

Functions

Used to break problem down to small, bite sized pieces

Have an optional type of return value, a name and optional arguments

Functions return at most, ONE value

Functions must be prototyped or declared before usage

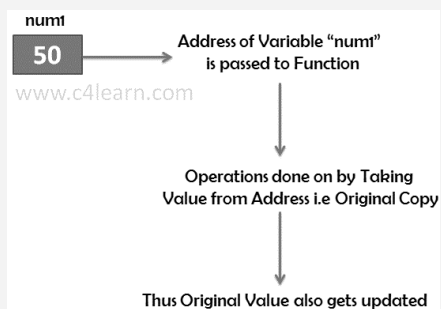
Call by Address

```
#include<stdio.h>
void interchan ge(int *num1,int
num2)
{
    int temp;
    temp = *num1;
    num1 = num2;
    *num2 = temp;
}
int main() {
    int num1=50, num2=70;
    interchan ge( &num1 , & num2);
    printf ("\n Number 1 :
%d", num1);
    printf ("\n Number 2 :
%d", num2);
    return(0);
}
```

OUTPUT

Number 1 : 70
Number 2 : 50

Call Value



Extra Types

int -2,147,483,648 to +2,147,483,647

unsigned int 0 to 4,294,967,295

int64 -9,223,372,036,854,775,808 to +9,223,372,036,854,775,807

Switch

```
switch ( <condition> )
{
    case <value> :
        <statements>
        [ break; ]
    case <value> :
        <statements>
        [ break; ]
    :
    [ default:
        <statements>
        [ break; ] ]
}
```

CBR vs CBV

Point	Call by Value	Call by Reference
Copy	Duplicate Copy of Original Parameter is Passed	Actual Copy of Original Parameter is Passed
Modification	No effect on Original Parameter after modifying parameter in function	Original Parameter gets affected if value of parameter changed inside function

Array Sample

Array Element	4	5	33	13	1
Location	0	1	2	3	4

a[0] = 4;
a[1] = 5;
a[2] = 33;
a[3] = 13;
a[4] = 1;

Call-By-Value Steps

Copy of original parameter is created & passed to the called function

Updates inside method will NOT affect the original value of the variable in the calling function

Call-By-Value Steps (cont)

scope is limited, therefore it cannot alter values inside main function

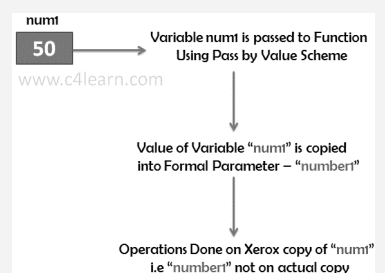
Call by Value

```
#include<stdio.h>
void interchan ge(int number1, int number2)
{
    int temp;
    temp = number1;
    number1 = number2;
    number2 = temp;
}
int main() {
    int num1=50, num2=70;
    interchan ge( num1, num2);
    printf ("\n Number 1 :
%d", num1);
    printf ("\n Number 2 :
%d", num2);
    return(0);
}
```

OUTPUT

Number 1 : 50
Number 2 : 70

CallRef



Call by ref = call by address



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