Session 5

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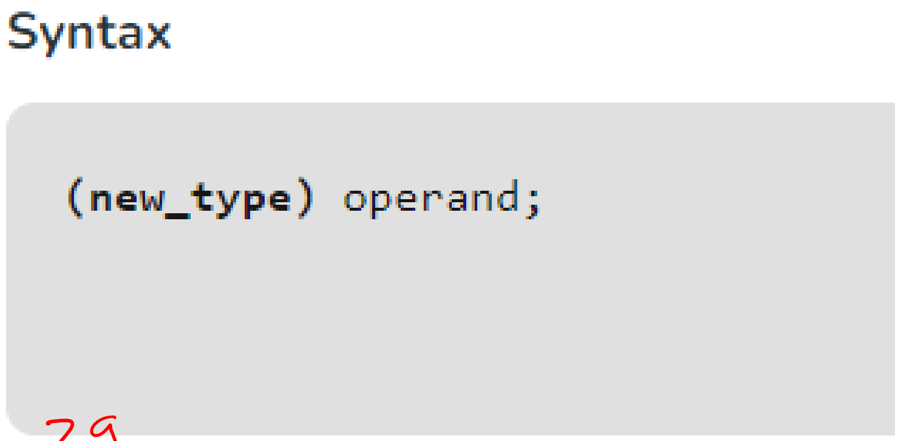
Cast Operator

float x ;

$x = 29/3 = \boxed{9}.6667$

$x = 29/3.0$ or $29.0/3 = 9.6667$



Syntax

```
(new_type) operand;
```

(float) 29/3

Hierarchy of Arithmetic Conversion

char

=

char x + char y

int

x

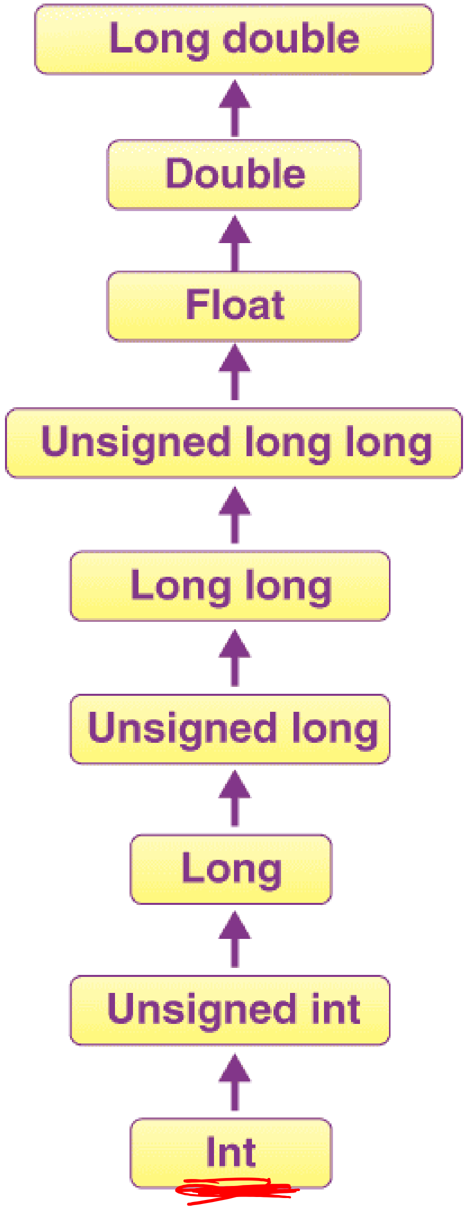
10

c

88

x * c

16 * 88



Long double

Double

Float

Unsigned long long

Long long

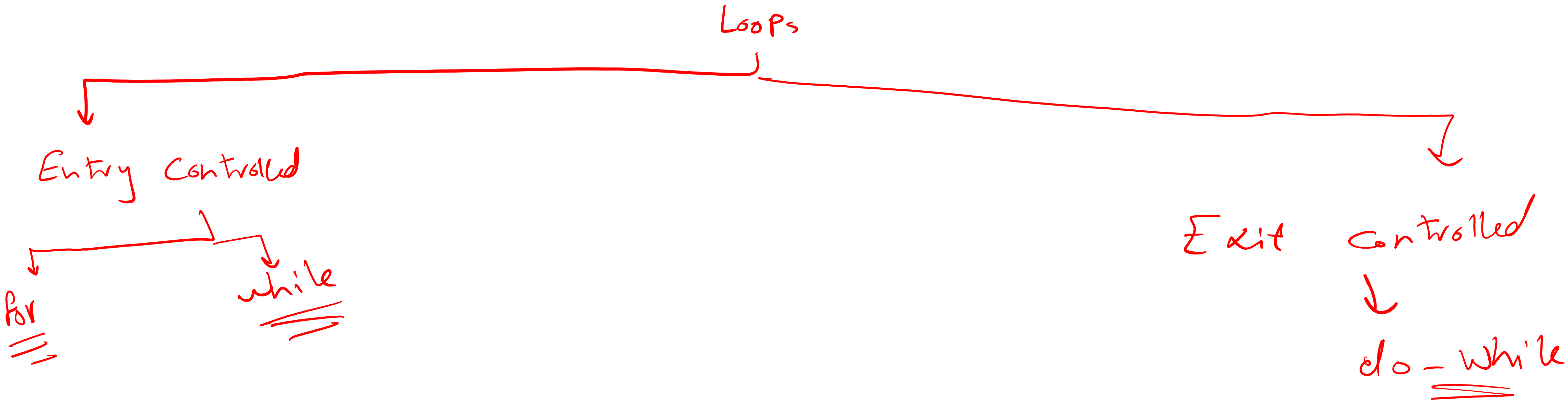
Unsigned long

Long

Unsigned int

Int

Loops in C

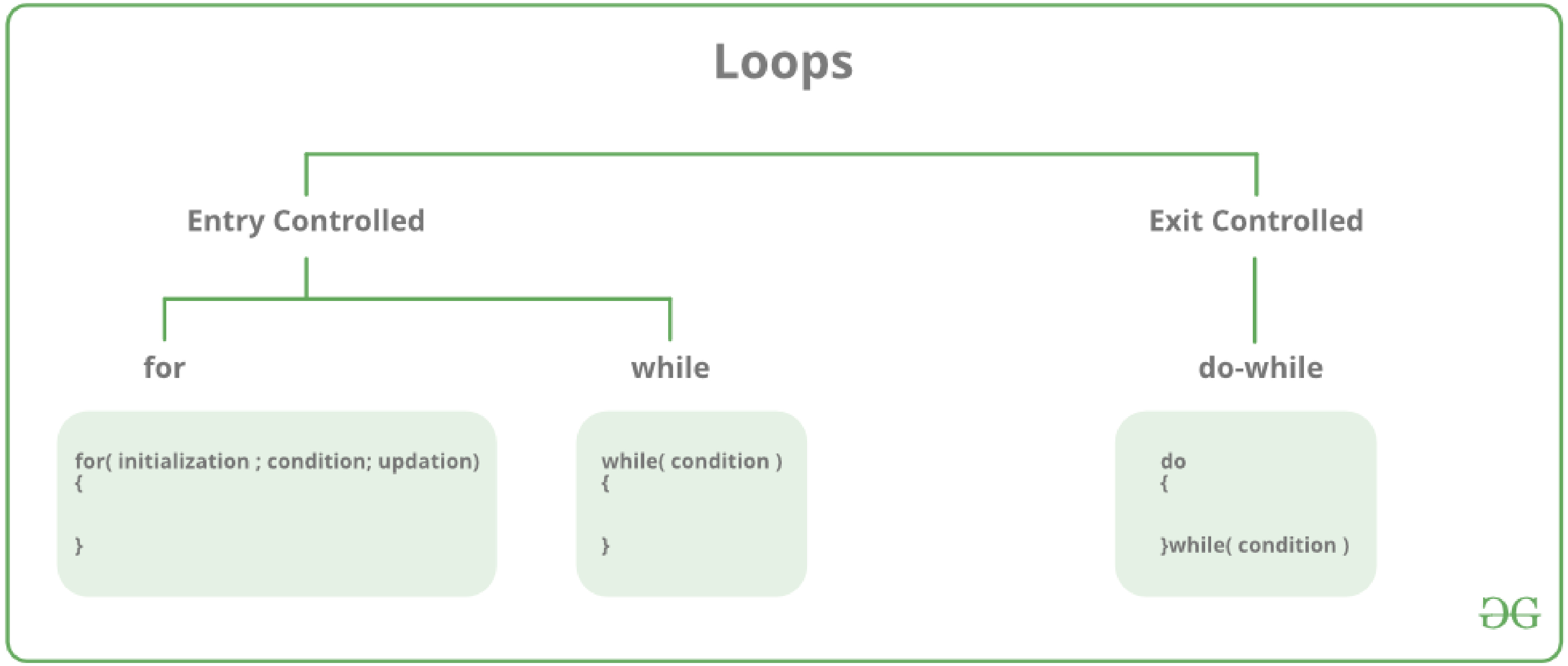

Loops
Entry Controlled
for
while
Exit controlled
do-while

Loops in C

- **There are mainly two types of loops in C Programming:**

1. **Entry Controlled loops:** In Entry controlled loops the test condition is checked before entering the main body of the loop. **For Loop and While Loop** is Entry-controlled loops.
2. **Exit Controlled loops:** In Exit controlled loops the test condition is evaluated at the end of the loop body. The loop body will execute at least once, irrespective of whether the condition is true or false. **do-while Loop** is Exit Controlled loop.

Loops in C

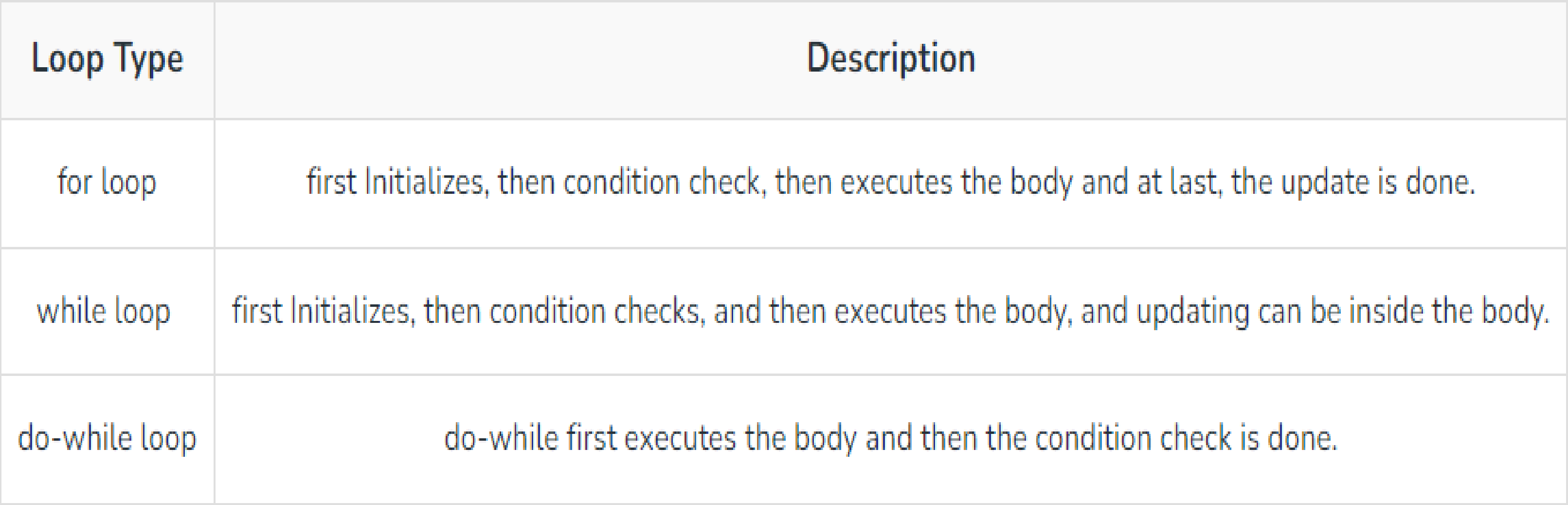


```
for( initialization ; condition; updation)
{

}
```

```
while( condition )
{

}
```

```
do
{

}while( condition )
```

Loops in C



Loop Type	Description
for loop	first Initializes, then condition check, then executes the body and at last, the update is done.
while loop	first Initializes, then condition checks, and then executes the body, and updating can be inside the body.
do-while loop	do-while first executes the body and then the condition check is done.

++i ;

i++ ;

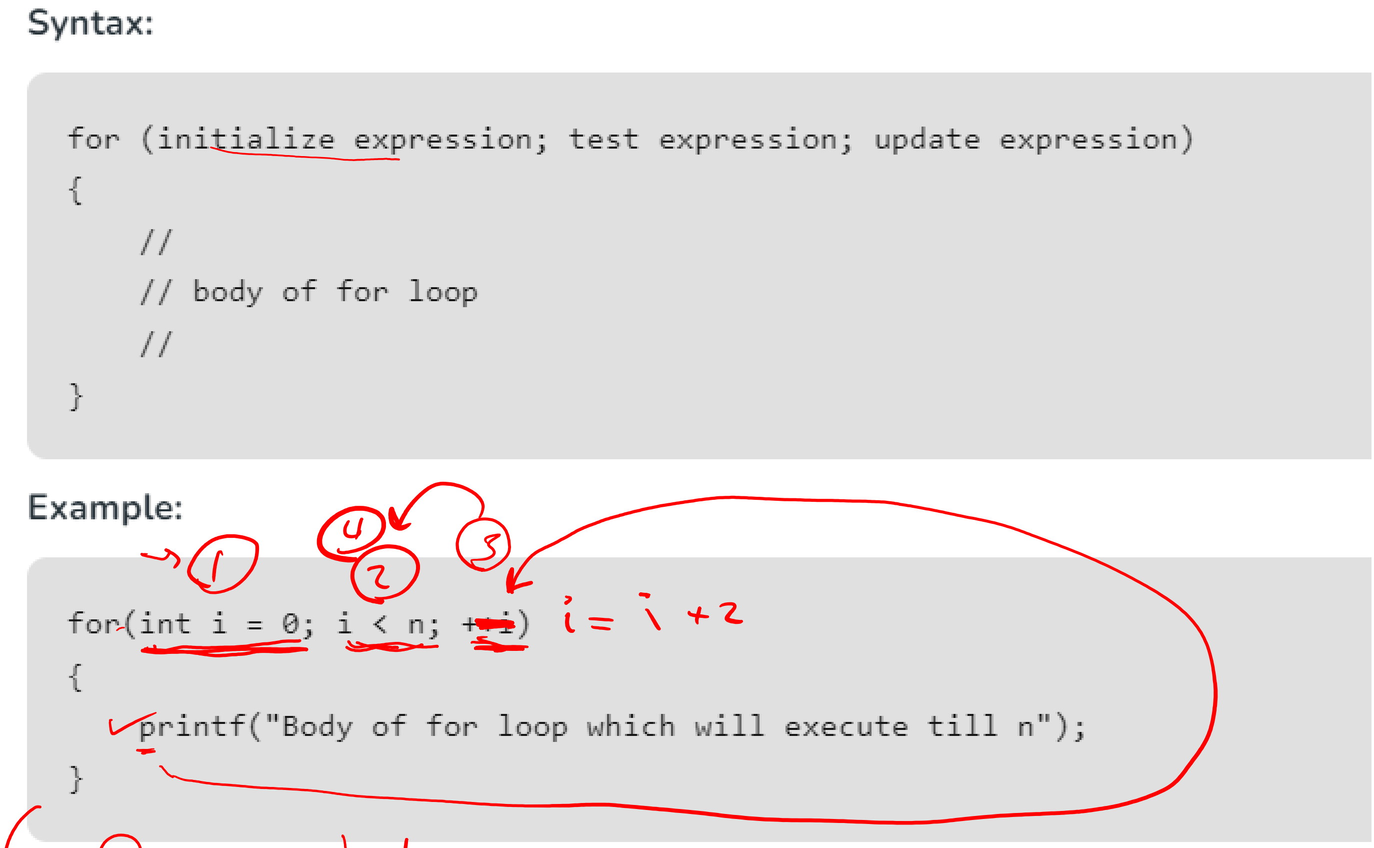
For Loop

i

5

n

5



Syntax:

```
for (initialize expression; test expression; update expression)
{
    //
    // body of for loop
    //
}
```

Example:

```
for(int i = 0; i < n; ++i)
{
   printf("Body of for loop which will execute till n");
}
```

i = i +2

1 ✓ → body

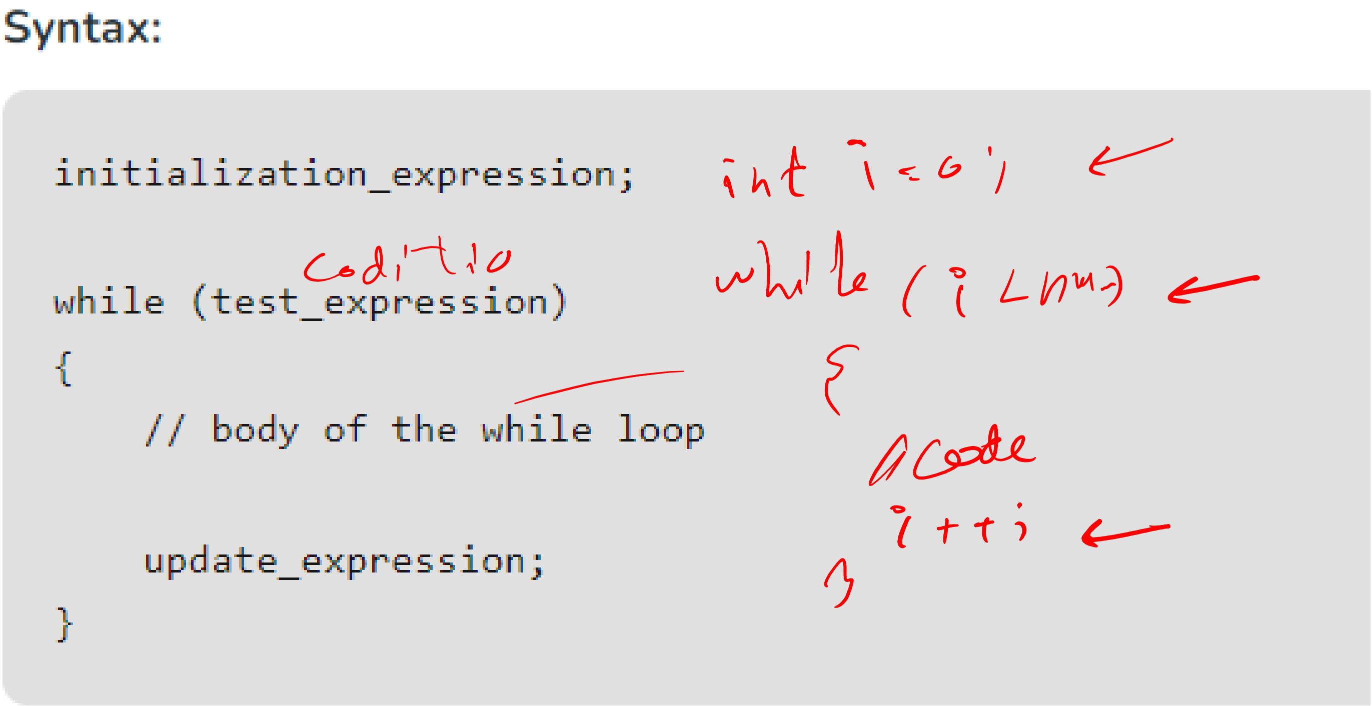
2 ✓ →

3 ✓ →

4 ✓ →

5 ✓ →

while Loop



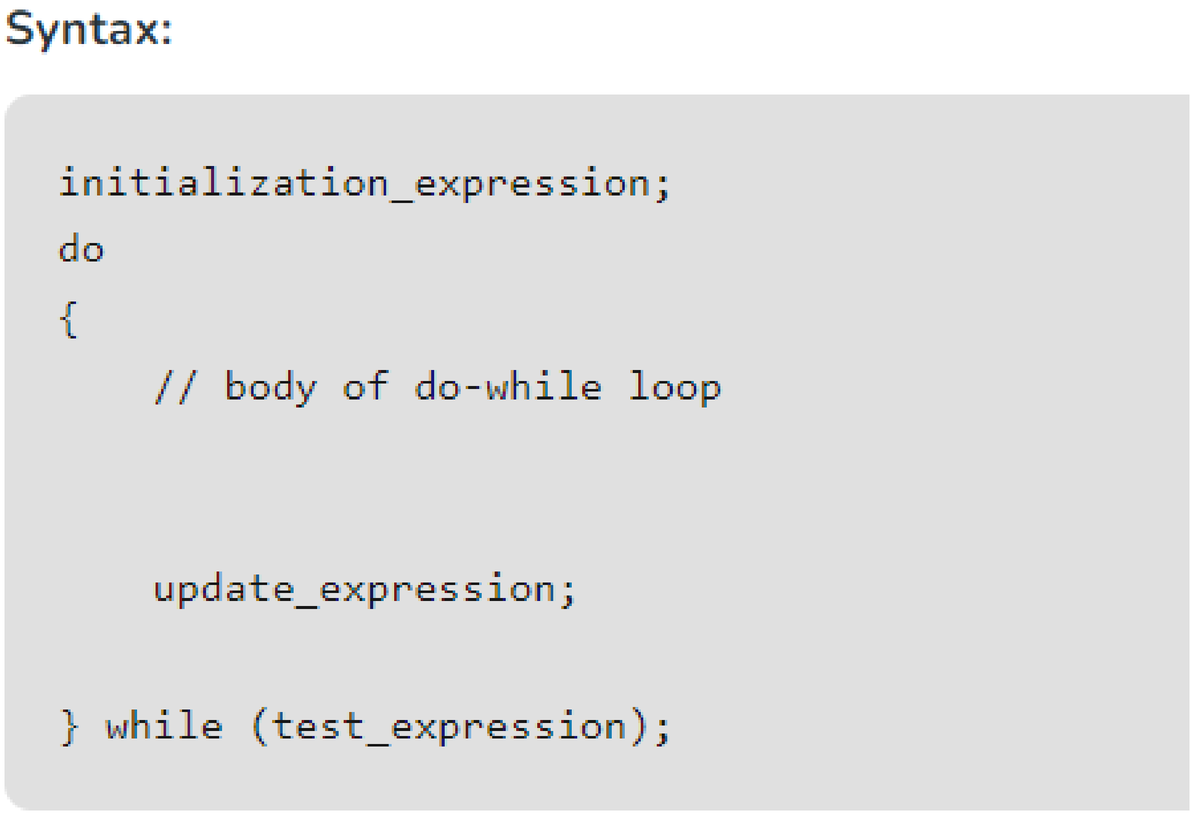
Syntax:

```
initialization_expression;

while (test_expression)
{
    // body of the while loop

    update_expression;
}
```

codition

```
int i=0;
while (i<num)
{
  //code
  i++;
}
```

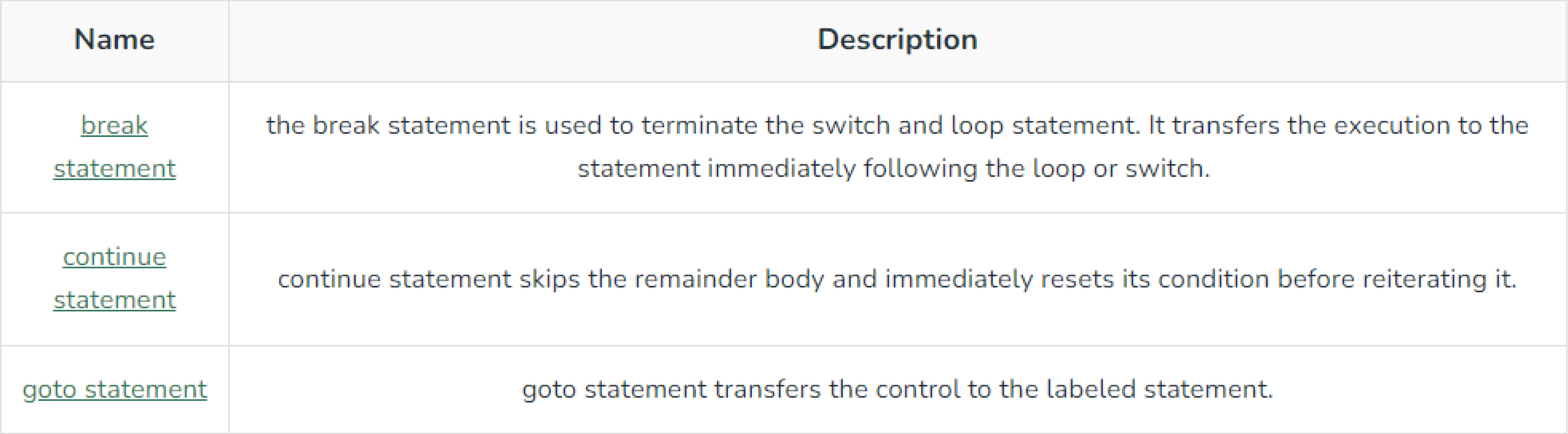
do-while Loop



Syntax:

```
initialization_expression;
do
{
    // body of do-while loop


    update_expression;

} while (test_expression);
```

Loop Control Statements



Name	Description
break statement	the break statement is used to terminate the switch and loop statement. It transfers the execution to the statement immediately following the loop or switch.
continue statement	continue statement skips the remainder body and immediately resets its condition before reiterating it.
goto statement	goto statement transfers the control to the labeled statement.

More about loops !

- **Infinite Loop**
- **Nested loop**
- **If condition + Loop**
- **Loop + array (later)**
- **Loop + strings (later) … etc**

Tasks

- Take from user 2 numbers and find the result of AND(&), OR(|) and OXR (^) from the minimum number to the max.

Ex:

Input

2, 10

output

	AND	OR	XOR
2, 3			
2, 4			
2, 5			
2, 6			
…..etc.			
2, 10			

Links