

PROGRAMACIÓN JAVA. Tema 3 – Soluciones Trazas bucles anidados

```

/*****
* traza_1
*****/

```

```

    int n = 3, a = 0;
    do{
        do {
            a++;
            System.out.println(a);
        } while (a <= n);
        a = 0;
        n--;
        System.out.println();
    }while(n>0);

```

n	a	salida
3	0	1
2	1	2
1	2	3
0	3	4
	4	
	0	1
	1	2
	2	3
	3	
	0	1
	1	2
	2	
	0	

```

/*****
* traza_2
*****/

```

```

    int a=3, i, j;
    char car = '*';
    for(i=1;i<=a;i++){
        for(j=1;j<=i;j++){
            System.out.print(car);
        }
        System.out.println();
    }

```

a	i	j	car	salida
3	1	1	*	*
	2	2		**
	3	1		***
	4	2		
		3		
		1		
		2		
		3		
		4		

```

/*****
 * traza_3
 *****/
int n = 5, i, j, cont = 1;
for (i = 1; i < n; i++) {
    for (j = 1; j < n; j++) {
        System.out.print(cont % 10 + " ");
        cont++;
    }
    System.out.println();
}

```

n	i	j	cont	salida
3	1	1	1	1 2 3 4
		2	2	5 6 7 8
		3	3	9 0 1 2
		4	4	3 4 5 6
	5	5	5	
		1	6	
		2	7	
		3	8	
		4	9	
		5	10	
		1	11	
		2	12	
		3	13	
		4	14	
		5	15	
		1	16	
		2	17	
		3		
		4		
		5		

```

/*****
*  traza_4
*****/
    int n=5, a=0;
    while(n > 0){
        do{
            a++;
            System.out.println(a);
        }while(a != n);
        a = 0;
        n--;
        System.out.println();
    }

```

a	n	Salida
0	5	
1		1
2		2
3		3
4		4
5		5
0	4	
1		1
2		2
3		3
4		4
0	3	
1		1
2		2
3		3
0	2	
1		1
2		2
0	1	
1		1
0	0	

```

/*****
*  traza_5
*****/
    int b = 3, a = 2, i, j;
    char car = '$';
    for(i=1;i<=a;i++){
        for(j=1;j<=b;j++){
            System.out.print(car);
        }
        System.out.println();
    }

```

a	b	i	j	car	Salida
2	3	1	1	\$	\$\$\$
		2	2		\$\$\$
		3	3		
			4		
			1		
			2		
			3		
			4		

```

/*****
* traza_6
*****/
int n = 5, i, j, cont = 1;
for(i=1;i<=n;i++){
    for(j=1;j<=i;j++){
        System.out.print(cont%10+ " ");
        cont++;
    }
    System.out.println();
}

```

n	i	j	cont	Salida
5	1	1	1	1
	2	2	2	2 3
	3	1	3	4 5 6
	4	2	4	7 8 9 0
	5	3	5	1 2 3 4 5
	6	1	6	
		2	7	
		3	8	
		4	9	
		1	10	
		2	11	
		3	12	
		4	13	
		5	14	
		1	15	
		2	16	
		3		
		4		
		5		
		6		

```

/*****
* traza_7
*****/
int n = 4, i, j;
for(i=1;i<=n;i++){
    for(j=1;j<=i;j++){
        System.out.print(i + " ");
    }
}

```

n	i	j	Salida
4	1	1	1 2 2 3 3 3 4 4 4 4
	2	2	
	3	1	
	4	2	
	5	3	
		1	
		2	
		3	
		4	
		1	
		2	
		3	
		4	

5

```

/*****
 * traza_8
 *****/

int i, j, k, filas = 5, cont=1;
for(i=1;i<=filas;i++){
    for(j=1;j<=filas-i;j++){
        System.out.print(" ");
    }
    for(k=1;k<=cont; k++){
        System.out.print("*");
    }
    cont+=2;
    System.out.println();
}

```

filas	i	j	k	cont	Salida	
5	1	1	1	1*	Cada punto representa un espacio en blanco
	2	2	2	3	...***	
	3	3	1	5	..*****	
	4	4	2	7	.*****	
	5	5	3	9	*****	
	6	1	4	11		
		2	1			
		3	2			
		4	3			
		1	4			
		2	5			
		3	6			
		1	1			
		2	2			
		1	3			
			4			
			5			
			6			
			7			
			8			
			1			
			2			
			3			
			4			
			5			
			6			
			7			
			8			
			9			
			10			

```

/*****
* traza_9
*****/
int i = 0, j = 0, k = 0;
for (i = 0; i < 3; i++) {
    k = 2;
    j = 1;
    while (j < 3 || k > 0 && i < 2) {
        System.out.printf("[%S]", "hola");
        k--;
        j += 2;
    }
}
System.out.printf("%ni = |%+05d|%nj = |%+05d|%nk = |%+05d|%n", i, j, k);

```

i	j	k	Salida
0	0	0	[HOLA] [HOLA] [HOLA] [HOLA] [HOLA]
1	1	2	i = +0003
2	3	1	j = +0003
3	5	0	k = +0001
	1	2	
	3	1	
	5	0	
	1	2	
	3	1	

```

/*****
* traza_10
*****/
int n = 2, m = 0;
do {
    do {
        System.out.print(m++ + " ");
    } while (m <= n);
    m = 0;
    System.out.println(n--);
}while (n > 0);

```

n	m	Salida
2	0	0 1 2 2
1	1	0 1 1
0	2	
	3	
	0	
	1	
	2	
	0	

```

/*****
* traza_11
*****/
int j, k = 0;
for (int i = 1; i <= 3; i++) {
    j = i;
    while (j < 4)
        System.out.println(j++);
        k -= j;
        System.out.println(k);
}

```

i	j	k	Salida
1	1	0	1
2	2	-4	2
3	3	-8	3
4	4	-12	-4
	2		2
	3		3
	4		-8
	3		3
	4		-12

```

/*****
* traza_12
*****/
int A = 0, B;
for (; A <= 1; A++) {
    for (B = 1; B < 2; B++) {
        System.out.println(A*B);
    }
}

```

A	B	Salida
0	1	0
1	2	1
2	1	
	2	

```

/*****
* traza_13
*****/
int x = 0, y;
while(x <= 8) {
    for (y = 1; y < 3; y++) {
        switch (x + y) {
            case 1: x++;
                    break;
            case 9: x--;
                    break;
            case 4: y--;
            case 8: x++;
            default: x = x + y;
        }
        System.out.println(x++ + " " + y);
    }
}

```

x	y	(x + y)	Salida
0	1	1	1 1
1	2	4	4 1
2	1	7	7 2
3	2	9	7 1
4	3	10	10 2
5	1		
7	2		
8	3		
7			
8			
10			
11			

```

/*****
* traza_14
*****/
int x = 1, y = 2, z;
do{
    z = y++;
    x+=z;
    switch(x){
        case 2: System.out.println(x);
        case 3: System.out.println(y);
        default: System.out.println(z);
    }
}while(x==y);

```

x	y	z	Salida
1	2	2	3
3	3	3	2
6	4		3


```
/* ****  
* traza_15  
* **** */  
int i, j, k;  
for (i = 1, k = 0; i <= 3; i += 2, k += 2) {  
    for (j = 1; j <= k; j++) {  
        System.out.println(i * j);  
    }  
    System.out.println(i * k);  
}  
System.out.println(i * k);
```

i	j	k	Salida
1	1	0	1
3	2	2	3
5	3	4	6
			9
			20