

while Loop in C Language

Day-10

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Find Output

x	y
5	3

main()

{

int x=3, y=4;

7 -1

→ while (x < y)

{

printf("%d ", x+y);

y = y - x;

x = y - x;

}

getch();

}

Write a program to print first 10 natural numbers.

1 2 3 4 5 6 7 8 9 10

main()

{

```
int i = 1;  
while (i <= 10)  
{
```

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

```
    i++;
```

```
}
```

```
}
```

2

i <= 10	T
2 <= 10	T
3 <= 10	T
4 <= 10	T
5 <= 10	T
6 <= 10	T
7 <= 10	T
8 <= 10	T
9 <= 10	T
10 <= 10	T
11 <= 10	F

Find Output

main()

{
 i
 }

[10]

 int i = 10;

 while (i)

 {

 printf("%d", i);

 i - 1;

}

 getch();

}

(A) 10 9 8 7 6 5 4 3 2 1

(B) 9 8 7 6 5 4 3 2 1

(C) Infinite

(D) 10 9 8 7 6 5 4 3 2 1 0

Every Non-zero \rightarrow True

zero \rightarrow False

10 10 10 10 10 10 10 10

Write a program to print first 10 even natural numbers.

main()

{

 int i=1; $\leftarrow 2$
 i<=20

 while (i<=10)

{

 printf ("%d ", 2*i);

 i++; $\leftarrow i = i + 2$ $\uparrow i$

}

(a) 2 4 6 8

(b) 2 4 6 8 10

(c) 2 4 6 8 10 12 14 16 18 20

<u>i</u>	<u>2*i</u>
1	2
2	4
3	6
4	8
5	10
6	12
7	14
8	16
9	18
10	20

Find Output

```
main()
{
    int i = 1;
    while ( i<=10 )
    {
        printf( " %d", 11-i );
        i++;
    }
    getch();
}
```

3

i	$i \leq 10$	$11-i$
1	$1 \leq 10$ T	10
2	$2 \leq 10$ T	9
3	$3 \leq 10$ T	8
4	$4 \leq 10$ T	7
5	$5 \leq 10$ T	6
6	$6 \leq 10$ T	5
7	$7 \leq 10$ T	4
8	$8 \leq 10$ T	3
9	$9 \leq 10$ T	2
10	$10 \leq 10$ T	1
11	$11 \leq 10$ F	

10 9 8 7 6 5 4 3 2 1

Write a program to print first N odd natural numbers in reverse order.

main()

{

int n, i=1;

printf("Enter a number");

scanf("%d", &n);

while(i<=n)

{ printf("%d ", 2*n+1-2*i);

i++;

} getch();

}

$$N = 5$$

1 3 5 7 9
9 7 5 3 1

$\frac{i}{1} \frac{2N+1}{11-2i}$ ↘
 $\frac{2}{1} \frac{11-2}{9}$
 $\frac{3}{2} \frac{11-4}{7}$
 $\frac{4}{3} \frac{11-6}{5}$
 $\frac{5}{4} \frac{11-8}{3}$
 $\frac{6}{5} \frac{11-10}{1}$

9 7 5 3 1 ...

$$T_n = a + (n-1)d$$
$$9 + (n-1)(-2) \Rightarrow 9 + (-2n+2)$$
$$\Rightarrow 9 - 2n + 2$$
$$\Rightarrow 11 - 2n$$