

## C-44 $\Rightarrow$ Nested while loop in C

### Nested while:

\* while within while loop condition.

Syntax:

```
while (condition)
```

```
{
```

```
    while (condition)
```

```
    {
```

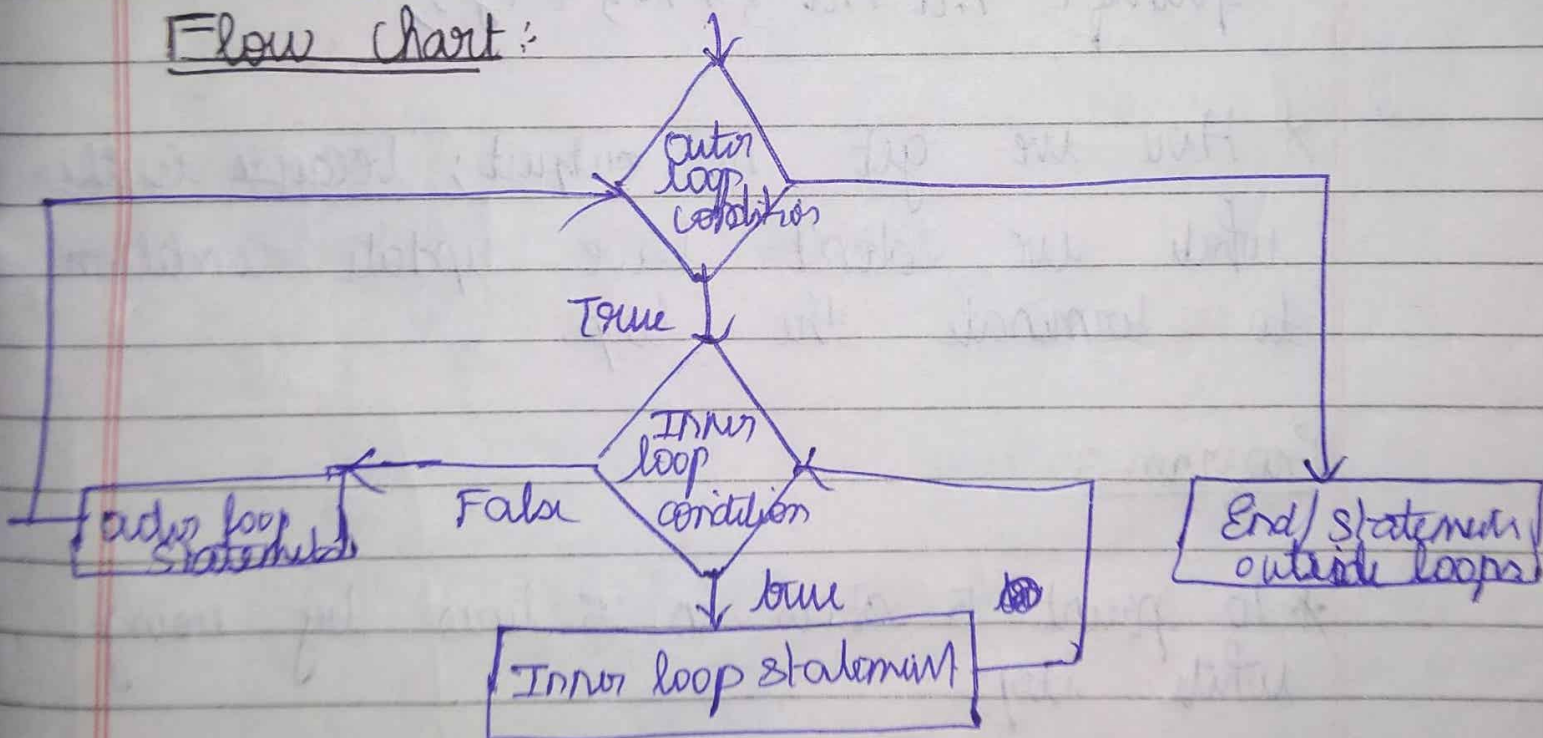
```
        Inner loop statement block;
```

```
    }
```

```
    Outer loop statement block;
```

```
}
```

Flow chart:



### Program 1:

```
int i=0; j=1;  
while(i<3)
```

{

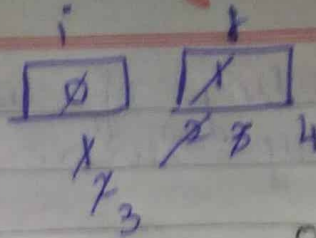
```
    while(j<=3)
```

{

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

```
    }  
    printf("%d", i++);
```

}



O/P

1	2	3	0	1	2
---	---	---	---	---	---

### Program 2:

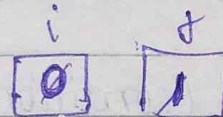
```
int i=0, j=1;
```

```
while(i<3)
```

```
{  
    while(j<=3)
```

```
    {  
        printf("%d %d", ++i, ++j);
```

```
    }
```



O/P

No output
-----------

\* How we get no output; because in this while we don't have update condition to terminate the loop.

### Program 3:

\* To print 5 stars in 5 lines by using while loop.

void main()

{

int i=1;

while(i++<=5)

{

int j=1;

while(j++<=5)

{

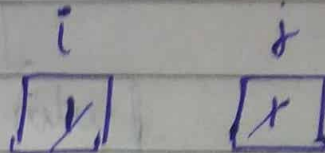
printf(" \* ");

printf("\n");

}

getch();

}



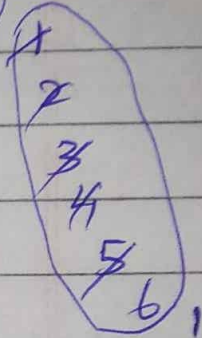
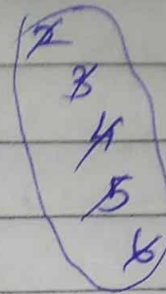
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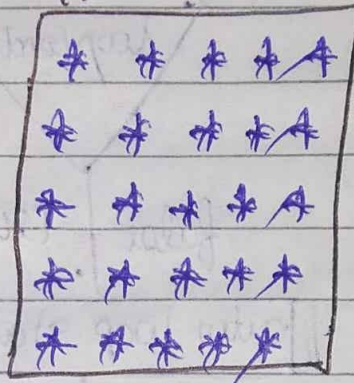
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5

6



pp.





CODE 1:

```

1  #include <stdio.h>
2  #include <stdlib.h>
3  /* 1 - nested while loop */
4  int main()
5  {
6      int i=0,j=1;
7      while(i<3)
8      {
9          while(j<=3)
10         {
11             printf("%d",j++);
12         }
13         printf("%d",i++);
14     }
15     getch();
16 }

```

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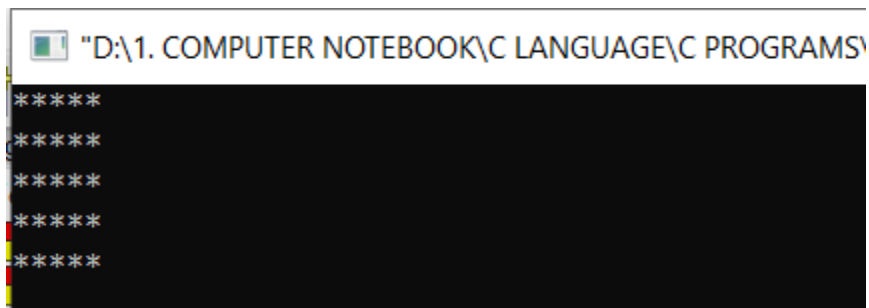
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## CODE 2:

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  /* 2 - nested while loop */
4  int main()
5  {
6      int i=0,j=1;
7      while(i<3)
8      {
9          while(j<=3)
10         {
11             //no inner loop statements;
12         }
13         //no outer loop statements;
14     }
15     printf("%d%d",++i,++j);
16     getch();
17 }
18 /* Here we get no output because in while loop we have no update to terminate
19    or to continue the loop.. so it will remain there and we get no output...*/
20
```

## CODE 3:

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  /* 3 - nested while loop */
4  // To print 5 stars in 5 lines //
5  int main()
6  {
7      int i=1;
8      while(i++<=5)
9      {
10         int j=1;
11         while(j++<=5)
12         {
13             printf("*");
14         }
15         printf("\n");
16     }
17     getch();
18 }
19
```



```
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```