C Language Cheat Sheet

Program Structure/Functions

type function(*type*,*type*…)	Function declaration

main() {
    declarations;
    statements;
}
	Main routine

type function(arg1, arg2) {
    declarations;
    statements;
    return *value*;
}
	function definition

Comments

// *comment*	Single line comment
/* *comment* */	Multiple line comment

C Pre-processor commands

#include <*filename*>	Include library file
#include “*filename*”	Include user file
#define *name text*	Replacement text
#define *name(var) text*	Replacement macro

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Prefixes

219	219 in Decimal
0b11011011	219 in Binary
0333	219 in Octal
0xDB	219 in Hexadecimal

Data Types/Declarations

char	Character (1 byte)
int	Integer (2 bytes)
float	Floating point number(4 bytes)
double	Floating point number(8 bytes)
short	Integer (2 bytes)
long	Integer (4 bytes)
void	No value

The _t option allows the programmer to specify the size of each data type.

```
typedef unsigned char uint8_t.
```

defines an 8-bit unsigned integer

Initialisation

type name = *value*;	Initialise variable
type name[] = {value1, value2…};	Initialise array
char *name*[] = “*string*”	Initialise character string

Flow of Control

;	Statement terminator
{ }	Block delimiters
break	Exit from a switch, while, do or for block
goto *label*	Go to
my_label:	Label
return *expr*	Return value from function

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Flow Constructions

if (*expr*) {
s*tatement*;
} else if (*expr*){
statement;
} else
statement;
	If statement

while (*expr*) {
statement;
}
	While statement

for (*expr 1*; *expr2*; *expr3*) {
statement;
}
	For statement

do statement;
while(expr);
	Do statement

switch (*expr*) {
case *const1*:
statement1;
break;
case *const2*:
statement2;
break;
default:
statement;
}
	Switch Statement

Operators

++	Increment
- -	Decrement
+	Plus
-	Minus
*	Multiply
/	Divide
%	Modulus (remainder)
&&	Logical AND
| |	Logical OR
!	Logical NOT
&	Bitwise AND
|	Bitwise OR
^	Bitwise XOR
~	Bitwise NOT
>>	Bitwise Shift Right
<<	Bitwise Shift Left
= =	Is equal to
!=	Is not equal to
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to

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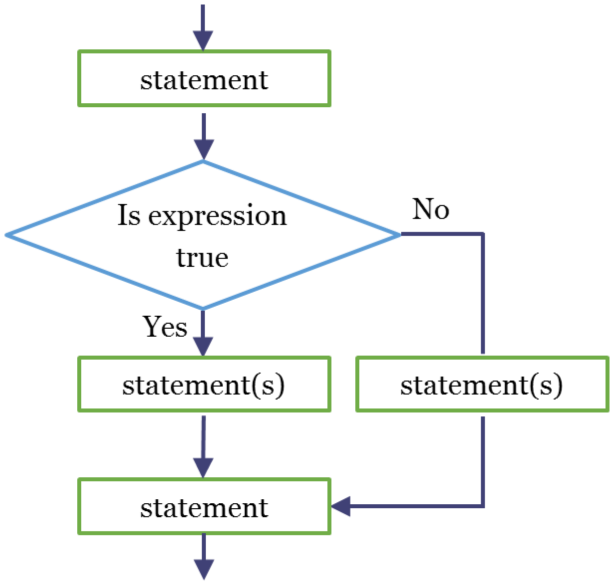
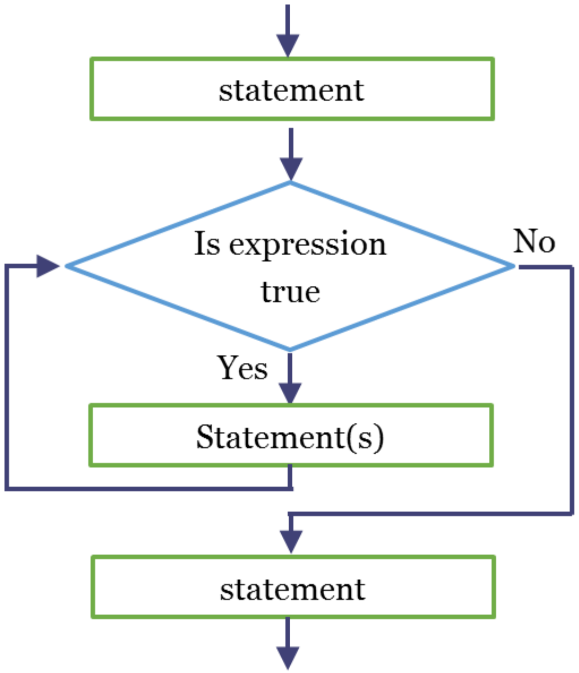
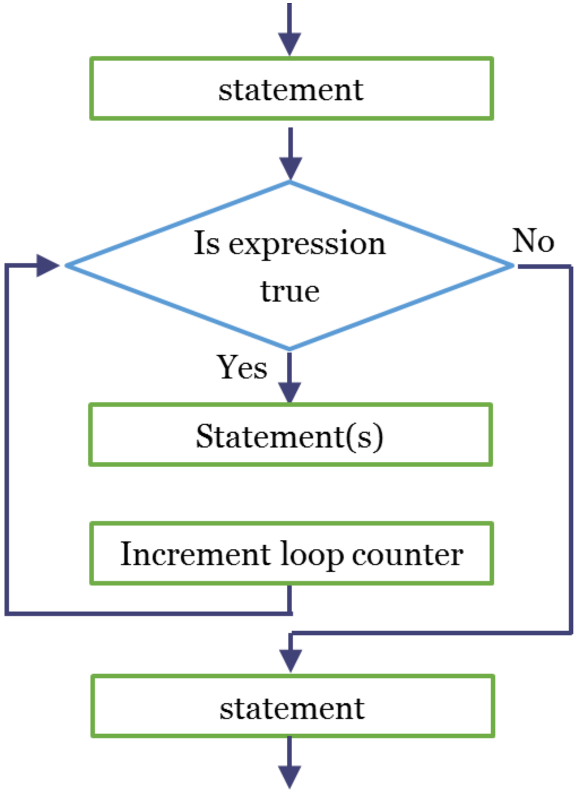
If Statement



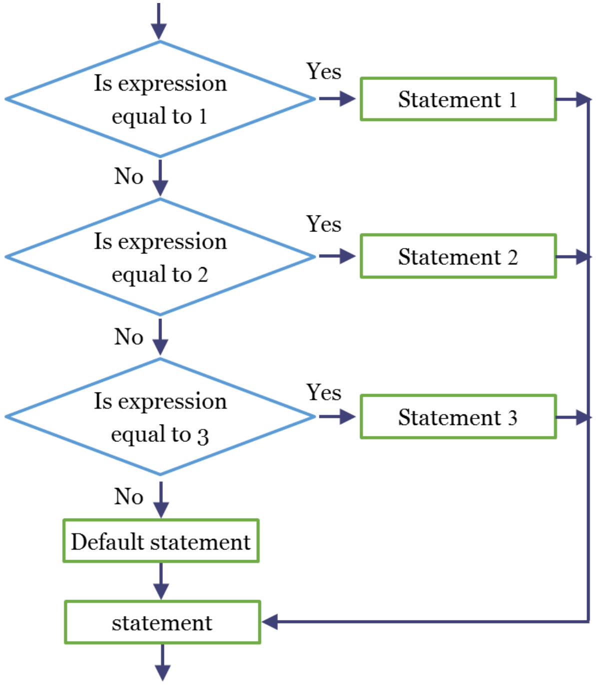
While Statement



For Statement



Switch Statement


Is expression equal to 1
Yes
Statement 1
No
Is expression equal to 2
Yes
Statement 2
No
Is expression equal to 3
Yes
Statement 3
No
Default statement
statement