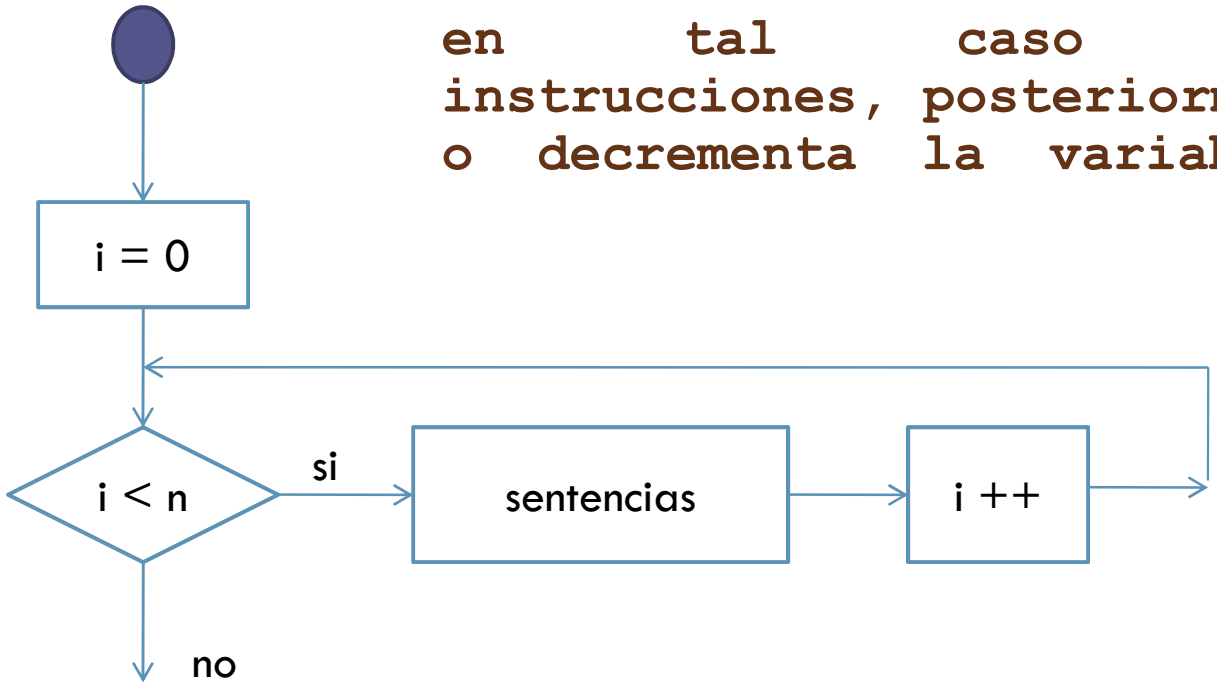

```
int main (){
    int vector [10];

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



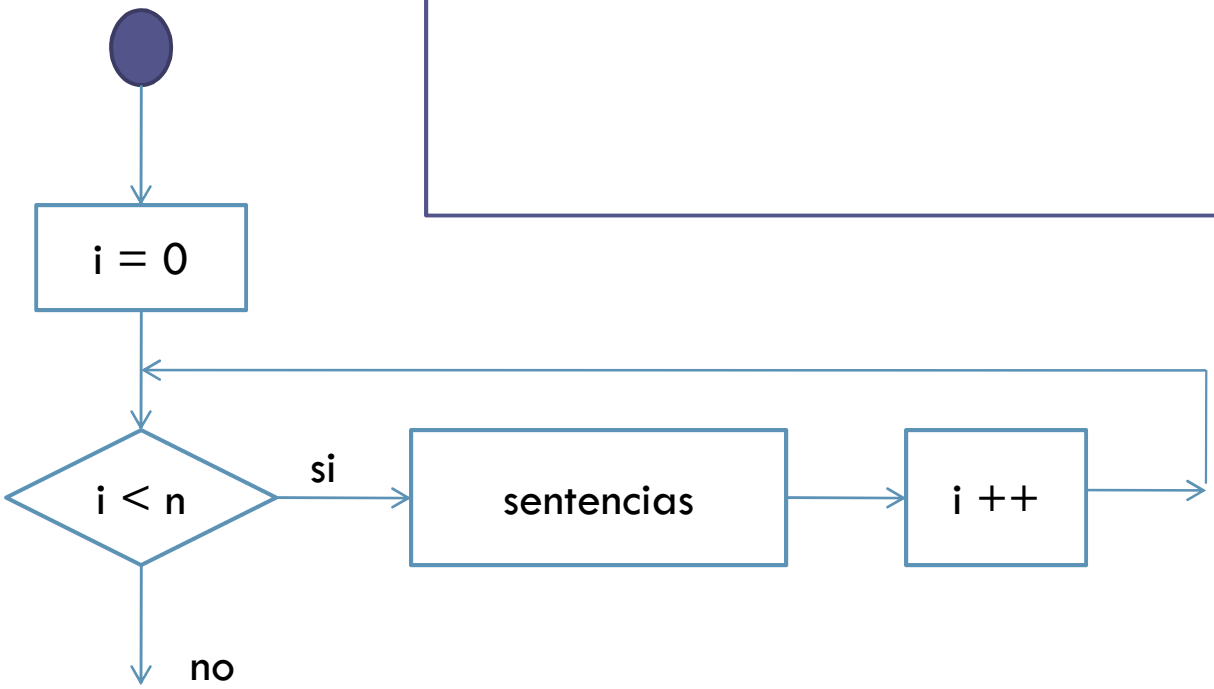
For

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

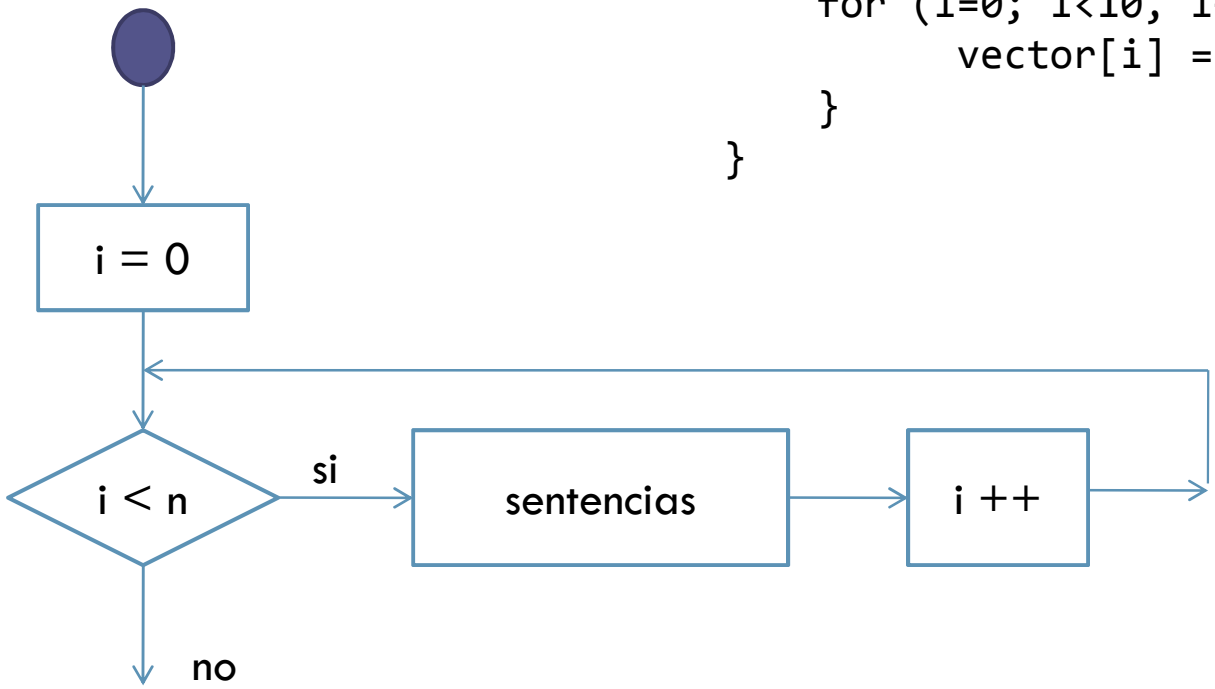

```
for (int i = 0; i < 10 ; i++ ){
        System.out.println( "valor de i = " + i);
}
```



Ciclo for


```
int main (){
    int vector [10];

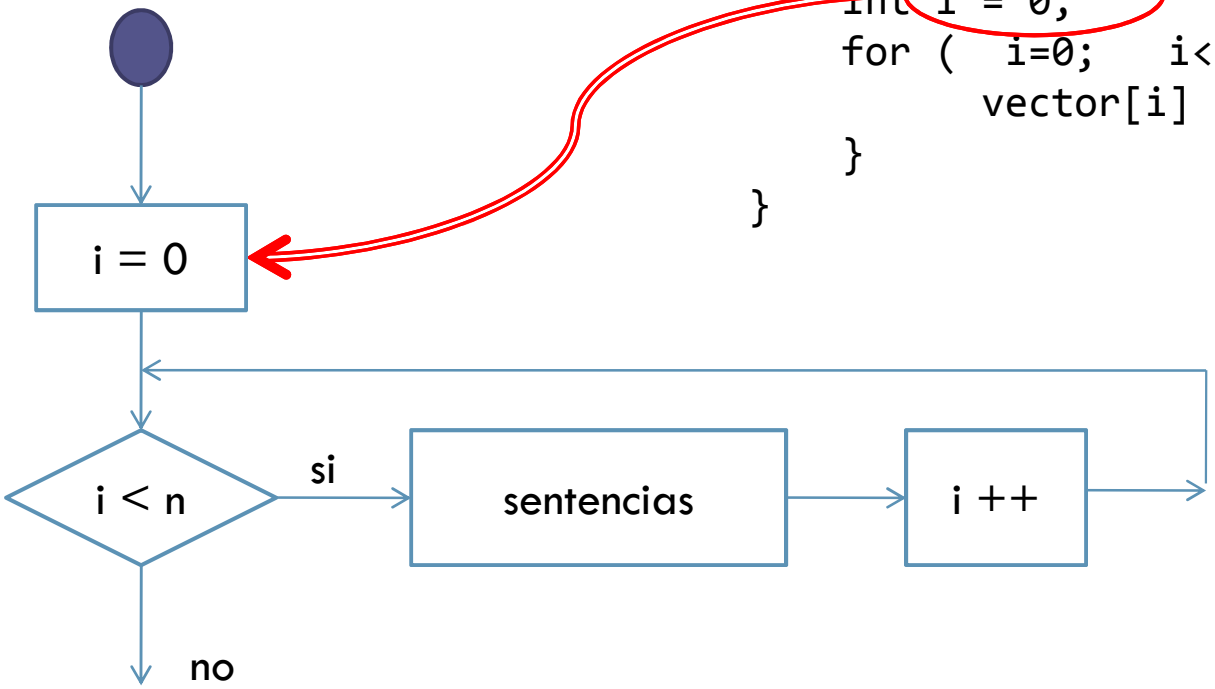
    int i = 0;
    for (i=0; i<10, i++){
          vector[i] = 10;
    }
}
```



Ciclo for


```
int main (){
    int vector [10];

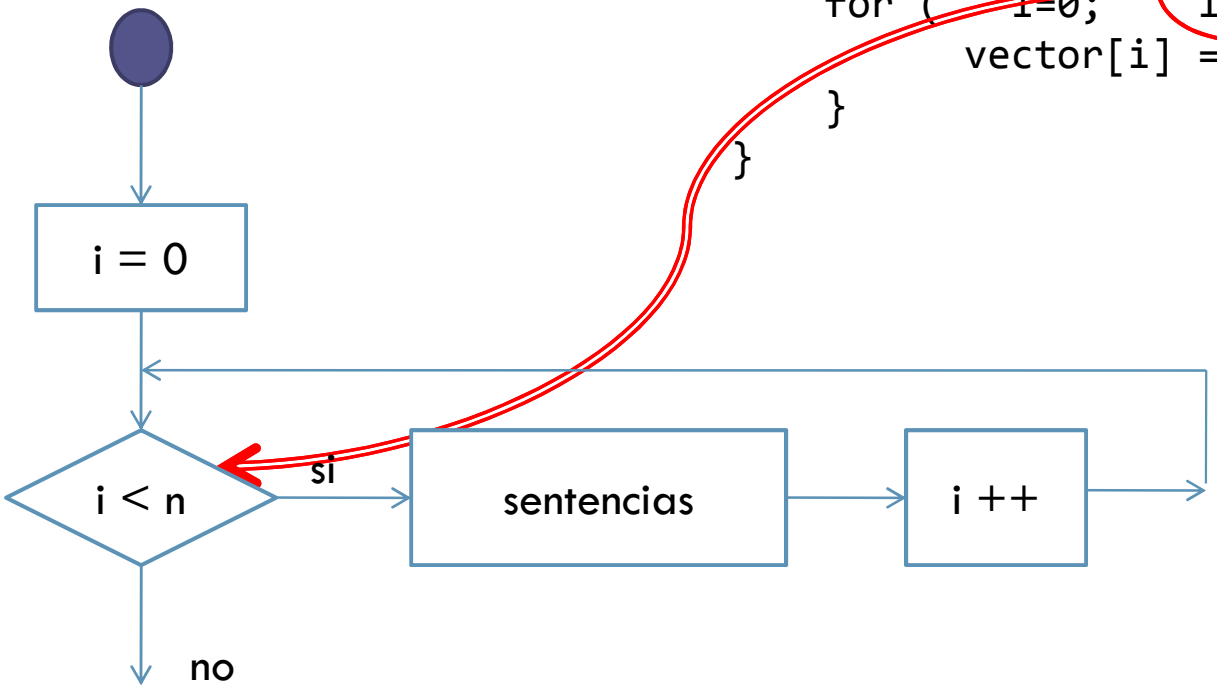
    int i = 0;
    for (  i=0;   i<10, i++){
          vector[i] = 10;
    }
}
```



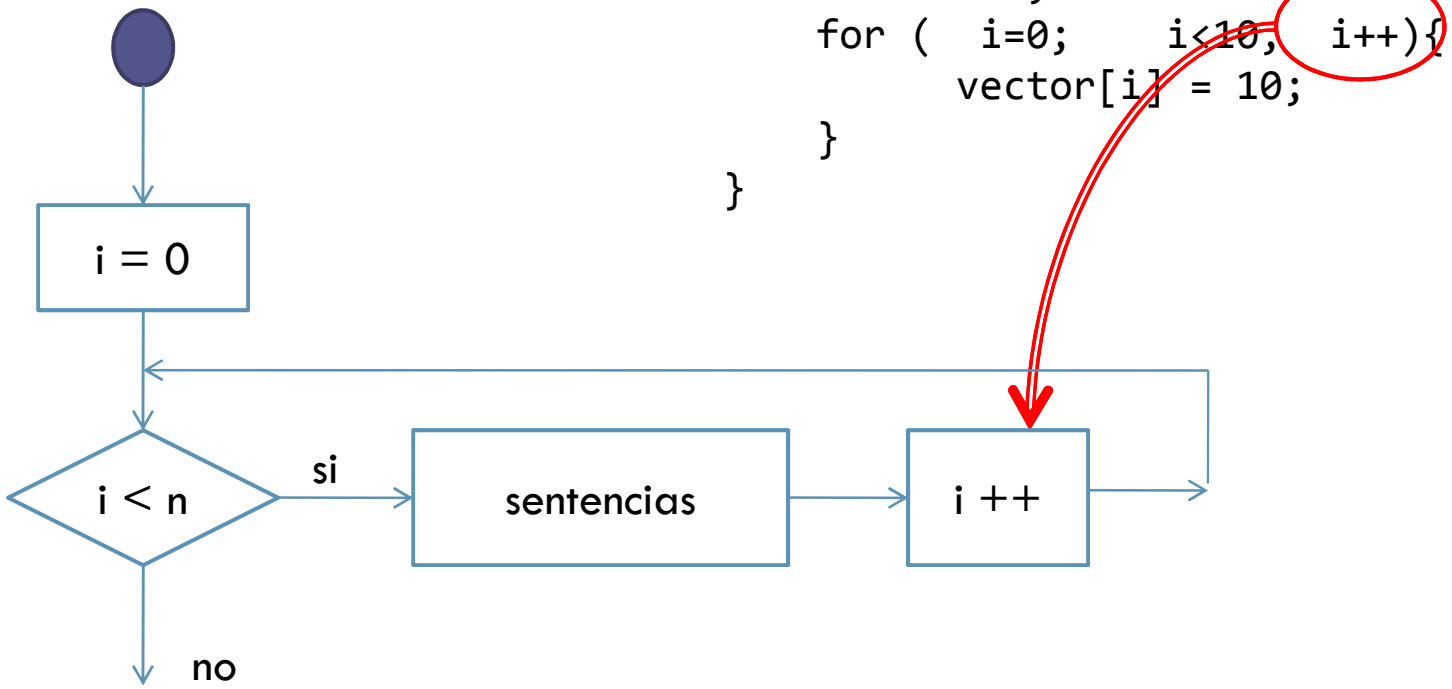
Ciclo for


```
int main (){
    int vector [10];

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



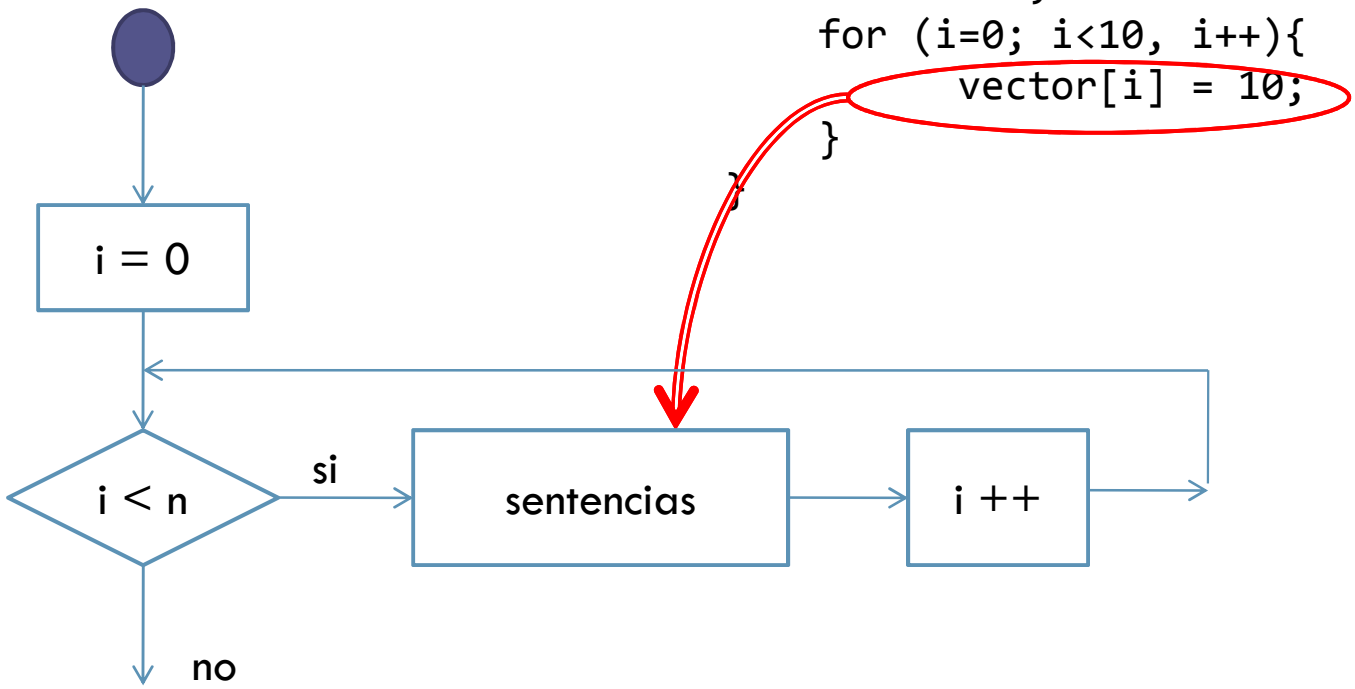
Ciclo for




```
int main (){
    int vector [10];

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

Ciclo for




```
int main (){
    int vector [10];

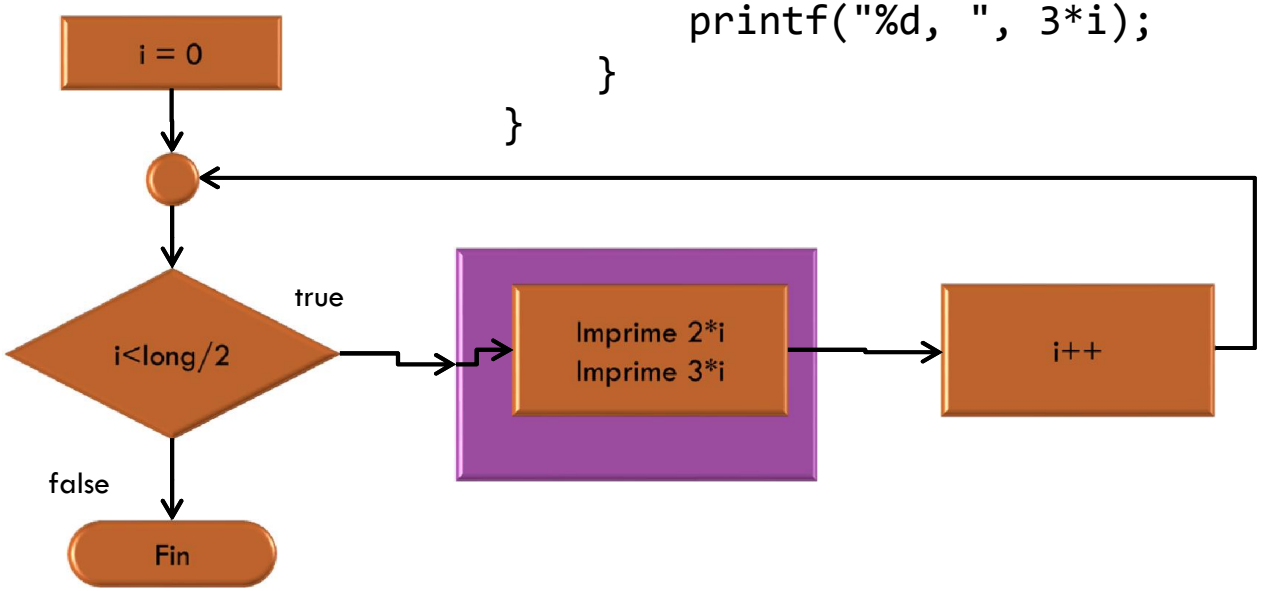
    int i = 0;
    for (i=0; i<10, i++){
        vector[i] = 10;
    }
}
```

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


```
int main (){

    int longitudSerie = 50;
    int i;

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



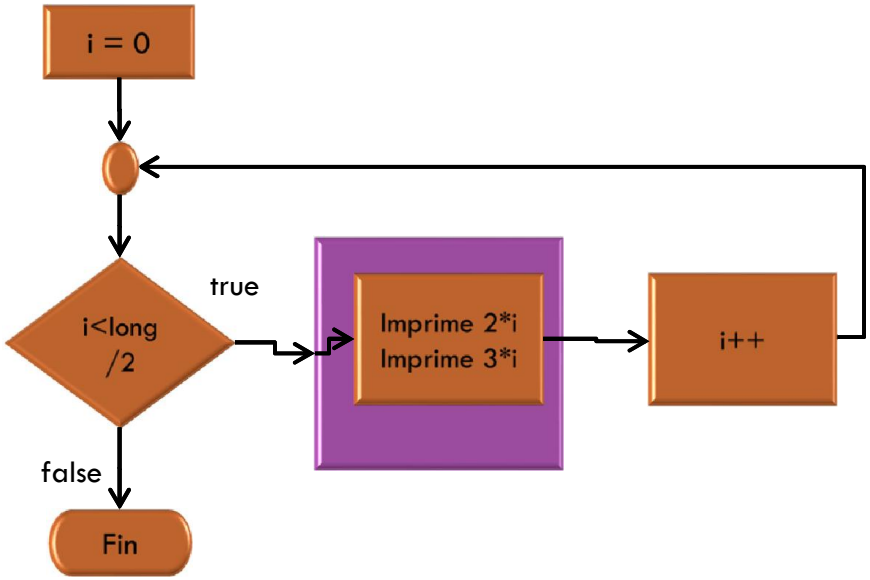
Ejemplo:
Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,


```
int main (){

    int longitudSerie = 50;
    int i;

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

longitudSerie	50



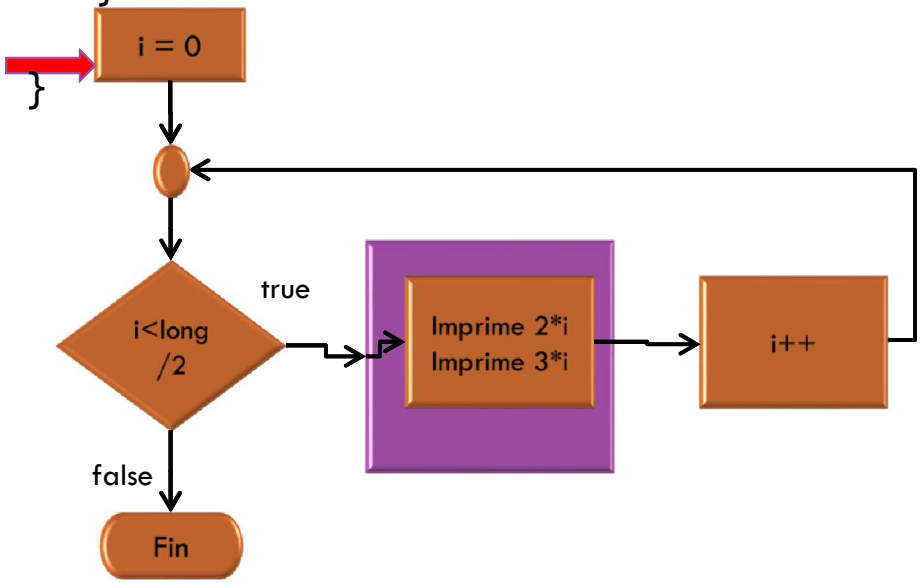
Ejemplo:
Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,


```
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



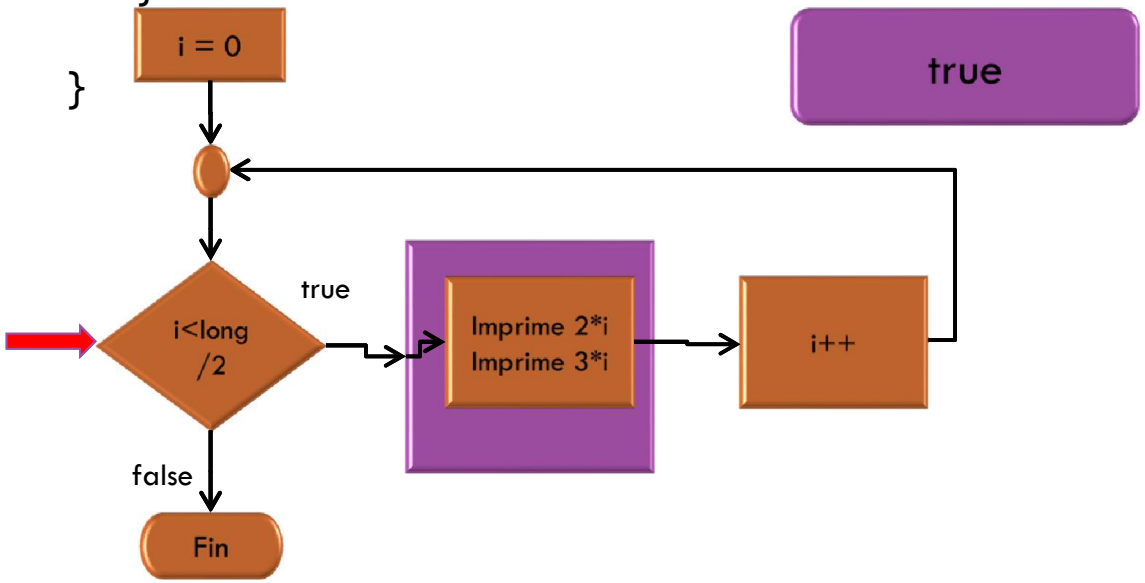
Ejemplo:
Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,


```
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



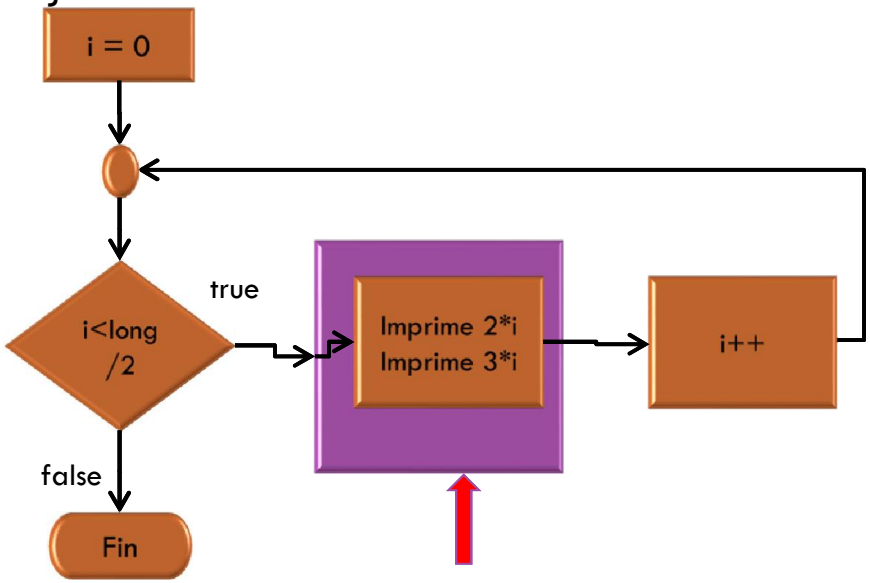
Ejemplo:
Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,


```
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,

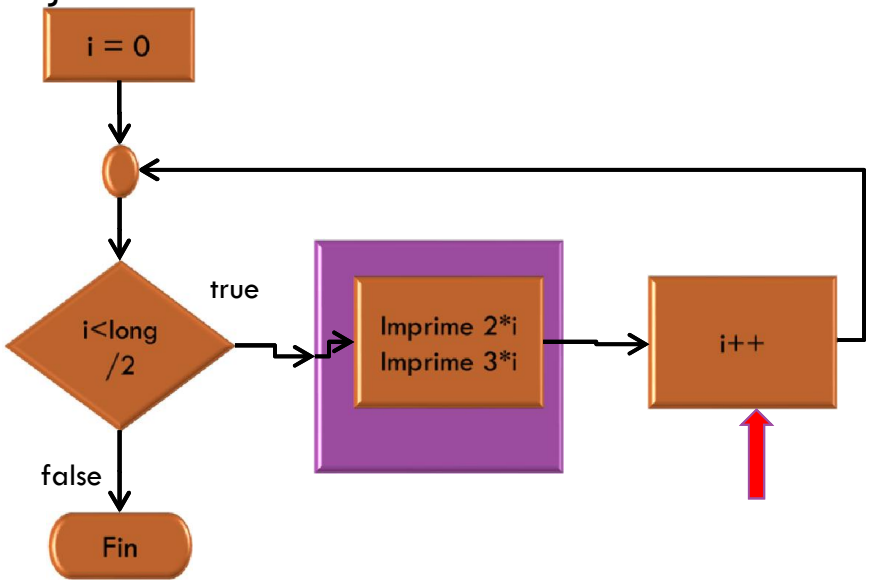

```
int main (){

    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,

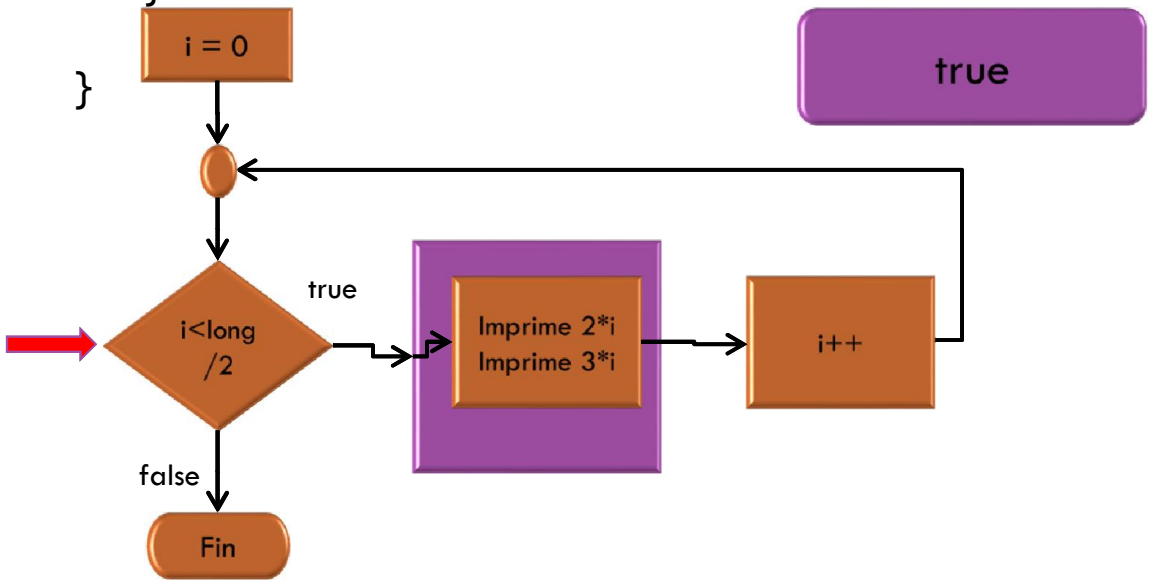
Ejemplo:
Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,


```
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,

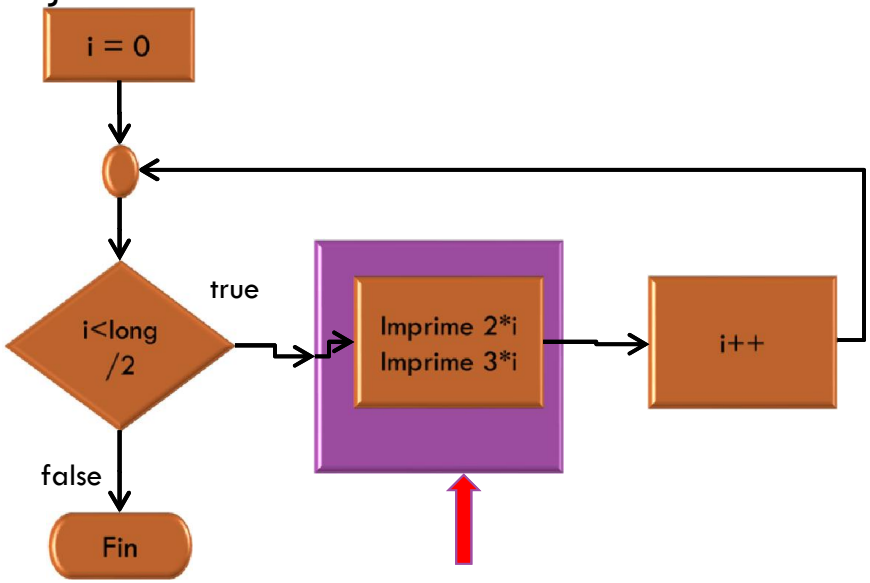
Ejemplo:
Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,


```
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,

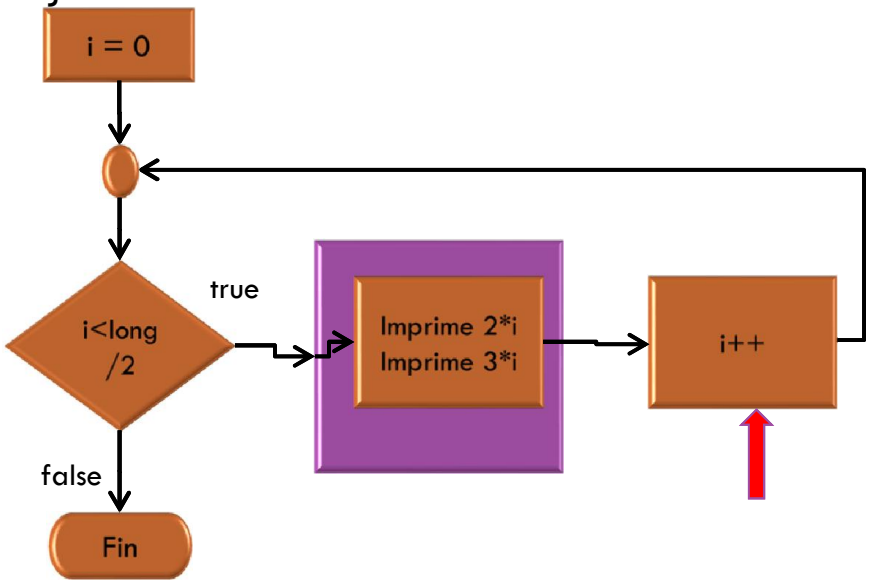
Ejemplo:
Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,


```
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,

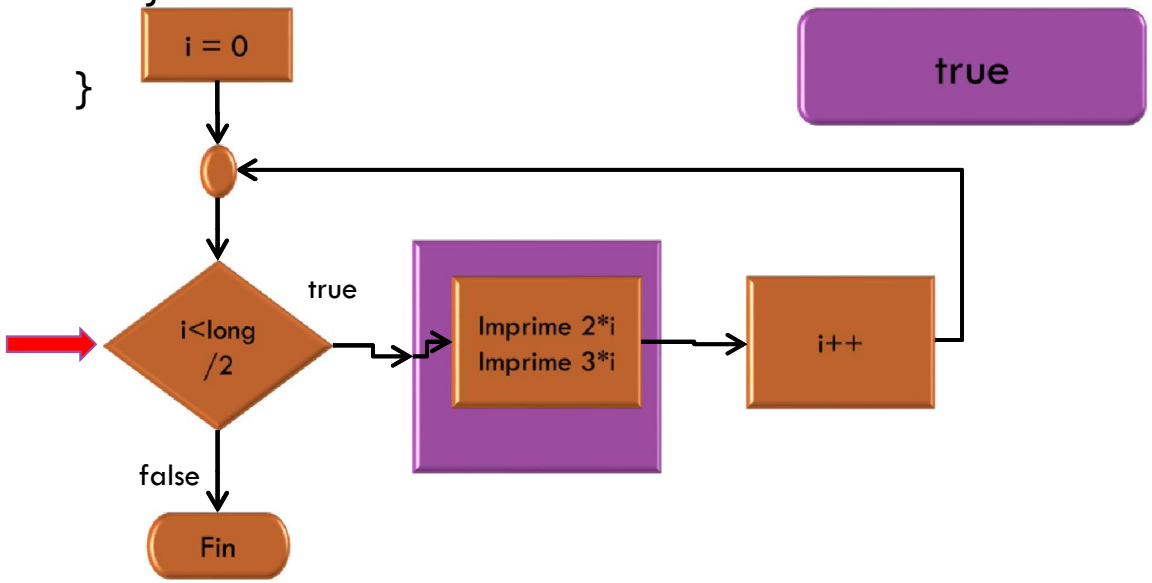
Ejemplo:
Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,


```
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:

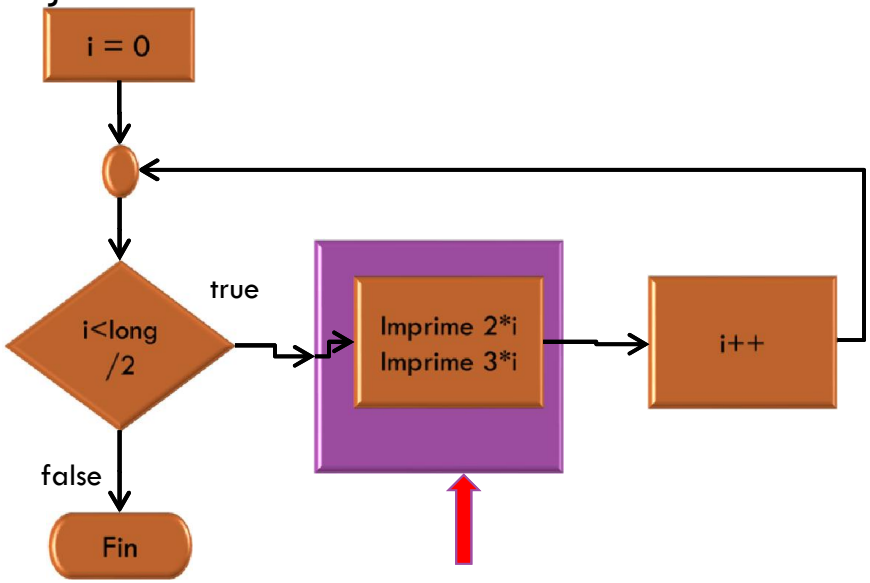
Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,


```
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

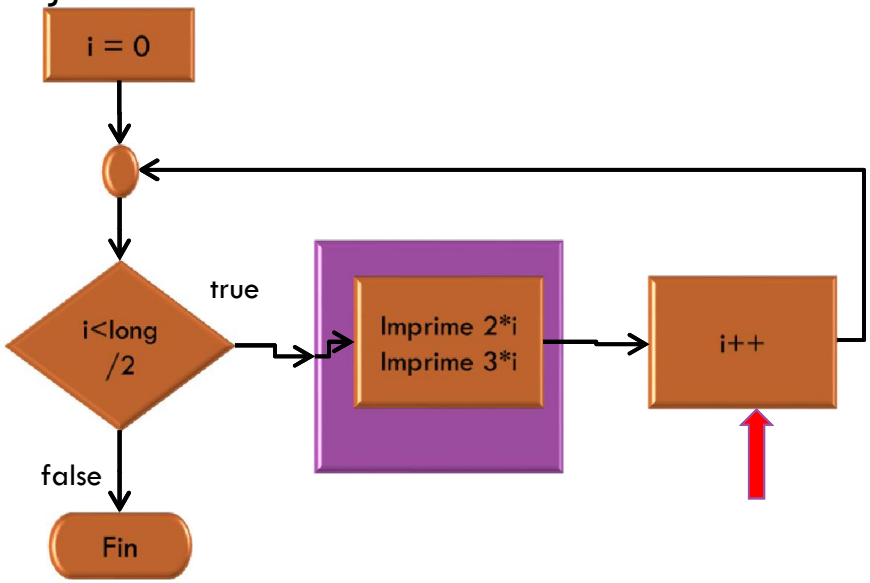
Ejemplo:
Mostrar la serie: 2, 3, 4, 6, 6, 9, 8, 12, 10,


```
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,

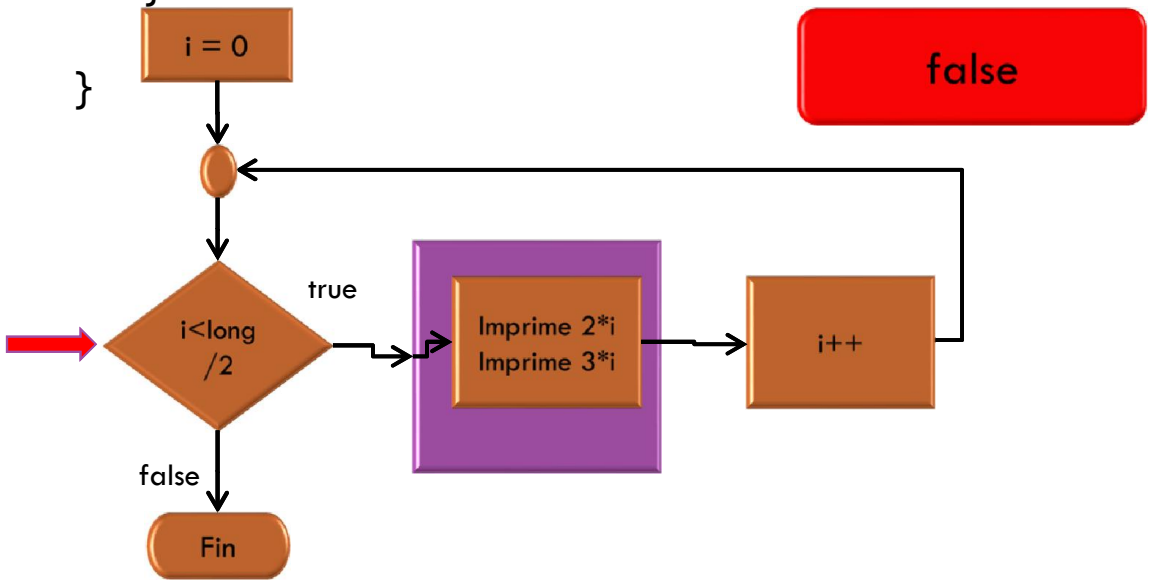
Ejemplo:

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


```
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

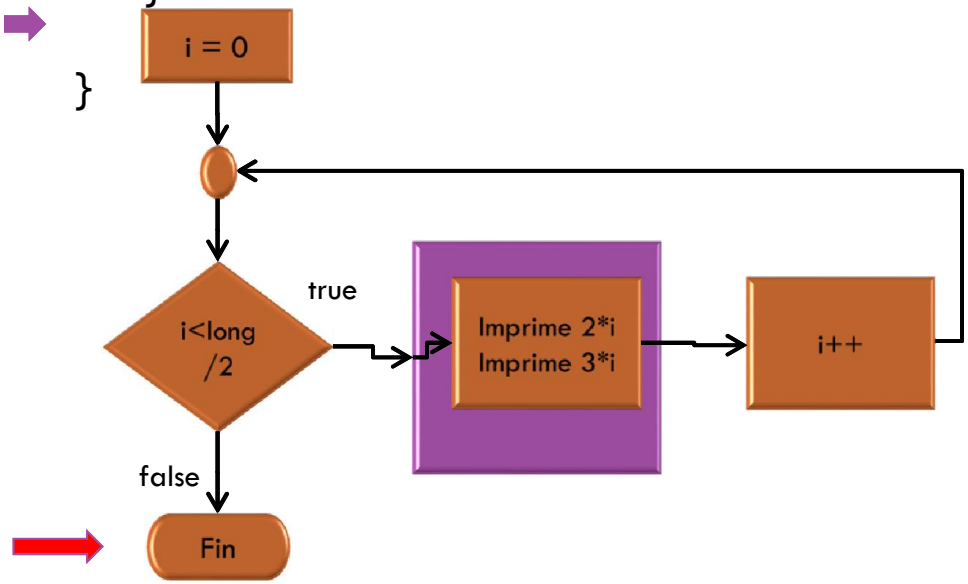
2, 3, 4, 6, 6, 9, 8, 12, 10, 15,
12, 18, 14, 21, 16, 24, 18, 27,
20, 30, 22, 33, 24, 36, 26, 39,
28, 42, 30, 45, 32, 48, 34, 51,
36, 54, 38, 57, 40, 60, 42, 63,
44, 66, 46, 69, 48, 72, 50, 75,
…

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


```
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...
```

Ejercicios

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

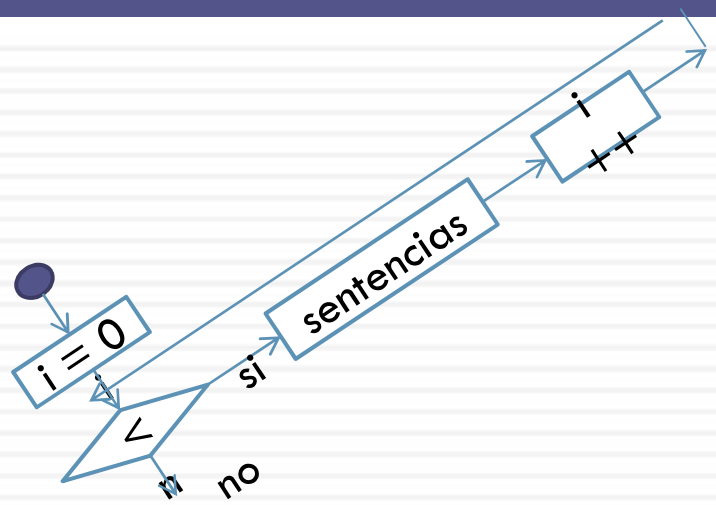
   Ej.

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

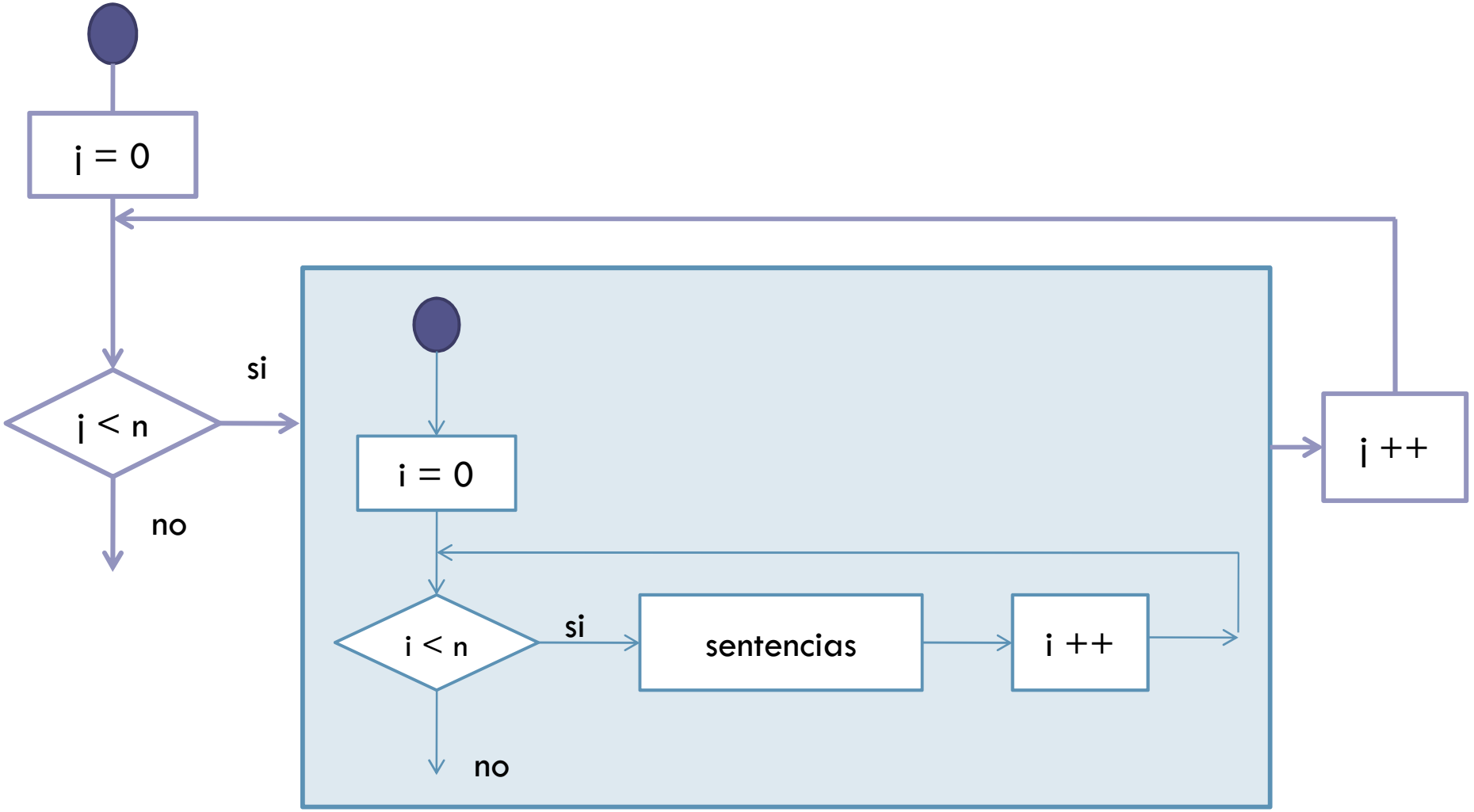
2. Escriba un programa en C que utilice un ciclo para producir la siguiente tabla de valores

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

FOR ANIDADO



For anidado



Ejemplo


```
#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


```
#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	
j	

Ejemplo


```
#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


```
#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


```
#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


```
#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


```
#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


```
#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


```
#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 _

Ejemplo


```
#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


```
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int main (){
    int i;
    int j;

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

i	0
j	1

true true

para i: 0 j0, _

Ejemplo


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j	1

true true

para i: 0 j0, _

Ejemplo


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j	1

true true

para i: 0 j0, j1, _

Ejemplo


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        }
        printf("\n\n");
    }
    system ("Pause");
    return 0;
}
```

i	0
j	2

true true

para i: 0 j0, j1, _

Ejemplo


```
#include <stdio.h>

int main (){
    int i;
    int j;

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

i	0
j	2

true true

para i: 0 j0, j1, _

Ejemplo


```
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```

i	0
j	2

true true

para i: 0 j0, j1, j2, _

Ejemplo


```
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    }
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}
```

i	0
j	3

true true

para i: 0 j0, j1, j2, _

Ejemplo


```
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            printf("j%d,", j);
        }
        printf("\n\n");
    }
    system ("Pause");
    return 0;
}
```

i	0
j	3

true

false

para i: 0 j0, j1, j2, _

Ejemplo


```
#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,

–

Ejemplo


```
#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


```
#include <stdio.h>

int main (){
    int i;
    int j;

    for (i=0; i<5; i++){
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        }
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    }
    system ("Pause");
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}
```

i	1
j	3

true

para i: 0 j0, j1, j2,

–

Ejemplo


```
#include <stdio.h>

int main (){
    int i;
    int j;

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}
```

i	1
j	3

true

para i: 0 j0, j1, j2,

para i:1 _

Ejemplo


```
#include <stdio.h>

int main (){
    int i;
    int j;

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


```c
#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

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

```
*
**
***
****
```

```
****
***
**
*
```

...

N

Ejercicio

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