

printf()

scanf()

assignment statements

if ()

if ()

else

Print numbers 1 to 10, one number per line

Sol'n 1

```
printf(1 "1\n");
```

```
printf("2\n");
```

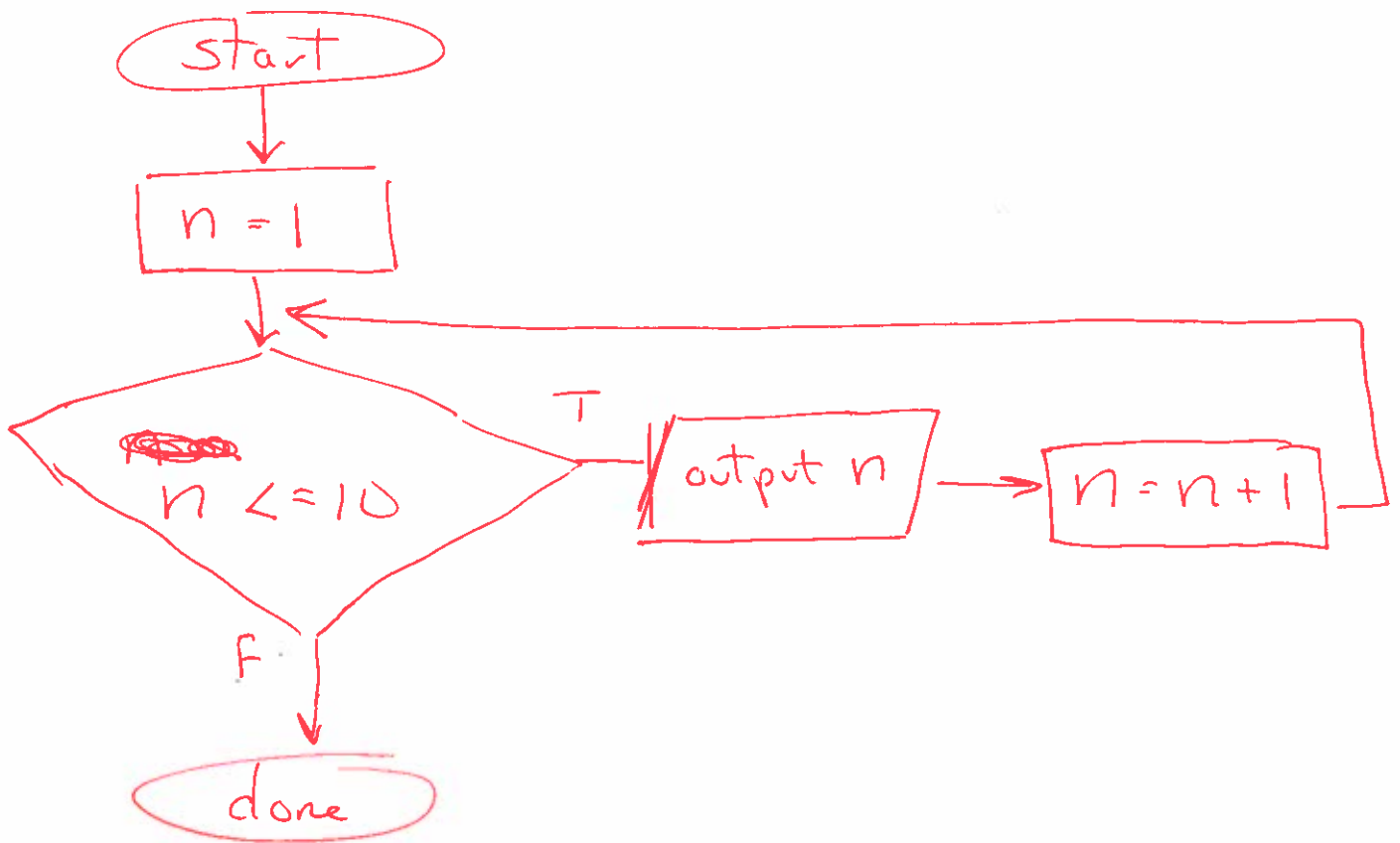
```
printf("3\n");
```

...

```
printf("10\n");
```

Sol'n 2

```
printf("1\n2\n3\n.... 10\n");
```



```

n = 1;
while (n <= 10)
{
  printf("%d\n", n);
  n = n + 1; // or n++;
}
  
```

output

1
2

write code to print
10, 20, 30, ... 100

```
n = 10;
while (n <= 100)
{
    printf ("%d\n", n);
    n += 10; // n = n + 10
}
```

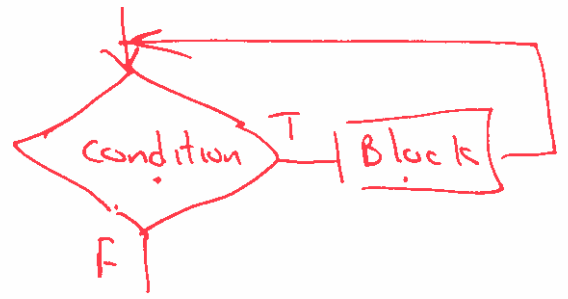
The diagram shows a while loop with the condition $n \leq 100$. The body of the loop contains two statements: `printf ("%d\n", n);` and `n += 10; // n = n + 10`. A red circle highlights the loop body. An arrow labeled 'T' points from the condition to the body, and another arrow labeled 'F' points from the body back to the condition, indicating the loop's execution flow.

Write code to count 20, 19, 18, ... 1, 0

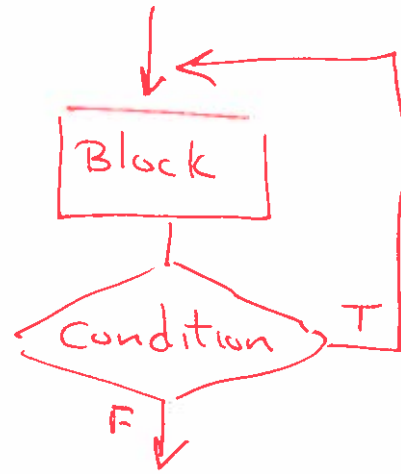
```
x = 20;
while (x >= 0)
{
    printf ("%d\n", x);
    x --;
}
```

The diagram shows a while loop with the condition $x \geq 0$. The body of the loop contains two statements: `printf ("%d\n", x);` and `x --;`. A red arrow points from the condition to the body and back to the condition, indicating the loop's execution flow.

```
while (condition)
{
    block
}
```



```
do
{
    block
}
while (condition)
```



```
a = 5;  
while (a < 10)  
{  
    printf ("%d ", a);  
    b = b + 1;  
}
```

what gets printed?

5 5 5 5 - - -

IMPORTANT: Loop condition must be altered within the loop.
(to avoid endless loop)

```

i = 0;
while (i < 3)
{
    printf("%d ", i);
    i++;
}

```

<u>i</u>	<u>Printed</u>
0	0 1 2
1	
2	
3	

```

i = 0;
do
{
    printf("%d ", i);
    i++;
} while (i < 3);

```

<u>i</u>	<u>Printed</u>
0	0 1 2
1	
2	
3	

```

i = 5;
while (i < 3)
{
    printf("%d ", i);
    i++;
}

```

<u>i</u>	<u>Printed</u>
5	nothing

while loop is executed 0 or more times

```

i = 5;
do
{
    printf("%d ", i);
    i++;
} while (i < 3);

```

<u>i</u>	<u>Printed</u>
5	5
6	

do-while is executed 1 or more times

used most by far