

- Type in and run the five programs presented in this chapter. Compare the output produced by each program with the output presented after each program in the text.

- Which of the following are invalid variable names? Why?

[Click here to view code image](#) ឯកតាច្នាំកុង character (កំស្មាន)

Int	char	6_05	ត្រូវបានគោរព ហើយ Variable Name ត្រូវបាន string
Calloc	Xx	alpha_beta_routine	
floating	_1312	z	
ReInitialize	_	A\$	ត្រូវបានគោរព ហើយ special character

- Which of the following are invalid constants? Why?

[Click here to view code image](#) ឯកតាច្នាំកុងលេខ 116 ក្នុងកុងលេខ 116

123.456	0x10.5	0X0G1
0001	0xFFFF	123L
0xab05	0L	597.25
123.5e2	.0001	+12
98.6F	98.7U	17777s
0996	-12E-12	07777
1234uL	1.2Fe-7	15,000
1.234L	197u	100U
0xABCDL	0xabcu	+123

- Write a program that converts 27® from degrees Fahrenheit (F) to degrees Celsius (C) using the following formula:

$$C = (F - 32) / 1.8$$

- What output would you expect from the following program?

```
#include <stdio.h>

int main (void)
{
    char c, d;
    c = 'd';
    d = c;
    printf ("d = %c\n", d);

    return 0;
}
```

- Write a program to evaluate the polynomial shown here:

$$3x^3 - 5x^2 + 6$$

for $x = 2.55$.

Vo 1.)

Code::Blocks 20.03

Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help

main.c x

3.1

```
1 #include <stdio.h>
2 int main (void)
3 {
4     int integerVar = 100;
5     float floatingVar = 331.79;
6     double doubleVar = 8.44e+11;
7     char charVar = 'W';
8     _Bool boolVar = 0;
9     printf ("integerVar = %i\n", integerVar);
10    printf ("floatingVar = %f\n", floatingVar);
11    printf ("doubleVar = %e\n", doubleVar);
12    printf ("doubleVar = %g\n", doubleVar);
13    printf ("charVar = %c\n", charVar);
14    printf ("boolVar = %i\n", boolVar);
15    return 0;
16 }
17
```

"C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\bin\Debug\work1.exe"

integerVar = 100
floatingVar = 331.790009
doubleVar = 8.440000e+11
doubleVar = 8.44e+11
charVar = W
boolVar = 0

Process returned 0 (0x0) execution time : 0.086 s
Press any key to continue.

Logs & others

Code::Blocks x Search results x Ccc x Build log x Build messages x CppCheck/Vera++ x CppCheck/Vera++ messages x Cscope x Debugger x Doxygen x Fortran info x Close x

\OpenSSH;C:\ProgramData\chocolatey\bin;C:\Program Files (x86)\Pulse Secure\VC142.CRT\X64;C:\Program Files (x86)\Pulse Secure\VC142.CRT\X64;C:\Program Files (x86)\Common Files\Pulse Secure\TNC Client Plugin;C:\Program Files\dotnet;C:\Program Files (x86)\Windows Kits\10\Windows Performance Toolkit;C:\Python312\Scripts;C:\Python312;C:\Users\user\AppData\Local\Microsoft\WindowsApps;C:\Users\user\AppData\Local\JetBrains\Toolbox\scripts;C:\Users\user\AppData\Local\Programs\Microsoft VS Code\bin

Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\bin\Debug\work1.exe" (in C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\.)

Activate Windows Go to Settings to activate Windows.

gkok Christian College\เดสก์ท็อป\work1\main.c C/C++ Windows (CR+LF) WINDOWS-874 Line 17, Col 1, Pos 421 Insert Read/Write default

Code::Blocks 20.03

Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help

main.c x

3.2

```
1 // Illustrate the use of various arithmetic operators
2 #include <stdio.h>
3 int main (void)
4 {
5     int a = 100;
6     int b = 2;
7     int c = 25;
8     int d = 4;
9     int result;
10    result = a - b; // subtraction
11    printf ("a - b = %i\n", result);
12    result = b * c; // multiplication
13    printf ("b * c = %i\n", result);
14    result = a / c; // division
15    printf ("a / c = %i\n", result);
16    result = a + b * c; // precedence
17    printf ("a + b * c = %i\n", result);
18    printf ("a * b + c * d = %i\n", a * b + c * d);
```

"C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\bin\Debug\work1.exe"

a - b = 98
b * c = 50
a / c = 4
a + b * c = 150
a * b + c * d = 300

Process returned 0 (0x0) execution time : 0.091 s
Press any key to continue.

Logs & others

Code::Blocks x Search results x Ccc x Build log x Build messages x CppCheck/Vera++ x CppCheck/Vera++ messages x Cscope x Debugger x Doxygen x Fortran info x Close x

\OpenSSH;C:\ProgramData\chocolatey\bin;C:\Program Files (x86)\Pulse Secure\VC142.CRT\X64;C:\Program Files (x86)\Pulse Secure\VC142.CRT\X64;C:\Program Files (x86)\Common Files\Pulse Secure\TNC Client Plugin;C:\Program Files\dotnet;C:\Program Files (x86)\Windows Kits\10\Windows Performance Toolkit;C:\Python312\Scripts;C:\Python312;C:\Users\user\AppData\Local\Microsoft\WindowsApps;C:\Users\user\AppData\Local\JetBrains\Toolbox\scripts;C:\Users\user\AppData\Local\Programs\Microsoft VS Code\bin

Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\bin\Debug\work1.exe" (in C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\.)

Activate Windows Go to Settings to activate Windows.

gkok Christian College\เดสก์ท็อป\work1\main.c C/C++ Windows (CR+LF) WINDOWS-874 Line 5, Col 13, Pos 107 Insert Read/Write default

3.3

```
1 // More arithmetic expressions
2 #include <stdio.h>
3 int main (void)
4 {
5     int a = 25;
6     int b = 2;
7     float c = 25.0;
8     float d = 2.0;
9     printf ("6 + a / 5 * b = %i\n", 6 + a / 5 * b);
10    printf ("a / b * b = %i\n", a / b * b);
11    printf ("c / d * d = %f\n", c / d * d);
12    printf ("-a = %i\n", -a);
13    return 0;
14 }
15
```

Output window:

```
C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\bin\Debug\work1.exe
6 + a / 5 * b = 16
a / b * b = 24
c / d * d = 25.000000
-a = -25

Process returned 0 (0x0) execution time : 0.084 s
Press any key to continue.
```

3.4

```
1 // The modulus operator
2 #include <stdio.h>
3 int main (void)
4 {
5     int a = 25, b = 5, c = 10, d = 7;
6     printf("a = %i, b = %i, c = %i, and d = %i\n", a, b,
7            c, d);
8     printf ("a %% b = %i\n", a % b);
9     printf ("a %% c = %i\n", a % c);
10    printf ("a %% d = %i\n", a % d);
11    printf ("a / d * d + a %% d = %i\n",
12           a / d * d + a % d);
13    return 0;
14 }
15
```

Output window:

```
C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\bin\Debug\work1.exe
a = 25, b = 5, c = 10, and d = 7
a % b = 0
a % c = 5
a % d = 4
a / d * d + a % d = 25

Process returned 0 (0x0) execution time : 0.090 s
Press any key to continue.
```

3.5

```
main.c x
5 float f1 = 123.125, f2;
6 int i1, i2 = -150;
7 char c = 'a';
8 i1 = f1; // floating to integer conversion
9 printf ("%f assigned to an int produces %i\n", f1, i1);
10 f1 = i2; // integer to floatingconversion
11 printf ("%i assigned to a float produces %f\n", i2, f1);
12 f1 = i2 / 100; // integer divided by integer
13 printf ("%i divided by 100 produces %f\n", i2, f1);
14 f2 = i2 / 100.0; // integer divided by a float
15 printf ("%i divided by 100.0 produces %f\n", i2, f2);
16 f2 = (float) i2 / 100; // type cast operator
17 printf("(float) %i divided by 100 produces %f\n", i2,
18 -f2);
19 return 0;
20 }
21 }
```

"C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\bin\Debug\work1.exe"

123.125000 assigned to an int produces 123
-150 assigned to a float produces -150.000000
-150 divided by 100 produces -1.000000
-150 divided by 100.0 produces -1.500000
(float) -150 divided by 100 produces -1.500000

Process returned 0 (0x0) execution time : 0.101 s
Press any key to continue.

Logs & others

Code::Blocks X Search results X Cccc X Build log X

Activate Windows
Go to Settings to activate Windows.

วิธี

.c [work1] - Code::Blocks 20.03

File View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help

main.c x

```
main.c x
1 #include <stdio.h>
2
3 int main()
4 {
5     float x = 2.55;
6     float result = 3 * (x * x * x) - 5 * (x * x) + 6;
7     printf("The result is = %f\n", result);
8     return 0;
9 }
10
11 }
```

"C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\bin\Debug\work1.exe"

The result is = 23.231621

Process returned 0 (0x0) execution time : 0.086 s
Press any key to continue.

Logs & others

Code::Blocks X Search results X Cccc X Build log X

Activate Windows
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วันที่ 8/9

main.c [work1] - Code::Blocks 20.03

File Edit View Search Project Build Debug Fortran wxSmith Tools+ Plugins Doxygen Settings Help

<global>

Management x main.c x

Projects Files FSy x

Workspace work1 Sources main.c

```
1 #include <stdio.h>
2
3 int main()
4 {
5     printf("Next_Multiple=%d \n", 365+7-(365%7));
6     printf("Next_Multiple=%d \n", 12258+23-(12258%23));
7     printf("Next_Multiple=%d \n", 996+4-(996%4));
8 }
9
```

"C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\bin\Debug\work1.exe"

Next_Multiple=371
Next_Multiple=12259
Next_Multiple=1000

Process returned 0 (0x0) execution time : 0.021 s
Press any key to continue.

Logs & others

Code::Blocks x Search results x

\OpenSSH;C:\ProgramData\chocolatey\bin
\Program Files\dotnet;C:\Program Files
\JetBrains\Toolbox\scripts;C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\.;

Executing: "C:\Program Files\CodeBlocks\bin\工作区\work1\work1.exe"

Activate Windows
Go to Settings to activate Windows.

C:\Users\user\OneDrive - Bangkok Christian College\เดสก์ท็อป\work1\main.c

Windows Taskbar: C:\Program Files\CodeBlocks\bin\工作区\work1\work1.exe, ENG, 4:50 PM