**C programming examples**

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C programming examples: These programs illustrate various programming elements, concepts such as using operators, loops, functions, single and double dimensional arrays, performing operations on strings, files, pointers etc. Browse the code from simple c program to complicated ones you are looking for, every one of them is provided with output. C program download with executable files, so that you save on your computer and run programs without compiling the source code. All programs are made using *c programming language* and Codeblocks, most of these will work under [Dev c++ compiler](http://sourceforge.net/projects/orwelldevcpp/files/latest/download) also. Download software you need to develop codes. The first program prints "Hello World" on screen.

**C programming codes**

* [Hello world](http://www.programmingsimplified.com/c-hello-world-program)
* [Print Integer](http://www.programmingsimplified.com/c/program/print-integer)
* [Addition](http://www.programmingsimplified.com/c-program-add-two-numbers)
* [Odd or Even](http://www.programmingsimplified.com/c/source-code/c-program-check-odd-even)
* [Add, subtract, multiply and divide](http://www.programmingsimplified.com/c/program/addition-subtraction-multiplication-and-division)
* [Check vowel](http://www.programmingsimplified.com/c/source-code/c-program-check-vowel)
* [Leap year](http://www.programmingsimplified.com/c/source-code/c-program-check-leap-year)
* [Add digits](http://www.programmingsimplified.com/c/program/c-program-add-number-digits)
* [Factorial](http://www.programmingsimplified.com/c-program-find-factorial)
* [HCF and LCM](http://www.programmingsimplified.com/c/source-code/c-program-find-hcf-and-lcm)
* [Decimal to binary conversion](http://www.programmingsimplified.com/c/source-code/c-program-convert-decimal-to-binary)
* [ncR and nPr](http://www.programmingsimplified.com/c/source-code/c-program-find-ncr-and-npr)
* [Add n numbers](http://www.programmingsimplified.com/c-program-add-n-numbers)
* [Swapping](http://www.programmingsimplified.com/c-program-swap-two-numbers)
* [Reverse number](http://www.programmingsimplified.com/c/source-code/c-program-reverse-number)
* [Palindrome number](http://www.programmingsimplified.com/c/source-code/c-program-palindrome-number)
* [Print Pattern](http://www.programmingsimplified.com/c-program-print-stars-pyramid)
* [Diamond](http://www.programmingsimplified.com/c/source-code/c-program-print-diamond-pattern)
* [Prime numbers](http://www.programmingsimplified.com/c/source-code/c-program-for-prime-number)
* [Find Armstrong number](http://www.programmingsimplified.com/c-program-find-armstrong-number)
* [Generate Armstrong number](http://www.programmingsimplified.com/c-program-generate-armstrong-number)
* [Fibonacci series](http://www.programmingsimplified.com/c-program-generate-fibonacci-series)
* [Print Floyd’s triangle](http://www.programmingsimplified.com/c-program-print-floyd-triangle)
* [Print Pascal triangle](http://www.programmingsimplified.com/c-program-print-pascal-triangle)
* [Addition using pointers](http://www.programmingsimplified.com/c-program-add-two-numbers-using-pointers)
* [Maximum element in array](http://www.programmingsimplified.com/c/source-code/c-program-find-maximum-element-in-array)
* [Minimum element in array](http://www.programmingsimplified.com/c/source-code/c-program-find-minimum-element-in-array)
* [Linear search](http://www.programmingsimplified.com/c/source-code/c-program-linear-search)
* [Binary search](http://www.programmingsimplified.com/c/source-code/c-program-binary-search)
* [Reverse array](http://www.programmingsimplified.com/c-program-reverse-array)
* [Insert element in array](http://www.programmingsimplified.com/c/source-code/c-program-insert-element-in-array)
* [Delete element from array](http://www.programmingsimplified.com/c/source-code/c-program-delete-element-from-array)
* [Merge arrays](http://www.programmingsimplified.com/c/source-code/c-program-merge-two-arrays)
* [Bubble sort](http://www.programmingsimplified.com/c/source-code/c-program-bubble-sort)
* [Insertion sort](http://www.programmingsimplified.com/c/source-code/c-program-insertion-sort)
* [Selection sort](http://www.programmingsimplified.com/c/source-code/c-program-selection-sort)
* [Add matrices](http://www.programmingsimplified.com/c-program-add-matrices)
* [Subtract matrices](http://www.programmingsimplified.com/c/source-code/c-program-subtract-matrices)
* [Transpose matrix](http://www.programmingsimplified.com/c-program-transpose-matrix)
* [Multiply two matrices](http://www.programmingsimplified.com/c-program-multiply-matrices)
* [Print string](http://www.programmingsimplified.com/c/program/print-string)
* [String length](http://www.programmingsimplified.com/c-program-find-string-length)
* [Compare strings](http://www.programmingsimplified.com/c-program-compare-two-strings)
* [Copy string](http://www.programmingsimplified.com/c/source-code/c-program-copy-strings)
* [Concatenate strings](http://www.programmingsimplified.com/c-program-concatenate-strings)
* [Reverse string](http://www.programmingsimplified.com/c-program-reverse-string)
* [Find palindrome](http://www.programmingsimplified.com/c-program-find-palindrome)
* [Delete vowels](http://www.programmingsimplified.com/c/source-code/c-program-remove-vowels-from-string)
* [C substring](http://www.programmingsimplified.com/c/source-code/c-substring)
* [Sort a string](http://www.programmingsimplified.com/c/source-code/c-program-sort-string)
* [Remove spaces](http://www.programmingsimplified.com/c/source-code/c-program-remove-spaces-string)
* [Change case](http://www.programmingsimplified.com/c/program/c-program-change-case)
* [Swap strings](http://www.programmingsimplified.com/c-program-swap-two-strings)
* [Character's frequency](http://www.programmingsimplified.com/c-program-find-characters-frequency)
* [Anagrams](http://www.programmingsimplified.com/c/source-code/c-anagram-program)
* [Read file](http://www.programmingsimplified.com/c-program-read-file)
* [Copy files](http://www.programmingsimplified.com/c-program-copy-file)
* [Merge two files](http://www.programmingsimplified.com/c-program-merge-two-files)
* [List files in a directory](http://www.programmingsimplified.com/c-program-list-files-in-directory)
* [Delete file](http://www.programmingsimplified.com/c-program-delete-file)
* [Random numbers](http://www.programmingsimplified.com/c-program-generate-random-numbers)
* [Add complex numbers](http://www.programmingsimplified.com/c-program-add-two-complex-numbers)
* [Print date](http://www.programmingsimplified.com/c/program/print-date)
* [Get IP address](http://www.programmingsimplified.com/c-program-get-ip-address)
* [Shutdown computer](http://www.programmingsimplified.com/c-program-shutdown-computer)

**C program examples**

Example 1 - C hello world program  
/\* A very simple c program printing a string on screen\*/

#include <stdio.h>

main()

{

printf("Hello World**\n**");

return 0;

}

Output of above program:  
"Hello World"

Example 2 - c program to take input from user using scanf

#include <stdio.h>

main()

{

int number;

printf("Enter an integer**\n**");

scanf("%d",&number);

printf("Integer entered by you is %d**\n**", number);

return 0;

}

Output:  
Enter a number  
5  
Number entered by you is 5

Example 3 - using if else control instructions

#include <stdio.h>

main()

{

int x = 1;

if ( x == 1 )

printf("x is equal to one.**\n**");

else

printf("For comparison use == as = is the assignment operator.**\n**");

return 0;

}

Output :  
x is equal to one.

Example 4 - loop example

#include <stdio.h>

main ()

{

int value = 1;

while(value<=3)

{

printf("Value is %d**\n**", value);

value++;

}

return 0;

}

Output:  
Value is 1  
Value is 2  
Value is 3

Example 5 - c program for prime number

#include <stdio.h>

main()

{

int n, c;

printf("Enter a number**\n**");

scanf("%d", &n);

if ( n == 2 )

printf("Prime number.**\n**");

else

{

for ( c = 2 ; c <= n - 1 ; c++ )

{

if ( n % c == 0 )

**break**;

}

if ( c != n )

printf("Not prime.**\n**");

else

printf("Prime number.**\n**");

}

return 0;

}

Example 6 - command line arguments

#include <stdio.h>

main(int argc, char \*argv[])

{

int c;

printf("Number of command line arguments passed: %d**\n**", argc);

for ( c = 0 ; c < argc ; c++)

printf("%d. Command line argument passed is %s**\n**", c+1, argv[c]);

return 0;

}

Above c program prints the number and all arguments which are passed to it.

Example 7 - Array program

#include <stdio.h>

main()

{

int array[100], n, c;

printf("Enter the number of elements in array**\n**");

scanf("%d", &n);

printf("Enter %d elements**\n**", n);

for ( c = 0 ; c < n ; c++ )

scanf("%d", &array[c]);

printf("Array elements entered by you are:**\n**");

for ( c = 0 ; c < n ; c++ )

printf("array[%d] = %d**\n**", c, array[c]);

return 0;

}

Example 8 - function program

#include <stdio.h>

void my\_function();

main()

{

printf("Main function.**\n**");

my\_function();

printf("Back in function main.**\n**");

return 0;

}

void my\_function()

{

printf("Welcome to my function. Feel at home.**\n**");

}

Example 9 - Using comments in a program

#include <stdio.h>

main()

{

*// Single line comment in c source code*

printf("Writing comments is very useful.**\n**");

*/\**

*\* Multi line comment syntax*

*\* Comments help us to understand code later easily.*

*\* Will you write comments while developing programs ?*

*\*/*

printf("Good luck c programmer.**\n**");

return 0;

}

Example 10 - using structures in c programming

#include <stdio.h>

struct programming

{

float constant;

char \*pointer;

};

main()

{

struct programming variable;

char string[] = "Programming in Software Development.";

variable.constant = 1.23;

variable.pointer = string;

printf("%f**\n**", variable.constant);

printf("%s**\n**", variable.pointer);

return 0;

}

Example 11 - C program for Fibonacci series

#include <stdio.h>

main()

{

int n, first = 0, second = 1, next, c;

printf("Enter the number of terms**\n**");

scanf("%d",&n);

printf("First %d terms of Fibonacci series are :-**\n**",n);

for ( c = 0 ; c < n ; c++ )

{

if ( c <= 1 )

next = c;

else

{

next = first + second;

first = second;

second = next;

}

printf("%d**\n**",next);

}

return 0;

}

Example 12 - c graphics programming

#include <graphics.h>

#include <conio.h>

main()

{

int gd = DETECT, gm;

initgraph(&gd, &gm,"C:**\\**TC**\\**BGI");

outtextxy(10,20, "Graphics source code example.");

circle(200, 200, 50);

setcolor(BLUE);

line(350, 250, 450, 50);

getch();

closegraph( );

return 0;

}

**For GCC users**

If you are using GCC on Linux operating system then you need to modify programs. For example consider the following program which prints first ten natural numbers

#include <stdio.h>

#include <conio.h>

int main()

{

int c;

for ( c = 1 ; c <= 10 ; c++ )

printf("%d**\n**", c);

getch();

return 0;

}

Above source code includes a header file <conio.h> and uses function getch, but this file is Borland specific so it works in turbo c compiler but not in GCC. So the code for GCC should be like

#include <stdio.h>

int main()

{

int c;

*/\* for loop \*/*

for ( c = 1 ; c <= 10 ; c++ )

printf("%d**\n**", c);

return 0;

}

If using GCC then saves the code in a file say numbers, to compile the program open the terminal and enter command GCC numbers, this will compile