

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

Management Start here

Projects Files FSymbols Workspace

Code::Blocks
The open source, cross-platform IDE

Release 20.03 rev 11983 (2020-03-12 18:24:30) gcc 8.1.0 Windows/unicode - 64 bit

Create a new project Open an existing project Tip of the Day

Visit the Code::Blocks forums Report a bug or request a new feature

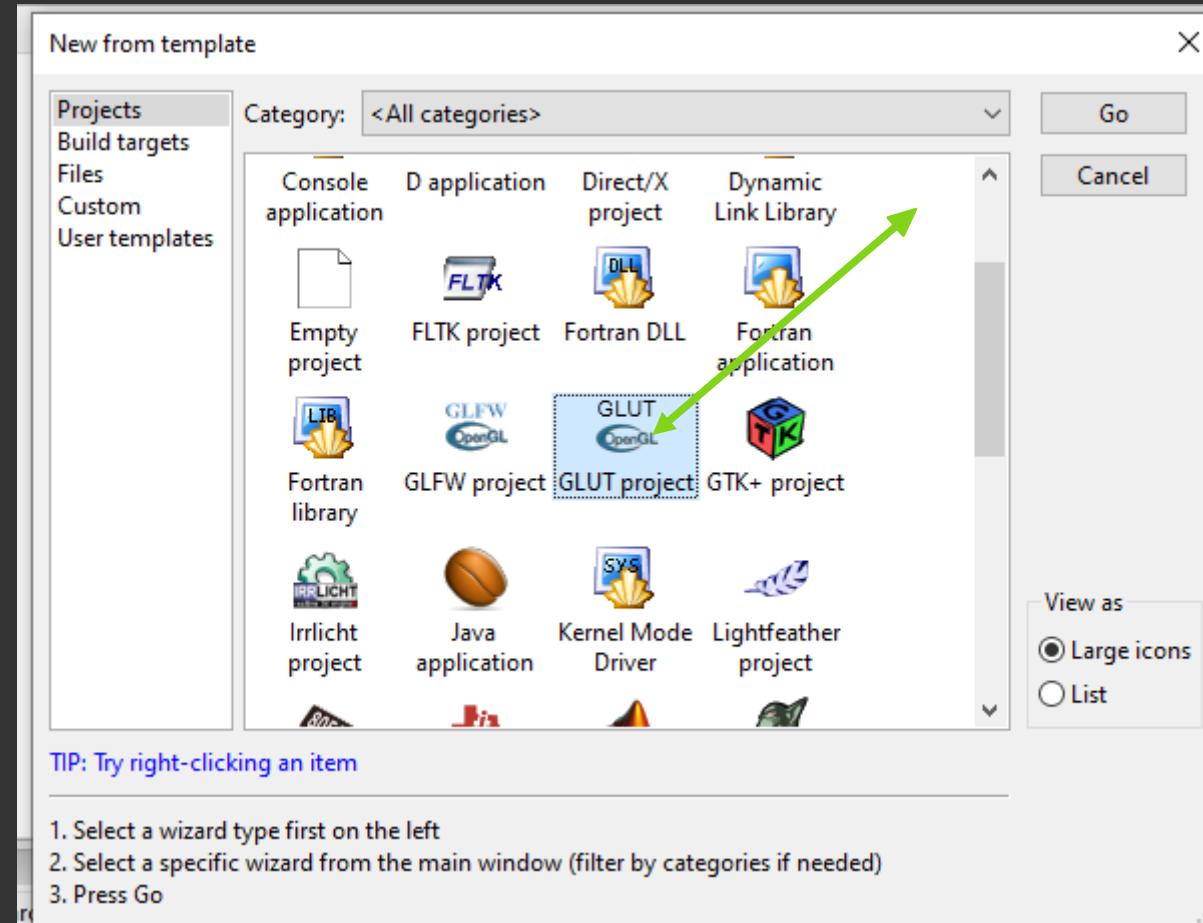
Logs & others

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 DoxyX

File	Line	Message

default

30°C Nublado



GLUT project



Welcome to the new GLUT project wizard!

This wizard will guide you to create a new project using the GLUT OpenGL extensions.

When you're ready to proceed, please click "Next"...

Skip this page next time

< Back

Next >

Cancel

GLUT project



Please select the folder where you want the new project to be created as well as its title.

Project title:



Folder to create project in:

...

Project filename:

Resulting filename:

Nome e local

< Back

Next >

Cancel

GLUT project



Please select the location of GLUT on your computer.
This is the top-level folder where GLUT was installed (unpacked).
To help you, this folder must contain the subfolders
"include" and "lib".

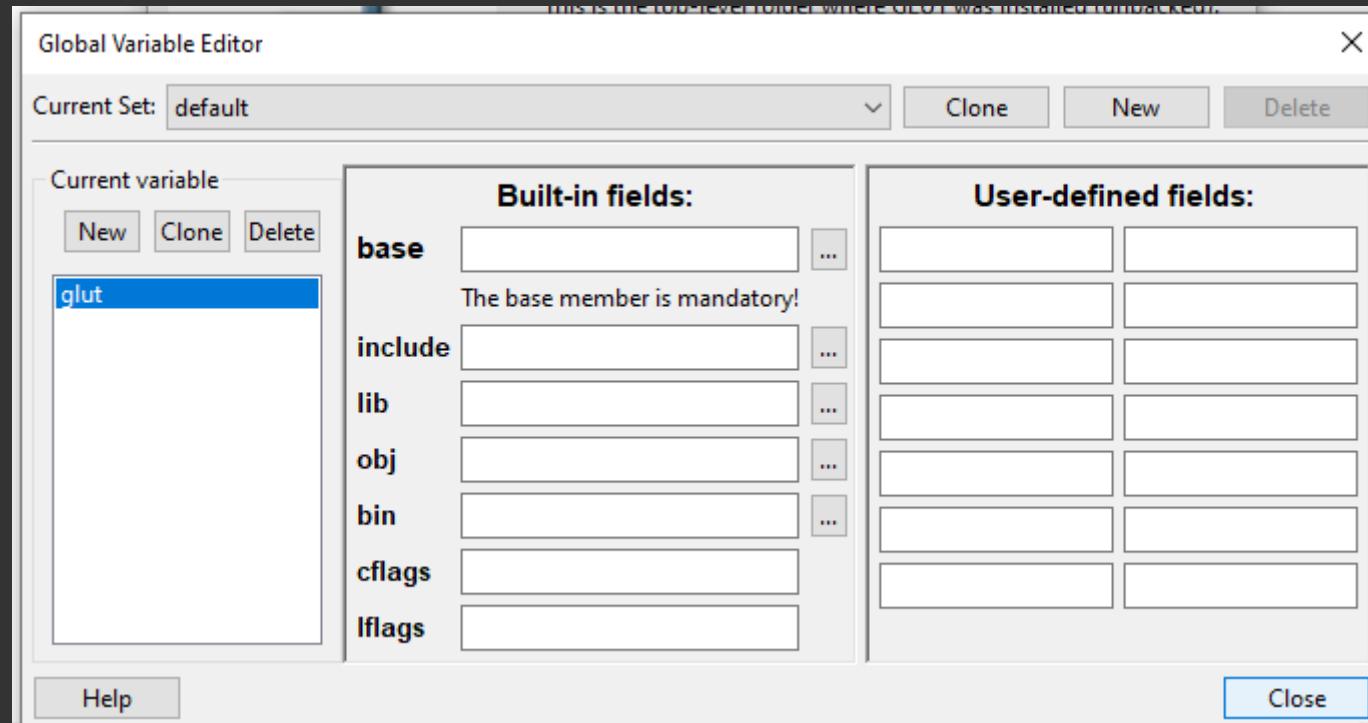
Please select GLUT's location:

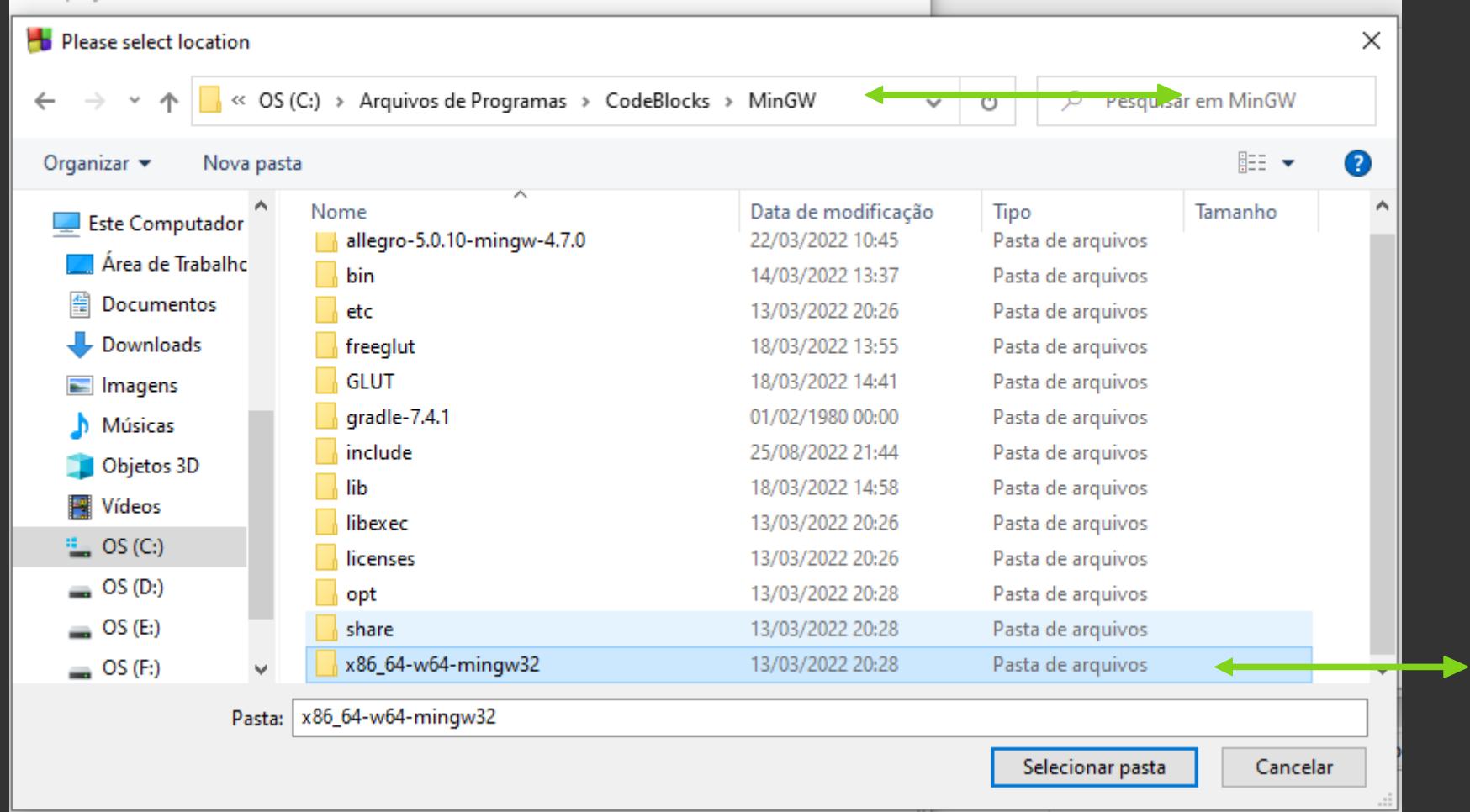


< Back

Next >

Cancel





GLUT project

X



Please select the location of GLUT on your computer.
This is the top-level folder where GLUT was installed (unpacked).
To help you, this folder must contain the subfolders
"include" and "lib".

Please select GLUT's location:

C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw



< Back

Next >

Cancel

GLUT project

X



Please select the compiler to use and which configurations you want enabled in your project.

Compiler:

GNU GCC Compiler

Create "Debug" configuration: Debug

"Debug" options

Output dir.: bin\Debug\

Objects output dir.: obj\Debug\

Create "Release" configuration: Release

"Release" options

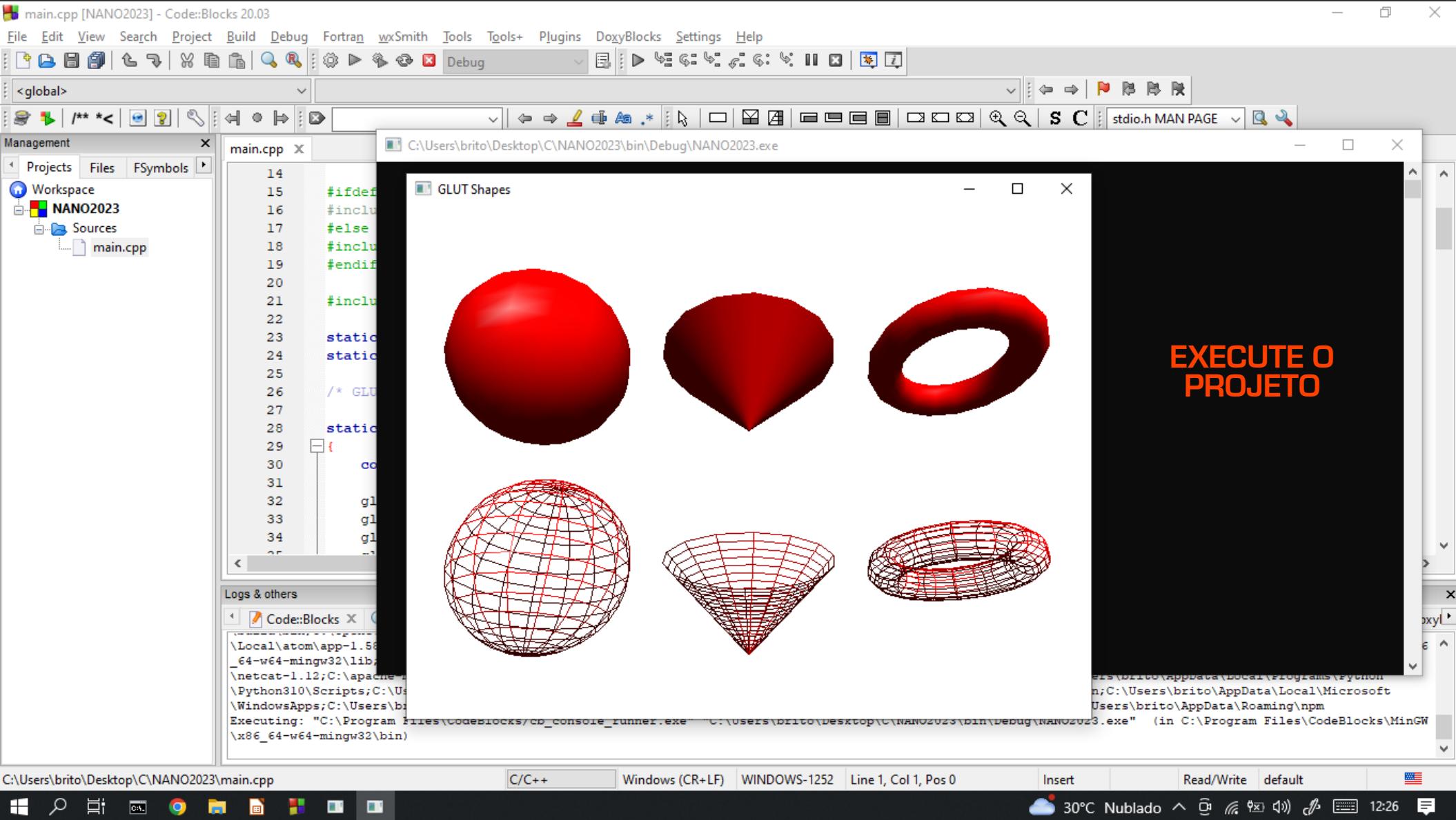
Output dir.: bin\Release\

Objects output dir.: obj\Release\

< Back

Finish

Cancel



main.cpp [NANO2023] - Code::Blocks 20.03

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

<global>

Management X

Projects Files FSymbols

Workspace NANO2023

Sources main.cpp

Save main.cpp
Close main.cpp
Open with >
Remove file from project
Format this file (AStyle)
Reparse this file

Build file
Clean file
Options >
Properties...

main.cpp X

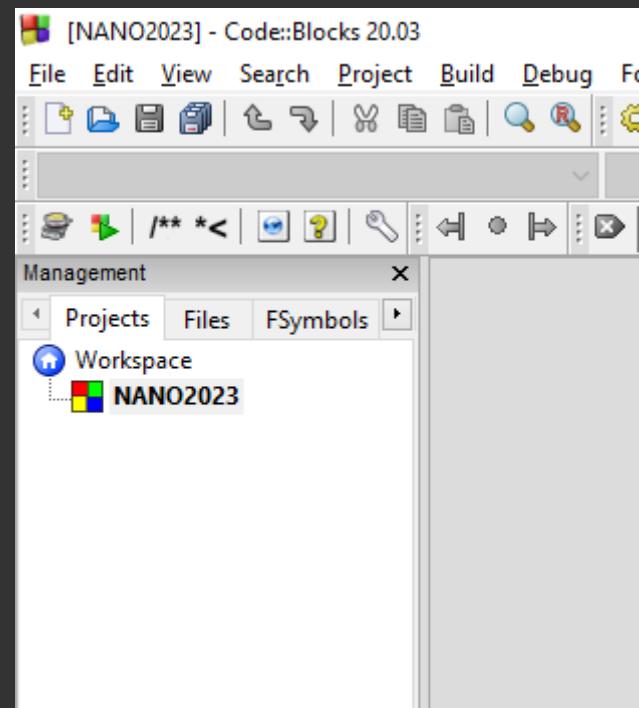
```
14
15 #ifdef __APPLE__
16 #include <GLUT/glut.h>
17 #else
18 #include <GL/glut.h>
19 f
20 ude <stdlib.h>
21 c int slices = 16;
22 c int stacks = 16;
23 UT callback Handlers */
24
25 c void resize(int width, int height)
26 const float ar = (float) width / (float) height;
27
28 LViewport(0, 0, width, height);
29 glMatrixMode(GL_PROJECTION);
30 glLoadIdentity();
31 gluPerspective(45.0, ar, 0.1, 100.0);
```

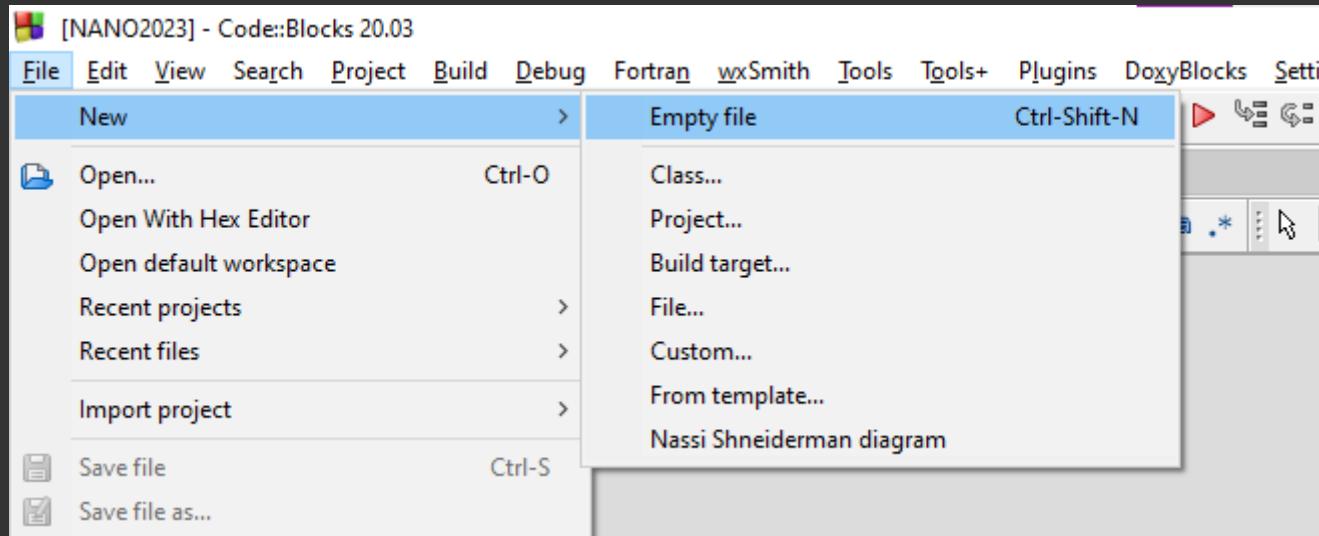
Logs & others

Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera

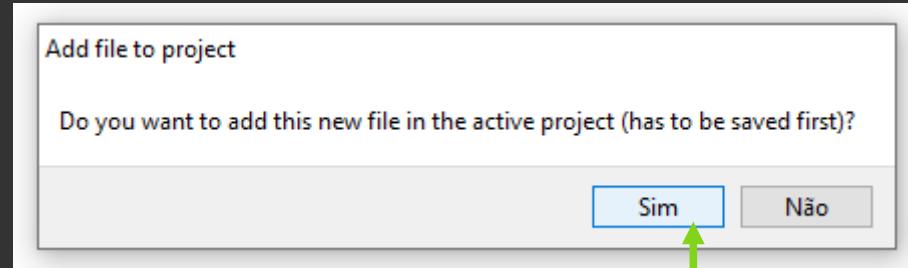
\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\My

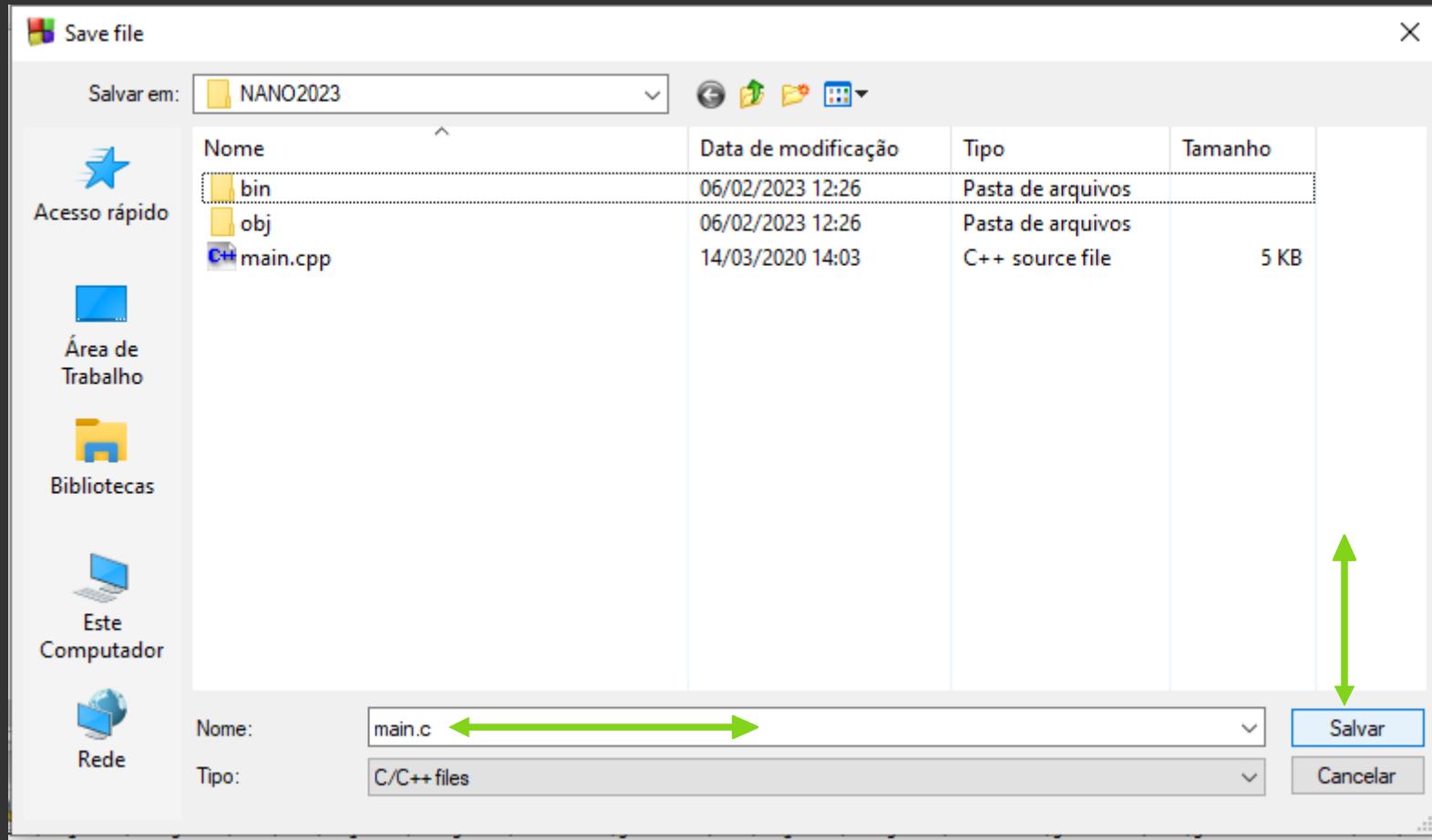
**Delete o arquivo .cpp
E crie um arquivo .c**



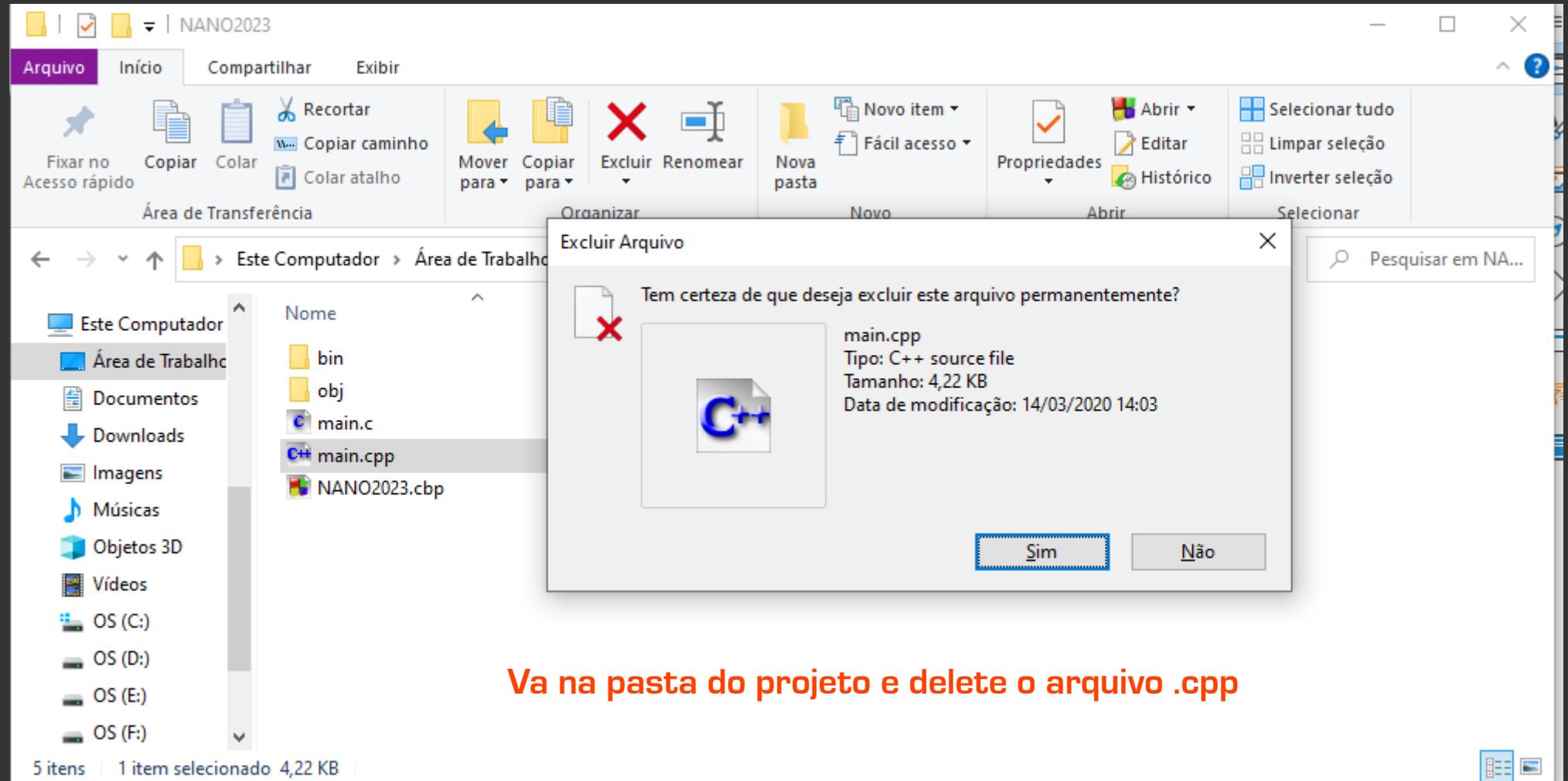


Crie o arquivo main.c





Coloque o nome de main.c e salve



Va na pasta do projeto e delete o arquivo .cpp

NANO2023

Arquivo Início Compartilhar Exibir

Fixar no Acesso rápido Copiar Colar Recortar Copiar caminho Colar atalho Mover para Copiar para Excluir Renomear Nova pasta Novo item Fácil acesso Propriedades Abrir Histórico Selecionar tudo Limpar seleção Inverter seleção

Área de Transferência Organizar Novo Abrir Selecionar

Este Computador > Área de Trabalho > C > NANO2023

Pesquisar

Nome	Data de modificação	Tipo	Tamanho
bin	06/02/2023 12:26	Pasta de arquivos	
obj	06/02/2023 12:26	Pasta de arquivos	
main.c	06/02/2023 12:28	C source file	1 KB
NANO2023.cbp	06/02/2023 12:26	project file	2 KB

Este Computador

Área de Trabalho

Documentos

Downloads

Imagens

Músicas

Objetos 3D

Vídeos

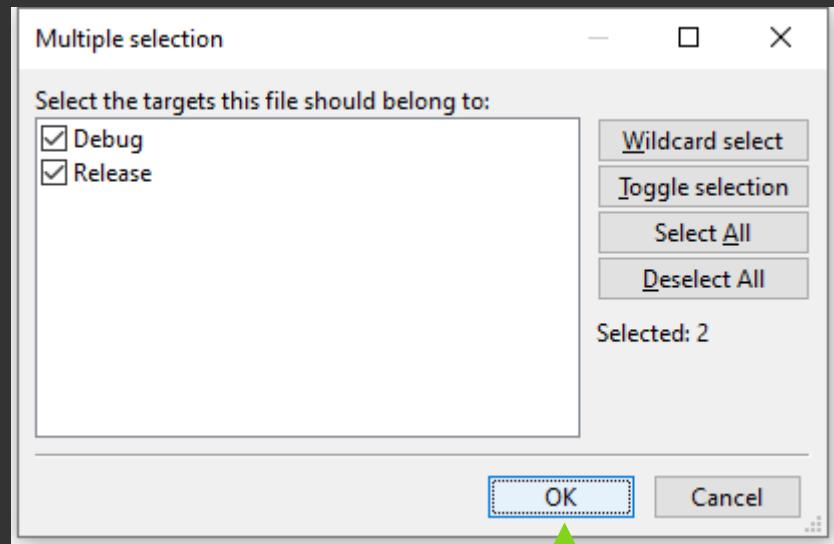
OS (C:)

OS (D:)

OS (E:)

OS (F:)

4 itens



main.c [NANO2023] - Code::Blocks 20.03

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

Management

Projects Files FSymbols

Workspace NANO2023 Sources main.c

main.c X

```
1
2
```

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

```
\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\NANO2023\bin\Debug\NANO2023.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\bin)
Process terminated with status -1073741510 (0 minute(s), 14 second(s))
```

C:\Users\brito\Desktop\C\NANO2023\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 1, Col 1, Pos 0 Insert Read/Write default 30°C Nublado 12:32

The screenshot shows the Code::Blocks 20.03 IDE interface. The title bar reads "*main.c [NANO2023] - Code::Blocks 20.03". The menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, and Help. The toolbar has various icons for file operations like Open, Save, Find, and Run. The status bar at the bottom shows "main(): int".

The left sidebar is titled "Management" and contains tabs for Projects, Files, and FSymbols. Under "Projects", there is a "Workspace" section with a "NANO2023" project expanded, showing a "Sources" folder containing "main.c".

The main editor window displays the code for "main.c":

```
1 int main()
2 {
3     glutI
4     (●) glutGetWindow(): int
5     (●) glutHideOverlay(): void
6 }
```

A code completion dropdown menu is open at the cursor position, listing several glut functions:

- (●) glutGetWindow(): int
- (●) glutHideOverlay(): void
- (●) glutHideWindow(): void
- (●) glutIconifyWindow(): void
- (●) glutIdleFunc(): void
- (●) glutIgnoreKeyRepeat(): void
- # glutInit
- (●) glutInit(): void
- (●) glutInitDisplayMode(): void
- (●) glutInitDisplayString(): void
- (●) glutInitWindowSize(): void

The function "glutInit():" is highlighted in blue, indicating it is the currently selected option.

Quando digitamos glut + primeira letra da função as opções aparecem

Todas os nomes das funções começam com glut

The screenshot shows the Code::Blocks IDE interface. The title bar reads "*main.c [NANO2023] - Code::Blocks 20.03". The menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, and Help. The toolbar has various icons for file operations like Open, Save, Find, and Run. The status bar shows "Debug". The code editor window displays the following C code:

```
int main()
{
    glutInit();
    return 0;
}
```

A tooltip or callout box is overlaid on the code editor, highlighting the `glutInit();` line and showing its documentation:

```
void glutInit(int* pargc, char** argv)
void glutInit_AT_EXIT_HACK(int* argcp, char** argv)
```

Deixando o ponteiro dentro dos parentesis da função aparecem os parametros
que devemos passar para a função funcionar e seu tipo de retorno
Nesse caso temos que passar um ponteiro pra int, e um ponteiro pra ponteiro
pra char

The screenshot shows the Code::Blocks 20.03 IDE interface. The title bar reads "*main.c [NANO2023] - Code::Blocks 20.03". The menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, and Help. The toolbar has various icons for file operations like Open, Save, Find, and Run. The status bar shows "Debug". The left sidebar is titled "Management" with tabs for Projects, Files, and FSymbols. Under "Projects", there is a "Workspace" node with a "NANO2023" project expanded, showing a "Sources" folder containing "main.c". The main code editor window is titled "*main.c" and contains the following C code:

```
1 int main(int C, char *V[])
2 {
3     glutInit(&C, V);
4     return 0;
5 }
6
```

Annotations in the image include two green arrows pointing upwards from the status bar area towards the toolbar, and a long green arrow pointing to the right from the line "glutInit(&C, V);".

Passamos os parametros necessarios a função

The screenshot shows the Code::Blocks IDE interface. The title bar reads "*main.c [NANO2023] - Code::Blocks 20.03". The menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, and Help. The toolbar has various icons for file operations like Open, Save, Find, and Run. The status bar at the bottom shows "main(int C, char* V[]) : int". The left sidebar is titled "Management" and contains tabs for Projects, Files, and FSymbols. Under the Projects tab, there is a "Workspace" section with a "NANO2023" project containing a "Sources" folder with "main.c". The main code editor window shows the following C code:

```
int main(int C, char *V[])
{
    glutInit(&C,V);
    // INICIALIZANDO
    glutCreateWindow();
    return 0;
}
```

A tooltip box appears over the "glutCreateWindow();" line, containing the function prototypes:

```
int glutCreateWindow(const char* title)
int glutCreateWindow_ATEXIT_HACK(const char* title)
```

Olhando os parametros que devem ser passados a função temos
Um const char* title que retorna um int
Nesse caso um endereço de memoria de algum texto que vamos escrever

*main.c [NANO2023] - Code::Blocks 20.03

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

<global> main(int C, char* V[]) : int

Management X *main.c X

Projects Files FSymbols

Workspace NANO2023 Sources main.c

```
1 int main(int C, char *V[])
2 {
3     glutInit(&C, V);
4
5     // INICIALIZANDO
6     glutCreateWindow("BASIC WINDOW OPENGL");
7     return 0;
8 }
```



main.c [NANO2023] - Code::Blocks 20.03

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

Management

Projects Files FSymbols

Workspace NANO2023 Sources main.c

main.c X

```
int main(int C, char *V[])
{
    glutInit(&C,V);

    // INICIALIZANDO
    glutCreateWindow ("BASIC WINDOW OPENGL");
    return 0;
}
```

Click em build
Repare no erro que da vamos
concerta

Logs & others

File	Line	Message
C:\Users\brit...		== Build: Debug in NANO2023 (compiler: GNU GCC Compiler) ==
C:\Users\brit...	3	In function 'main':
C:\Users\brit...	6	warning: implicit declaration of function 'glutInit' [-Wimplicit-function-declaration]
C:\Users\brit...		warning: implicit declaration of function 'glutCreateWindow' [-Wimplicit-function-decl...]
		== Build finished: 0 error(s), 2 warning(s) (0 minute(s), 0 second(s)) ==

C:\Users\britto\Desktop\C\NANO2023\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 6, Col 45, Pos 120 Insert Read/Write default 31°C Nublado 12:54

main.c [NANO2023] - Code::Blocks 20.03

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

<global>

Management

Projects Files FSymbols

Workspace NANO2023 Sources main.c

main.c

```
int main(int C, char *V[])
{
    glutInit(&C,V);

    // INICIALIZANDO
    glutCreateWindow ("BASIC WINDOW OPENGL");
    return 0;
}
```

stdio.h MAN PAGE

Agora de run e veja o erro

Logs & others

Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X Cscope X Debugger X Doxygen X

File	Line	Message
C:\Users\brit...		== Build: Debug in NANO2023 (compiler: GNU GCC Compiler) ==
C:\Users\brit...	3	In function 'main':
C:\Users\brit...	3	warning: implicit declaration of function 'glutInit' [-Wimplicit-function-declaration]
C:\Users\brit...	6	warning: implicit declaration of function 'glutCreateWindow' [-Wimplicit-function-decl...
		== Build finished: 0 error(s), 2 warning(s) (0 minute(s), 0 second(s)) ==
		== Run: Debug in NANO2023 (compiler: GNU GCC Compiler) ==

C:\Users\brito\Desktop\C\NANO2023\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 6, Col 45, Pos 120 Insert Read/Write default 31°C Nublado 12:57

A screenshot of the Code::Blocks IDE interface. The main window shows a C file named 'main.c' with code related to OpenGL window creation. A red arrow points from the text 'Agora de run e veja o erro' down to the 'Build messages' tab in the 'Logs & others' panel. Another red arrow points to the warning message in the log: 'warning: implicit declaration of function 'glutInit' [-Wimplicit-function-declaration]'.

*main.c [NANO2023] - Code::Blocks 20.03

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

Management X

Projects Files FSymbols

Workspace NANO2023 Sources main.c

*main.c X

```
1 #include <GL/
2
3 int main()
4 {
5     glut
6     // i
7     glut
8     retu
9
10
11 }
```

GL/freeglut.h
GL/freeglut_ext.h
GL/freeglut_std.h
GL/gl.h
GL/glaux.h
GL/glcorearb.h
GL/glext.h
GL/glu.h
GL/glut.h
GL/glxext.h
GL/wglext.h

*main.c [NANO2023] - Code::Blocks 20.03

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

Debug

<global>

Management

Projects Files FSymbols

Workspace

NANO2023

Sources

main.c

```
1 #include <GL/glut.h>
2
3 int main(int C, char *V[])
4 {
5     glutInit(&C,V);
6
7     // INICIALIZANDO
8     glutCreateWindow("BASIC WINDOW OPENGL");
9     return 0;
10 }
11
```

*main.c [NANO2023] - Code::Blocks 20.03

File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxy

<global>

Management X

Projects Files FSymbols

Workspace NANO2023 Sources main.c

*main.c X

```
1 #include <GL/|
2 #include <GL/freeglut.h
3 int main()
4 {
5     glut
6     GL/gl.h
7     // GL/glaux.h
8     GL/glcorearb.h
9     GL/glext.h
10    return 0;
11 }
```

GL/glu.h
GL/glut.h
GL/glxext.h
GL/wglext.h

*main.c [NANO2023] - Code::Blocks 20.03

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

<global>

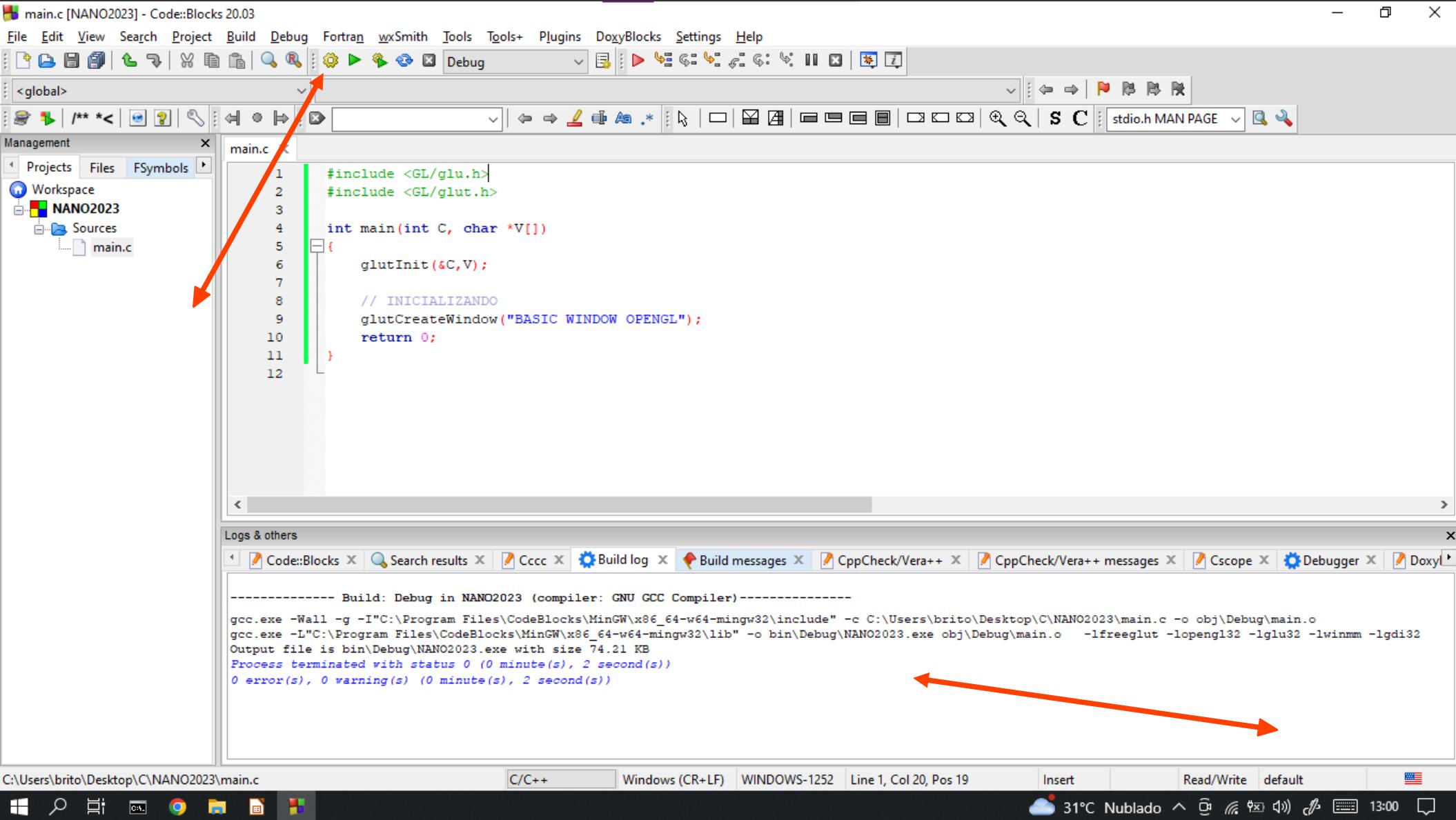
Management X

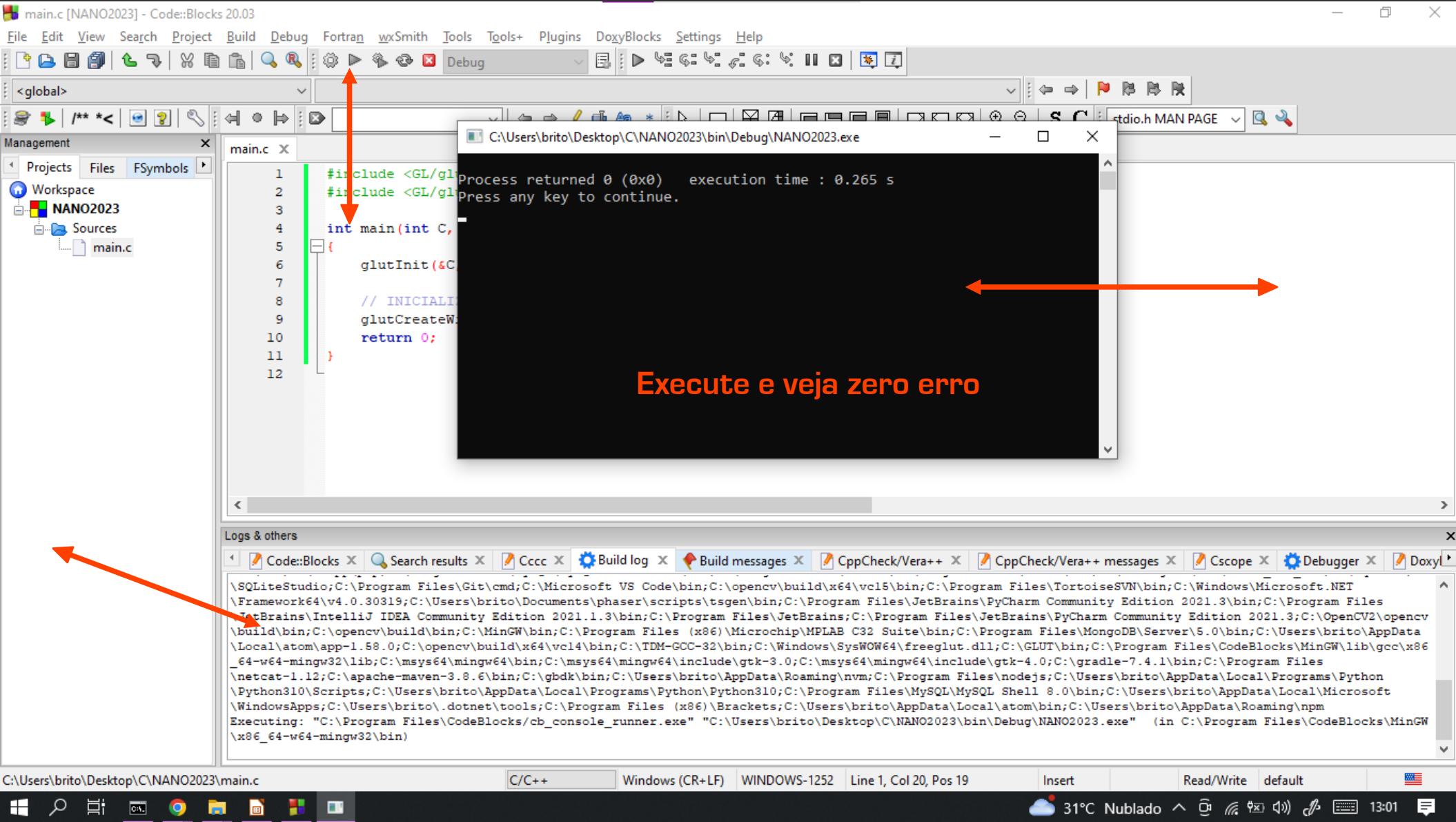
Projects Files FSymbols

Workspace NANO2023 Sources main.c

*main.c X

```
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 int main(int C, char *V[])
5 {
6     glutInit(&C, V);
7
8     // INICIALIZANDO
9     glutCreateWindow("BASIC WINDOW OPENGL");
10    return 0;
11 }
12
```





*main.c [NANO2023] - Code::Blocks 20.03

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

<global> main(int C, char* V[]) : int

Management X

Projects Files FSymbols

Workspace NANO2023 Sources main.c

1 #include <GL/glut.h>
2
3
4 int main(int C, char *V[])
5 {
6 glutInit(&C, V);
7
8 // INICIALIZANDO
9 glutCreateWindow("BASIC WINDOW OPENGL");
10
11 glutM
12 (●) glutInitWindowSize(): void
13 (●) glutInit_ATEXIT_HACK(): void
14 (●) glutJoystickFunc(): void
15 (●) glutKeyboardFunc(): void
16 (●) glutKeyboardUpFunc(): void
17 (●) glutLayerGet(): int
18 (●) glutLeaveGameMode(): void
19 (●) glutMainLoop(): void
20 (●) glutMenuStateFunc(): void
21 (●) glutMenuStatusFunc(): void
22 (●) glutMotionFunc(): void
23 (●) glutMouseFunc(): void

Logs & others

Code::Blocks

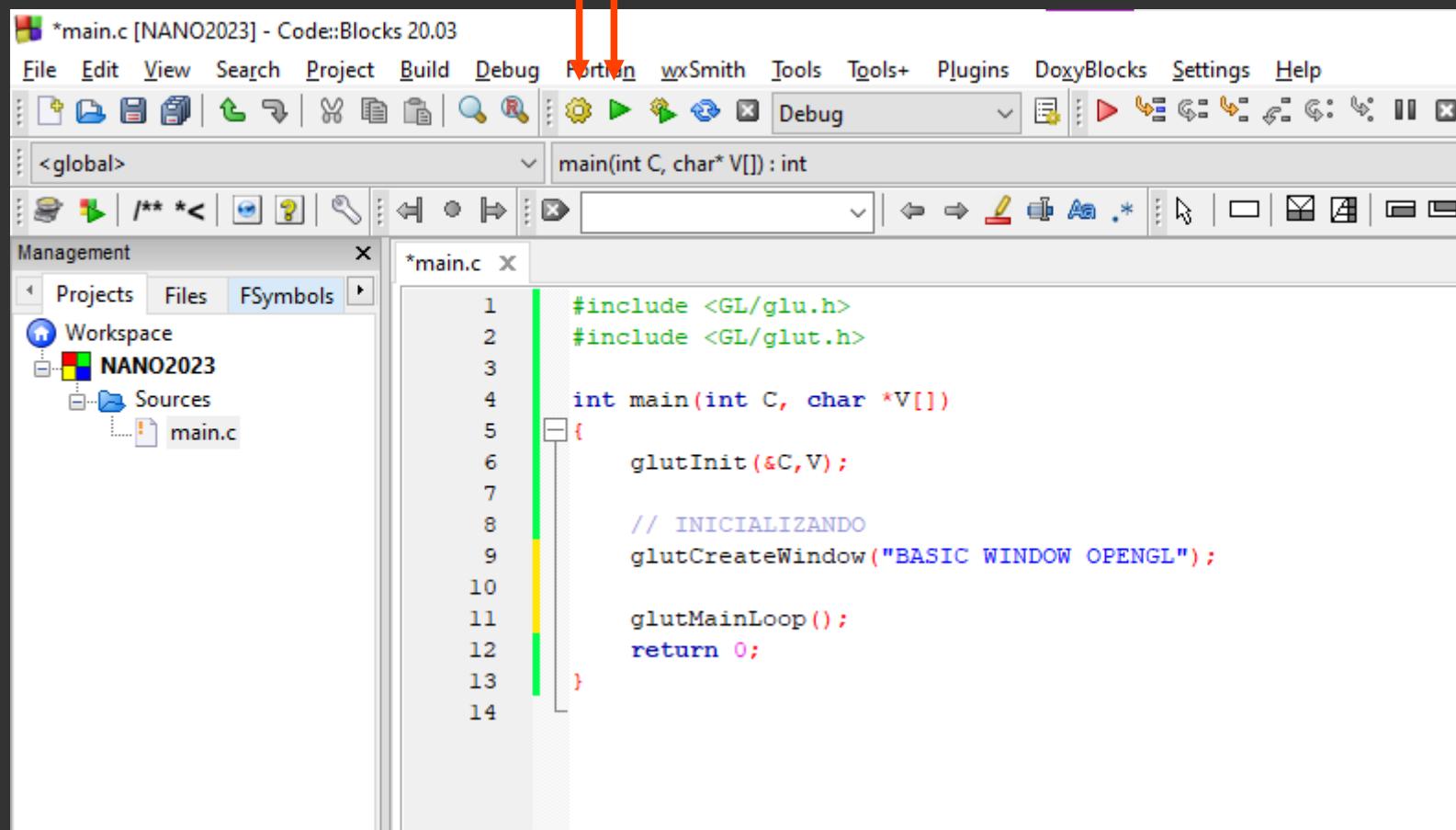
\JetBrains\IntelliJ IDEA 2023.2.3\bin\idea.exe C:\Users\brito\AppData\Local\Temp\jetbrains\IntelliJ IDEA 2023.2.3\bin\idea.exe

_64-w64-mingw32\lib;C:\msys64\mingw64\bin;C:\msys64\mingw64\include\gtk-3.0;C:\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\Python\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\P

The screenshot shows the Code::Blocks 20.03 IDE interface. The title bar reads "*main.c [NANO2023] - Code::Blocks 20.03". The menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, and Help. The toolbar has various icons for file operations like Open, Save, Find, and Build. The status bar at the bottom shows "main(int C, char* V[]) : int". The left sidebar is titled "Management" and contains tabs for Projects, Files, and FSymbols. Under the Workspace tab, there is a project named "NANO2023" which contains a source file "main.c". The main editor window displays the following C code:

```
1 #include <GL/glut.h>
2
3
4 int main(int C, char *V[])
5 {
6     glutInit(&C, V);
7
8     // INICIALIZANDO
9     glutCreateWindow("BASIC WINDOW OPENGL");
10
11     glutMainLoop();
12
13 }
14
```

Função que não retorna nada e recebe nada



The screenshot shows the Code::Blocks 20.03 IDE interface. The title bar displays "*main.c [NANO2023] - Code::Blocks 20.03". The menu bar includes File, Edit, View, Search, Project, Build, Debug, Run, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, and Help. The toolbar contains various icons for file operations like Open, Save, Find, and Build. The symbol viewer at the top shows the declaration "main(int C, char* V[]) : int". The left sidebar has a Management section with Projects, Files, and FSymbols tabs, showing a workspace named "NANO2023" with a "Sources" folder containing "main.c". The main code editor window titled "*main.c X" contains the following C code:

```
1 #include <GL/glut.h>
2 #include <GL/glut.h>
3
4 int main(int C, char *V[])
5 {
6     glutInit(&C, V);
7
8     // INICIALIZANDO
9     glutCreateWindow("BASIC WINDOW OPENGL");
10
11     glutMainLoop();
12
13 }
14
```

```
C:\Users\brito\Desktop\C\NANO2023\bin\Debug\NANO2023.exe
freeglut (C:\Users\brito\Desktop\C\NANO2023\bin\Debug\NANO2023.exe): ERROR: No display callback registered for window 1
Process returned 1 (0x1) execution time : 0.283 s
Press any key to continue.

Vamos resolver
REGISTRANDO UMA CALLBACK
```

*main.c [NANO2023] - Code::Blocks 20.03

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

<global> main(int C, char* V[]) : int

Management X

Projects Files FSymbols

Workspace NANO2023 Sources main.c

```
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 int main(int C, char *V[])
5 {
6     glutInit(&C, V);
7
8     // INICIALIZANDO
9     glutCreateWindow("BASIC WINDOW OPENGL");
10
11     glutDis
12    	glutDisplayFunc(): void
13 }
14
15
```

Logs & others

Code::Blocks X Search results X Ccc X Build log X Build messages X

The screenshot shows the Code::Blocks IDE interface. The title bar reads "*main.c [NANO2023] - Code::Blocks 20.03". The menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, and Help. The toolbar has various icons for file operations like Open, Save, Find, and Run. The status bar shows "main(int C, char* V[]) : int". The left sidebar has a "Management" tab with "Projects", "Files", and "FSymbols" options, showing a "Workspace" and a "NANO2023" project with a "Sources" folder containing "main.c". The main editor window titled "*main.c" contains the following C code:

```
1 #include <GL/glut.h>
2
3
4 int main(int C, char *V[])
5 {
6     glutInit(&C,V);
7
8     // INICIALIZANDO
9     glutCreateWindow ("BASIC WINDOW OPENGL");
10
11    glutDisplayFunc();
12    glutMainLoop(); void glutDisplayFunc(void(* callback)(void))
13    return 0;
14
15 }
```

A green arrow points from the explanatory text below to the line "void glutDisplayFunc(void(* callback)(void))".

Retorna nada e recebe uma função de callback que é um ponteiro void
Ponteiros voids assumem qualquer tipo primitivo
Note que toda essa função é apenas um parametro

The screenshot shows the Code::Blocks IDE interface. The title bar reads "*main.c [NANO2023] - Code::Blocks 20.03". The menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, and Help. The toolbar has various icons for file operations like Open, Save, Find, and Run. A "Debug" dropdown is open. The left sidebar has a "Management" tab with "Projects", "Files", and "FSymbols" options. Under "Workspace", there is a project named "NANO2023" with a "Sources" folder containing "main.c". The main editor window displays the following C code:

```
1 #include <GL/glut.h>
2
3
4 int main(int C, char *V[])
5 {
6     glutInit(&C, V);
7
8     // INICIALIZANDO
9     glutCreateWindow("BASIC WINDOW OPENGL");
10
11    glutDisplayFunc(Draw);
12    glutMainLoop();
13 }
14
15
```

A green double-headed vertical arrow is positioned next to the closing brace of the main function, indicating where a new function definition should be placed.

Como ela recebe uma função vamos escrever uma função pra ele
nesse caso a Draw(){}
}

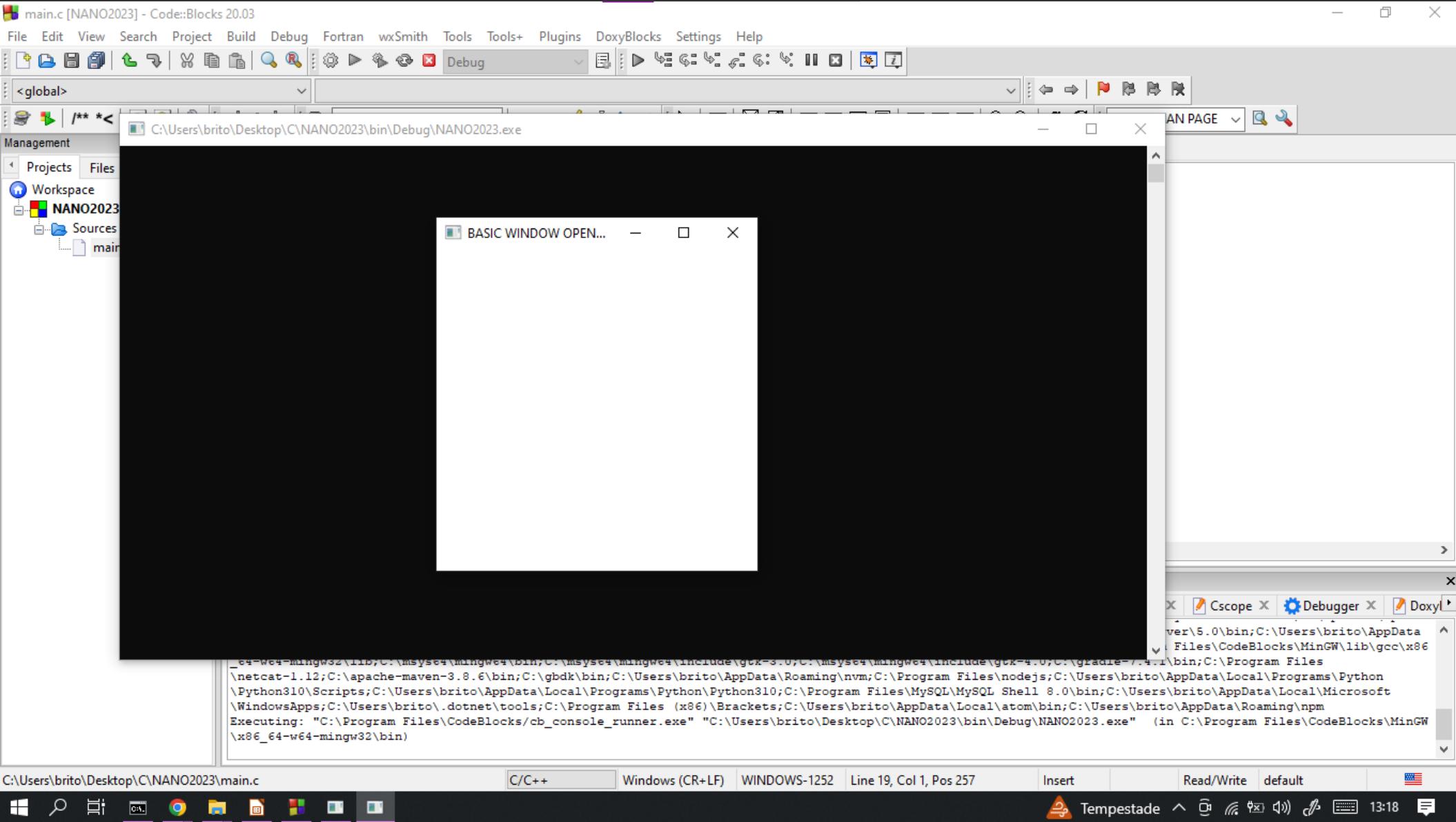
The screenshot shows the Code::Blocks IDE interface with the following details:

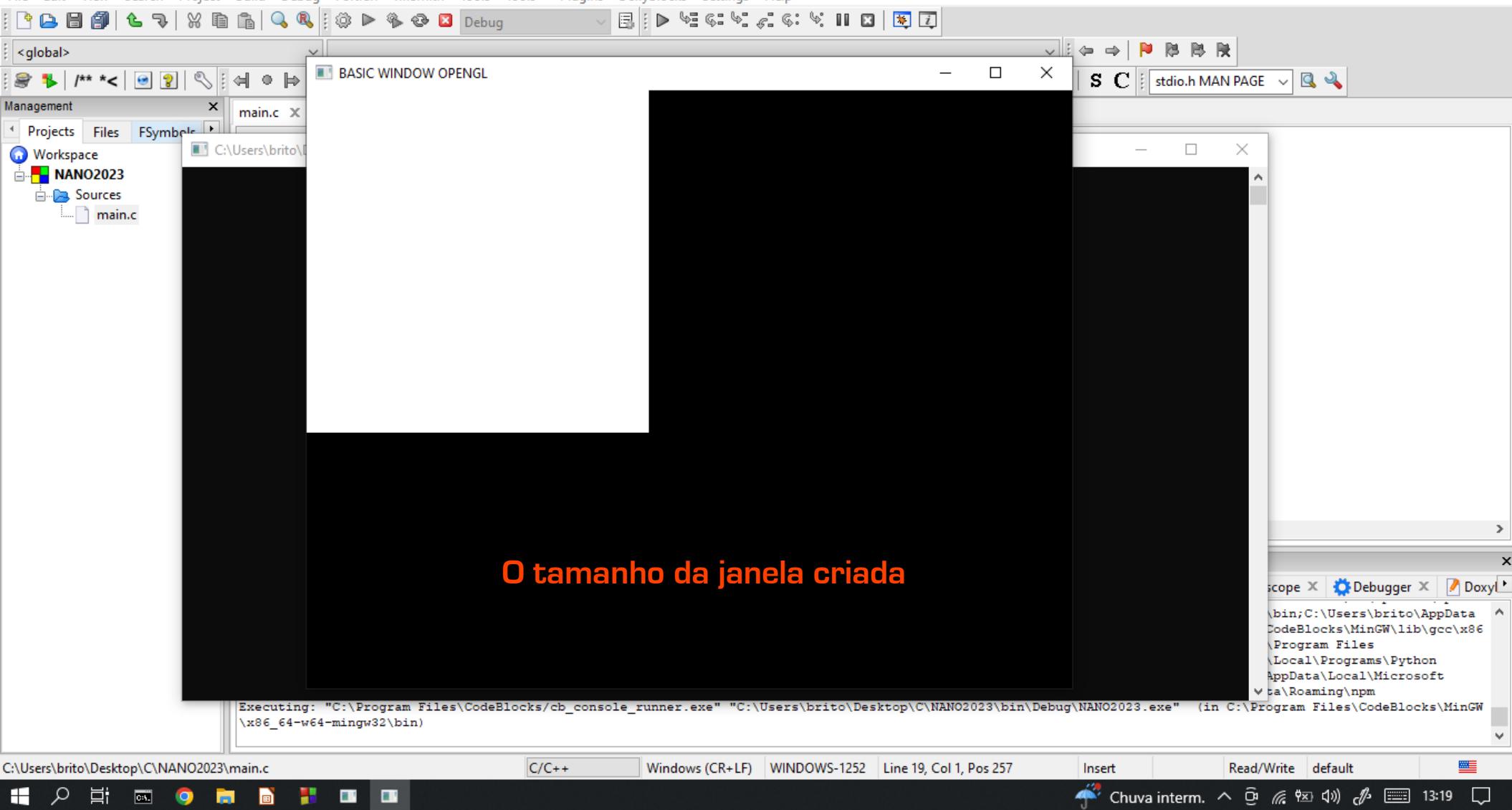
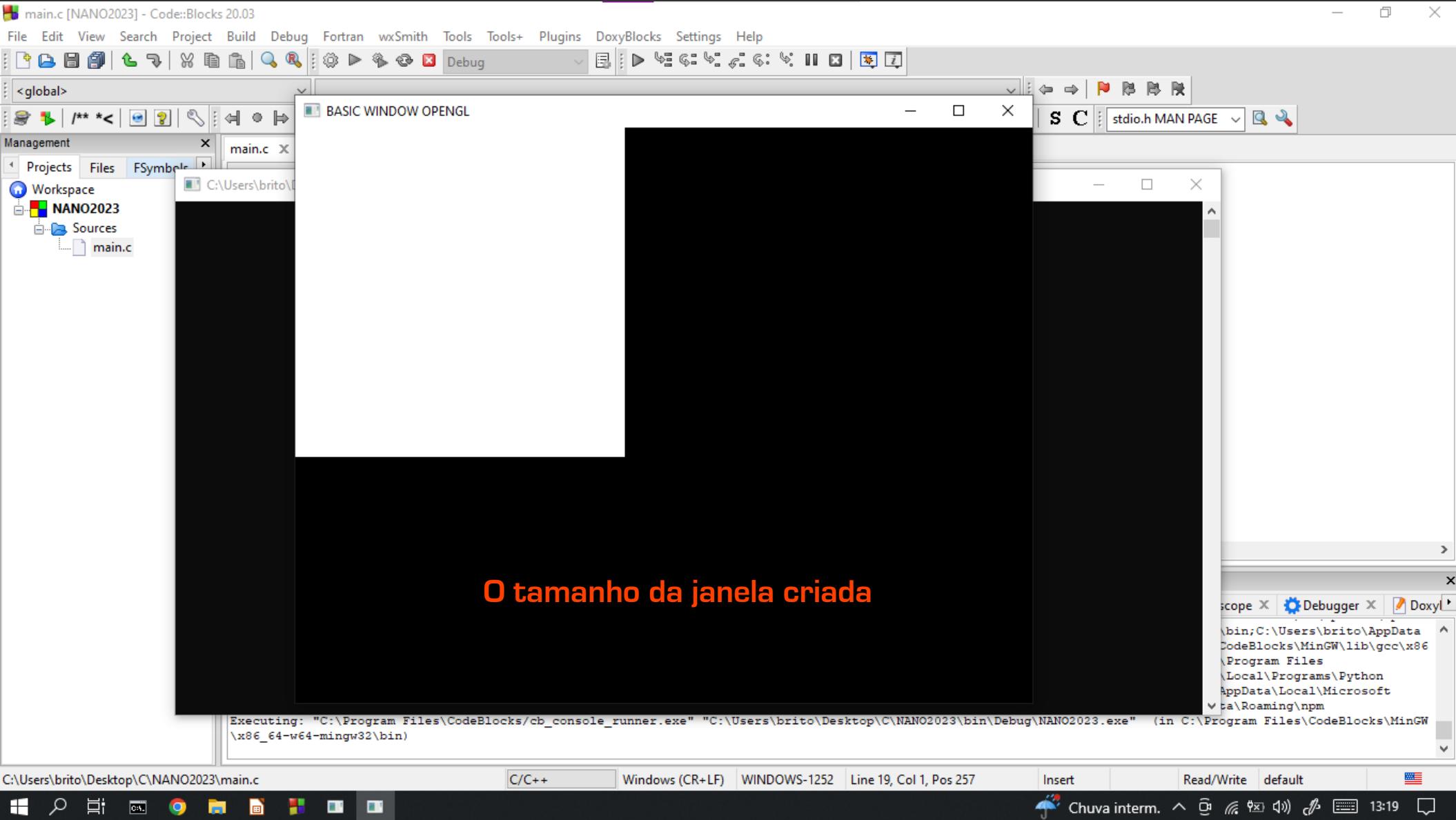
- Title Bar:** *main.c [NANO2023] - Code::Blocks 20.03
- Menu Bar:** File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, Help.
- Toolbar:** Includes icons for file operations like Open, Save, Find, and Run.
- Project Explorer (Management):** Shows a workspace named "NANO2023" containing a project named "Sources" which includes "main.c".
- Code Editor (main.c):** Displays the following C code:

```
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 void Draw()
5 {
6 }
7
8 int main(int C, char *V[])
9 {
10     glutInit(&C, V);
11
12     // INICIALIZANDO
13     glutCreateWindow("BASIC WINDOW OPENGL");
14
15     glutDisplayFunc(Draw);
16     glutMainLoop();
17     return 0;
18 }
```
- Annotations:** Three green arrows highlight specific areas:
 - A vertical double-headed arrow points up from the gutter between lines 1 and 2 to the menu bar.
 - A horizontal double-headed arrow spans the width of the code editor area, centered on line 6.
 - A vertical double-headed arrow points down from the gutter between lines 18 and 19 to the bottom status bar.

Por fim compile e execute

Escrevemos a função nos
moldes que deveríamos
escrever não recebendo nada
e não retornando nada





<global>

Management

Projects Files FSymbols

Workspace

NANO2023

Sources

main.c

BASIC WINDOW OPENGL

S C

stdio.h MAN PAGE

C:\Users\brito\

scope Debugger Doxy

\bin;C:\Users\brito\AppData\CodeBlocks\MinGW\lib\gcc\x86\Program Files\Local\Programs\Python\Local\Microsoft\ta\Roaming\npm

Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\NANO2023\bin\Debug\NANO2023.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\bin)



*main.c [NANO2023] - Code::Blocks 20.03

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



<global> main(int C, char* V[]) : int



Management

Projects Files FSymbols

Workspace
NANO2023
Sources
main.c

*main.c

```
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 void Draw()
5 {
6 }
7
8 int main(int C, char *V[])
9 {
10     glutInit(&C, V);
11     glutIni
12     # glutInit
13     (●) glutInit(): void
14     (●) glutInitDisplayMode(): void
15     (●) glutInitDisplayString(): void
16     (●) glutInitWindowPosition(): void
17     (●) glutInitWindowSize(): void
18     (●) glutInit_ATEXIT_HACK(): void
19 }
```

The screenshot shows the Code::Blocks 20.03 IDE interface. The title bar reads "*main.c [NANO2023] - Code::Blocks 20.03". The menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, and Help. The toolbar has various icons for file operations like Open, Save, Find, and Run. The status bar at the bottom shows "main(int C, char* V[]); int". The left sidebar is titled "Management" and contains "Projects", "Files", and "FSymbols" tabs, with "Workspace" and "NANO2023" selected. Under "Sources" in "NANO2023", there is a file named "main.c". The main code editor window displays the following C code:

```
#include <GL/glu.h>
#include <GL/glut.h>

void Draw()

int main(int C, char *V[])
{
    glutInit(&C,V);
    glutInitWindowSize();
    // INICIALIZANDO void glutInitWindowSize(int width, int height)
    glutCreateWindow("BASIC WINDOW OPENGL");

    glutDisplayFunc(Draw);
    glutMainLoop();
    return 0;
}
```

Não retorna nada e recebe dois numeros inteiros altura e largura da janela

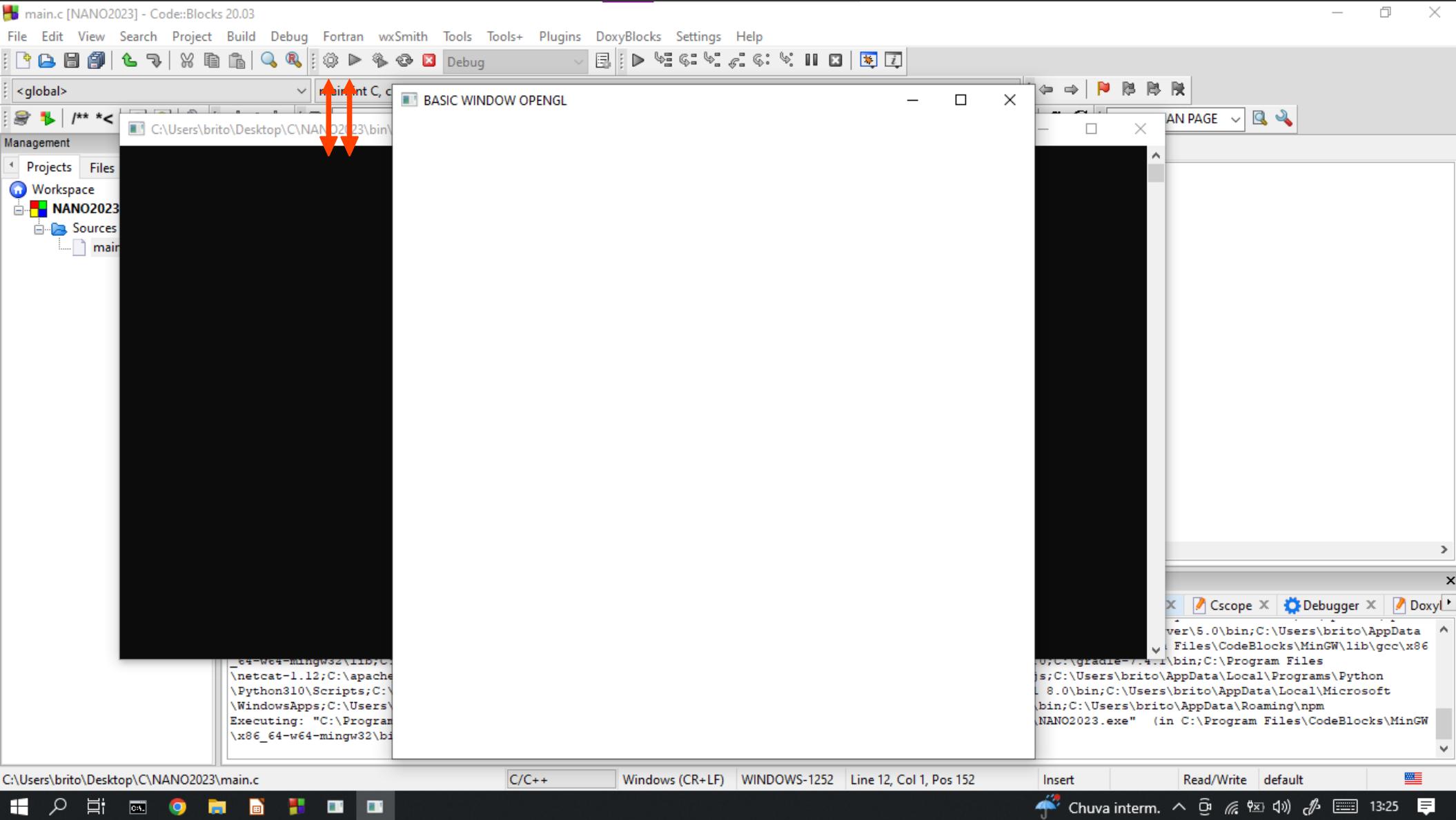
The screenshot shows the Code::Blocks IDE interface with the main.c file open in the code editor. The code implements a simple OpenGL application with a window of size 600x600.

```
#include <GL/glut.h>
#include <GL/glu.h>

void Draw()

int main(int C, char *V[])
{
    glutInit(&C, V);
    glutInitWindowSize(600, 600); ← Red arrow here
    |
    // INICIALIZANDO
    glutCreateWindow("BASIC WINDOW OPENGL");

    glutDisplayFunc(Draw);
    glutMainLoop();
    return 0;
}
```



*main.c [NANO2023] - Code::Blocks 20.03

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

<global> main(int C, char* V[]) : int

Management X

Projects Files FSymbols

Workspace NANO2023 Sources main.c

*main.c X

```
1 #include <GL/glut.h>
2
3
4 void Draw()
5 {
6
7 }
8 int main(int C, char *V[])
9 {
10     glutInit(&C,V);
11     glutInitWindowPosition();
12     glutIconifyWindow();
13     glutIdleFunc();
14     glutIgnoreKeyRepeat();
15     # glutInit
16     glutInitDisplayMode();
17     glutInitWindowSize();
18     glutInitDisplayString();
19     glutInitWindowPosition();
20 }
```

Logs & others

Code::Blocks X Search results X Ccc X Build Log X Build me

64-w64-mingw32\lib;C:\msys64\mingw64\bin;C:\msys64\mingw64\include\g

A screenshot of the Code::Blocks IDE interface. The central window displays a C program named 'main.c'. The cursor is positioned at the end of the line 'glutInitWindowPosition();'. A code completion dropdown menu is open, listing several member functions of the 'glutInit' class, all preceded by '(*)'. The function 'glutInitWindowPosition()' is highlighted in blue. The background of the code editor has vertical green and yellow highlighting bars.

*main.c [NANO2023] - Code::Blocks 20.03

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

Debug

<global>

main(int C, char* V[]); int

Management

Projects Files FSymbols

Workspace

NANO2023

Sources main.c

*main.c X

```
1 #include <GL/glut.h>
2
3
4 void Draw()
5 {
6
7 }
8 int main(int C, char *V[])
9 {
10     glutInit(&C, V);
11     glutInitWindowPosition();
12     glutInitWindowSize(600);
13
14     // INICIALIZANDO
15     glutCreateWindow("BASIC WINDOW OPENGL");
16
17     glutDisplayFunc(Draw);
18     glutMainLoop();
19     return 0;
20 }
```

Logs & others

Daqui pra frente não ficarei mostrando pois já sabemos como ler essas informações e como passa-las

*main.c [NANO2023] - Code::Blocks 20.03

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

Debug

<global>

main(int C, char* V[]) : int

Management

Projects Files FSymbols

Workspace NANO2023 Sources main.c

```
#include <GL/glu.h>
#include <GL/glut.h>

void Draw()

int main(int C, char *V[])
{
    glutInit(&C,V);
    glutInitWindowPosition(100,150);
    glutInitWindowSize(600,600);

    // INICIALIZANDO
    glutCreateWindow("BASIC WINDOW OPENGL");

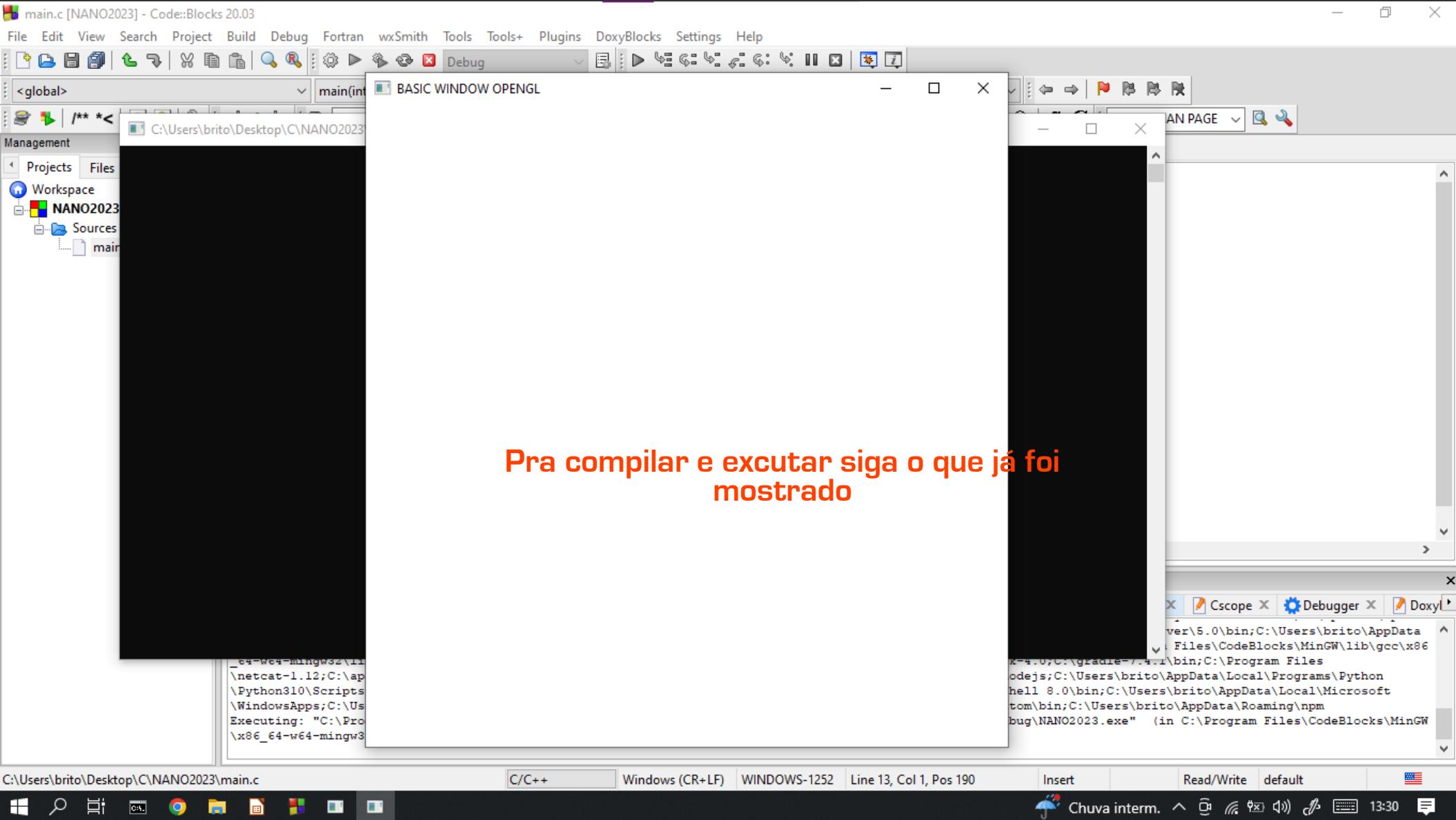
    glutDisplayFunc(Draw);
    glutMainLoop();
    return 0;
}
```

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 Doxy

```
_64-w64-mingw32\lib;C:\msys64\mingw64\bin;C:\msys64\mingw64\include\gtk-3.0;C:\msys64\mingw64\include\gtk-4.0;C:\gradle-7.4.1\bin;C:\Program Files\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\NANO2023\bin\Debug\NANO2023.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\bin)
Process terminated with status -1073741510 (0 minute(s), 3 second(s))
```

C:\Users\brito\Desktop\C\NANO2023\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 13, Col 1, Pos 190 Insert Modified Read/Write default Chuva interm. 13:30



**DEPOIS DE SAIR E VOLTAR ELE DA UM ERRO QUANDO FICA COM O LAYOUT EM PRETO
DARK**
É PRECISO RECOMPILAR TUDO DO ZERO
Apagar tudo e começar do zero mesmo

main.c [NANO2023-2] - Code::Blocks 20.03

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

Management

Projects Files FSymbols

Workspace NANO2023-2 Sources main.c

```
#include <GL/glu.h>
#include <GL/glut.h>

void Draw()

int main(int C, char *V[])
{
    glutInit(&C,V);
    glutInitWindowPosition(250,50);
    glutInitWindowSize(600,600);

    // INICIALIZANDO
    glutCreateWindow("BASIC WINDOW OPENGL");

    glutDisplayFunc(Draw);
    glutMainLoop();
    return 0;
}
```

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

```
\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\NANO2023-2\bin\Debug\NANO2023-2.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\bin)
Process terminated with status -1073741510 (0 minute(s), 2 second(s))
```

C:\Users\brito\Desktop\C\NANO2023-2\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 1, Col 1, Pos 0 Insert Read/Write default Chuva chegando 13:15

3-2
s
n.c

*main.c X

```
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 void Draw()
5 {
6
7 }
8 int main(int C, char *V[])
9 {
10     glutInit(&C, V);
11     glutInitWindowPosition(250, 50);
12     glutInitWindowSize(600, 600);
13     glutIni
14     # glutInit
15     (# glutInit()): void
16     (# glutInitDisplayMode()): void
17     (# glutInitDisplayString()): void
18     (# glutInitWindowPosition()): void
19     (# glutInitWindowSize()): void
20     (# glutInit_ATEXIT_HACK()): void
21 }
```

Logs & others

Code::Blocks X Search results X Ccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera-

```
\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\U
\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bi
\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\
```

Management

Projects Files FSymbols

Workspace

NANO2023-2

Sources main.c

*main.c

```
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 void Draw()
5 {
6
7 }
8 int main(int C, char *V[])
9 {
10     glutInit(&C, V);
11     glutInitWindowPosition(250, 50);
12     glutInitWindowSize(600, 600);
13     glutInitDisplayMode|
14     // INICIALIZANDO
15     glutCreateWindow("BASIC WINDOW OPENGL");
16
17     glutDisplayFunc(Draw);
18     glutMainLoop();
19     return 0;
```

olhe e mantenha isso!

Note o simbolo de interrogação

main(int C, char* V[]); int

```
#include <GL/glu.h>
#include <GL/glut.h>

void Draw()
{
}

int main(int C, char *V[])
```

OLHE TODA ESSA PARTE⁺

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

----- Run: Debug in NANO2023-2 (compiler: GNU GCC Compiler) -----

```
Checking for existence: C:\Users\brito\Desktop\C\NANO2023-2\bin\Debug\NANO2023-2.exe
Set variable: PATH=.;C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\lib;C:\Program Files\CodeBlocks\MinGW\bin;C:\Program Files\CodeBlocks\MinGW;C:\Program
Files\Java\jdk-17\bin;C:\Program Files\Microsoft\jdk-11.0.12.7-hotspot\bin;C:\Users\brito\AppData\Local\Programs\Python\Python39\Scripts;C:\Users\brito\AppData
\Local\Programs\Python\Python39;C:\Program Files (x86)\VMware\VMware Player\bin;C:\Program Files\Common Files\Oracle\Java\javapath;C:\Program Files (x86)\Common
Files\Oracle\Java\javapath;C:\Windows\System32;C:\Windows;C:\Windows\System32\wbem;C:\Windows\System32\WindowsPowerShell\v1.0;C:\Windows\System32\OpenSSH;C:
\Program Files\Microsoft SQL Server\130\Tools\Binn;C:\Program Files\Java\javafx-sdk-16\bin;C:\Program Files\Java\jdk-11.0.11\bin;C:\Program Files\Java\jre1.8.0_
291\bin;C:\xampp\php;C:\Program Files\MySQL\MySQL Server 8.0\bin;C:\Program Files\dotnet;C:\Program Files\CMake\bin;C:\wxwidgets\lib\vc142_x64_dll;C:\sqlite3;C:
\SQLiteStudio;C:\Program Files\Git\cmd;C:\Microsoft VS Code\bin;C:\opencv\build\x64\vc15\bin;C:\Program Files\TortoiseSVN\bin;C:\Windows\Microsoft.NET
\Framework64\v4.0.30319;C:\Users\brito\Documents\phaser\scripts\tsgen\bin;C:\Program Files\JetBrains\PyCharm Community Edition 2021.3\bin;C:\Program Files
\JetBrains\IntelliJ IDEA Community Edition 2021.1.3\bin;C:\Program Files\JetBrains;C:\Program Files\JetBrains\PyCharm Community Edition 2021.3;C:\OpenCV2\opencv
\build\bin;C:\opencv\build\bin;C:\MinGW\bin;C:\Program Files (x86)\Microchip\MLAB C32 Suite\bin;C:\Program Files\MongoDB\Server\5.0\bin;C:\Users\brito\AppData
\Local\atom\app-1.58.0;C:\opencv\build\x64\vc14\bin;C:\TDM-GCC-32\bin;C:\Windows\SysWOW64\freeglut.dll;C:\GLUT\bin;C:\Program Files\CodeBlocks\MinGW\lib\gcc\x86
_64-w64-mingw32\lib;C:\msys64\mingw64\bin;C:\msys64\mingw64\include\gtk-3.0;C:\msys64\mingw64\include\gtk-4.0;C:\gradle-7.4.1\bin;C:\Program Files
\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python
\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft
\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\NANO2023-2\bin\Debug\NANO2023-2.exe" (in C:\Program Files\CodeBlocks
\MinGW\x86_64-w64-mingw32\bin)
Process terminated with status -1073741510 (0 minute(s), 2 second(s))
```

The screenshot shows a software interface with a top toolbar containing various icons for file operations, search, and help. Below the toolbar is a project management window titled "Management". The "Projects" tab is selected, showing a project named "NANO2023-2" which contains a "Sources" folder with a file named "main.c". The main area of the interface is a code editor with a tab labeled "*main.c X". The code in the editor is as follows:

```
1 #include <GL/glut.h>
2
3 void Draw()
4 {
5 }
6
7
8 int main(int C, char *V[])
9 {
10     glutInit(&C, V);
11     glutInitWindowPosition(250, 50);
12     glutInitWindowSize(600, 600);
13     glutInitDisplayMode(GLUT_RGB | GLUT_SINGLE); ←
14     // INICIALIZANDO
15     glutCreateWindow("BASIC WINDOW OPENGL");
16
17     glutDisplayFunc(Draw);
18     glutMainLoop();
19     return 0;
20 }
21
22 // https://www.youtube.com/watch?v=wG_VaSr6a6c&t=1254s
23 // parada 20:55
24
```

A green vertical bar highlights the code from line 10 to line 13. A green arrow points to the line "glutInitDisplayMode(GLUT_RGB | GLUT_SINGLE);". A green plus sign is located at the end of the line "return 0;".

main.c [NANO2023-2] - Code::Blocks 20.03

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

Debug

<global> main(int C, char* V[]) : int

Management

Projects Files FSymbols

Workspace NANO2023-2 Sources main.c

#include <GL/glu.h>
#include <GL/glut.h>

void Draw()

{

}

int main(int C, char *V[])

{

glutInit(&C, V);
 glutInitWindowPosition(250, 50);
 glutInitWindowSize(600, 600);
 glutInitDisplayMode(GLUT_RGB | GLUT_SINGLE);
 // INICIALIZANDO
 glutCreateWindow("BASIC WINDOW OPENGL");

glutDisplayFunc(Draw);

glutMainLoop();

}

nenhum erro ao dar build!

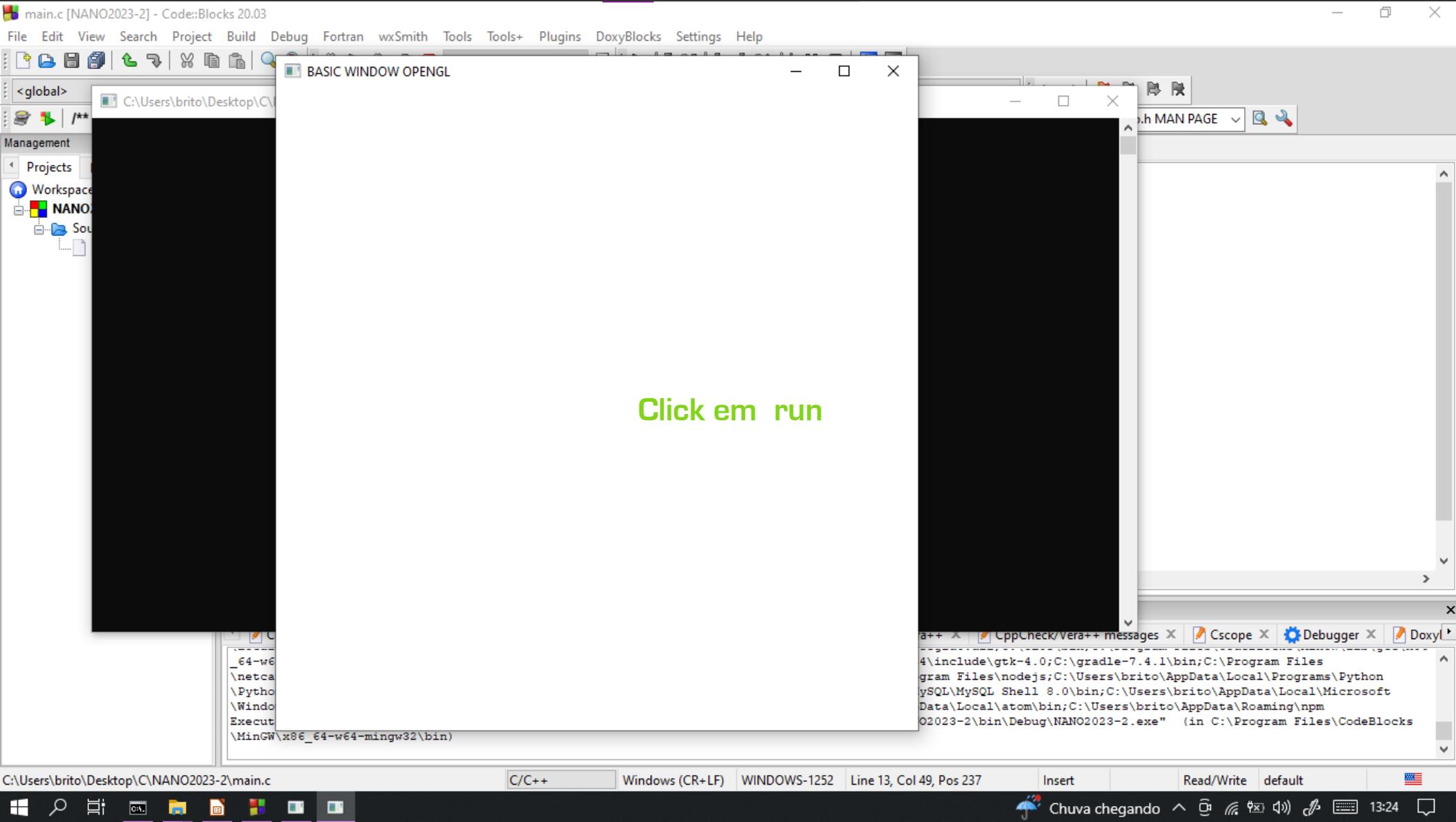
Logs & others

Code:Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X Cscope X Debugger X Doxy X

----- Build: Debug in NANO2023-2 (compiler: GNU GCC Compiler) -----
gcc.exe -Wall -g -I"C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\include" -c C:\Users\brito\Desktop\C\NANO2023-2\main.c -o obj\Debug\main.o
gcc.exe -L"C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\lib" -o bin\Debug\NANO2023-2.exe obj\Debug\main.o -lfreeglut -lopengl32 -lglu32 -lwinmm -lgdi32
Output file is bin\Debug\NANO2023-2.exe with size 75.55 KB
Process terminated with status 0 (0 minute(s), 1 second(s))
0 error(s), 0 warning(s) (0 minute(s), 1 second(s))

C:\Users\brito\Desktop\C\NANO2023-2\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 13, Col 49, Pos 237 Insert Read/Write default

Chuva chegando



*main.c [NANO2023-2] - Code::Blocks 20.03

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

Debug

<global>

main(int C, char* V[]) : int

Management

Projects Files FSymbols

Workspace NANO2023-2 Sources main.c

main.c

```
1 #include <GL/glut.h>
2
3
4 void Draw() // FUNÇÃO CR
5 {
6
7 }
8 int main(int C, char *V[])
9 {
10     glutInit(&C,V);
11     glutInitWindowPosition(250,50); // POSIÇÃO D
12     glutInitWindowSize(600,600); // TAMANHO E
13     glutInitDisplayMode(GLUT_RGB | GLUT_SINGLE); // CORES DA
14     // INICIALIZANDO
15     glutCreateWindow("BASIC WINDOW OPENGL"); // TÍTULO DA
16
17     glc
18     (●) glCallList(): void
19     (●) glCallLists(): void
20     (●) GLclampd
21     (●) GLclampf
22 }
```

Logs & others

Code:Blocks

\Python310\Scr... \WindowsApps\... Executing: "C:\... \MinGW\x86_64-v... Process termina

(●) glClear(): void
(●) glClearAccum(): void
(●) glClearColor(): void ←
(●) glClearDepth(): void
(●) glClearIndex(): void
(●) glClearStencil(): void
(●) glClipPlane(): void
(●) glColor3b(): void

Build messages

ams\Python\Python310;C:\Program Files (x86)\Brackets;C:\Users\... nner.exe" "C:\Users\brito\Desktop\... , 10 second(s))

```
0 int main(int c, char **v[])
1 {
2     glutInit(&C,V);
3     glutInitWindowPosition(250,50);           // POSIÇÃO DA JANELA
4     glutInitWindowSize(600,600);             // TAMANHO E LARGURA DA JANELA
5     glutInitDisplayMode(GLUT_RGB | GLUT_SINGLE); // CORES DA JANELA A COR PADRÃO É BRANCO PODEMOS MUDAR
6     // INICIALIZANDO
7     glutCreateWindow("BASIC WINDOW OPENGL"); // TITULO DA JANELA
8
9     glClearColor()
10    glutDisplayFunc(glClearColor(GLclampf red, GLclampf green, GLclampf blue, GLclampf alpha));
11    glutMainLoop();                         // FUNÇÃO OBRIGATÓRIA
12    return 0;
13
14 }
```

Recebe 3 parametros para red green e blue e um ultimo para alpha

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

<global> main(int C, char* V[]) : int

Management X

Projects Files FSymbols

Workspace NANO2023-2 Sources main.c

```
*main.c X
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA FUNÇÃO glutDisplayFunc
5 {
6 }
7
8 int main(int C, char *V[])
9 {
10     glutInit(&C,V); // POSIÇÃO DA JANELA
11     glutInitWindowPosition(250,50); // TAMANHO E LARGURA DA JANELA
12     glutInitWindowSize(600,600);
13     glutInitDisplayMode(GLUT_RGB | GLUT_SINGLE); // CORES DA JANELA A COR PADRÃO É BRANCO PODEMOS MUDAR
14     // INICIALIZANDO
15     glutCreateWindow("BASIC WINDOW OPENGL"); // TITULO DA JANELA
16
17     glClearColor(0,0,0,1); ←→
18     glutDisplayFunc(Draw);
19     glutMainLoop(); // FUNÇÃO OBRIGATORIA
20     return 0;
21 }
```

Logs & others

```
glutCreateWindow ("BASIC WINDOW OPENGL");           // TITULO DA JANELA  
  
glClearColor(0,0,0,1);                            // FUNÇÃO PARAS AS CORES DA JANELA  
glColor3f()  
glutDisp[void glColor3f(GLfloat red, GLfloat green, GLfloat blue)]  
glutMainLoop();          // FUNÇÃO OBRIGATÓRIA  
return 0;  
}
```

*main.c [NANO2023-2] - Code::Blocks 20.03

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

Debug main(int C, char* V[]) : int stdio.h MAN PAGE

Management X *main.c X

Projects Files FSymbols

Workspace NANO2023-2 Sources main.c

```
#include <GL/glut.h>
#include <GL/glu.h>

void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA FUNÇÃO glutDisplayFunc(Draw);

int main(int C, char *V[])
{
    glutInit(&C,V);
    glutInitWindowPosition(250,50); // POSIÇÃO DA JANELA
    glutInitWindowSize(600,600); // TAMANHO E LARGURA DA JANELA
    glutInitDisplayMode(GLUT_RGB | GLUT_SINGLE); // CORES DA JANELA A COR PADRÃO É BRANCO PODEMOS MUDAR
    // INICIALIZANDO
    glutCreateWindow("BASIC WINDOW OPENGL"); // TITULO DA JANELA

    glClearColor(0,0,0,1); // FUNÇÃO PARAS AS CORES DA JANELA
    glColor3f(1,0,0); // RECEBE VALORES FLOAT PARA DAR COR A JANELA
    glutDisplayFunc(Draw);
    glutMainLoop(); // FUNÇÃO OBRIGATORIA
    return 0;
}
```

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 Doxy X

\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\NANO2023-2\bin\Debug\NANO2023-2.exe" (in C:\Program Files\CodeBlocks)

*main.c [NANO2023-2] - Code::Blocks 20.03

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

<global> main(int C, char* V[]) : int

Management X

Projects Files FSymbols ▾

Workspace NANO2023-2

Sources main.c

```
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA FUNÇÃO glutDisplayFunc(Draw);
5 {
6 }
7
8 int main(int C, char *V[])
9 {
10     glutInit(&C,V); // POSIÇÃO DA JANELA
11     glutInitWindowPosition(250,50); // TAMANHO E LARGURA DA JANELA
12     glutInitWindowSize(600,600);
13     glutInitDisplayMode(GLUT_RGB | GLUT_SINGLE); // CORES DA JANELA A COR PADRÃO É BRANCO PODEMOS MUDAR
14     // INICIALIZANDO
15     glutCreateWindow("BASIC WINDOW OPENGL"); // TITULO DA JANELA
16
17     MyInit(); // CRIANDO NOSSA FUNÇÃO
18     glClearColor(0,0,0,1); // FUNÇÃO PARAS AS CORES DA JANELA
19     glColor3f(1,0,0); // RECEBE VALORES FLOAT PARA DAR COR A JANELA
20     glutDisplayFunc(Draw); // FUNÇÃO OBRIGATORIA
21     glutMainLoop();
22     return 0;
```

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

\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\CVNANO2023-2\bin\Debug\NANO2023-2.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\bin)
Process terminated with status -1073741510 (0 minute(s), 10 second(s))

```
15     glutCreateWindow("BASIC WINDOW OPENGL");      // TITULO DA JANELA
16
17     MyInit();                                     // CRIANDO NOSSA FUNÇÃO
18     glClearColor(0,0,0,1);                        // FUNÇÃO PARAS AS CORES DA JANELA
19     glColor3f(1,0,0);                            // RECEBE VALORES FLOAT PARA DAR COR A JANELA
20     glutDisplayFunc(Draw);
21     glutMainLoop();                             // FUNÇÃO OBRIGATORIA
22     return 0;
23
24 }
```

RECORDAMOS ESSAS DUAS FUNÇÕES E COLAMOS DENTRO DA NOSSA FUNÇÃO

*main.c [NANO2023-2] - Code::Blocks 20.03

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

Debug MyInit() : void stdio.h MAN PAGE

Management Projects Files FSymbols

Workspace NANO2023-2 Sources main.c



```
#include <GL/glu.h>
#include <GL/glut.h>

void MyInit()
{
    glClearColor(0,0,0,1);                                // FUNÇÃO PARAS AS CORES DA JANELA
    glColor3f(1,0,0);                                     // RECEBE VALORES FLOAT PARA DAR COR A JANELA

    void Draw()                                         // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA FUNÇÃO glutDisplayFunc(Draw);

    int main(int C, char *V[])
    {
        glutInit(&C,V);                                 // POSIÇÃO DA JANELA
        glutInitWindowPosition(250,50);                  // TAMANHO E LARGURA DA JANELA
        glutInitWindowSize(600,600);                     // CORES DA JANELA A COR PADRÃO É BRANCO PODEMOS MUDAR
        // INICIALIZANDO
        glutCreateWindow("BASIC WINDOW OPENGL");         // TITULO DA JANELA

        MyInit();                                       // CRIANDO NOSSA FUNÇÃO
    }
}
```

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 Doxy

```
\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft
\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm
Executing: "C:\Program Files\CodeBlocks\cb console runner.exe" "C:\Users\brito\Desktop\CNANO2023-2\bin\Debug\NANO2023-2.exe" (in C:\Program Files\CodeBlocks)
```

*main.c [NANO2023-2] - Code::Blocks 20.03

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

Debug Draw() : void stdio.h MAN PAGE

<global>

Management

Projects Files FSymbols

Workspace NANO2023-2 Sources main.c

```
#include <GL/glu.h>
#include <GL/glut.h>

void MyInit()
{
    glClearColor(0,0,0,1);                                // FUNÇÃO PARA AS CORES DA JANELA
    glColor3f(1,0,0);                                    // RECEBE VALORES FLOAT PARA DAR COR A JANELA

    void Draw()                                         // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA FUNÇÃO glutDisplayFunc(Draw);
    {
        glClear(GL_COLOR_BUFFER_BIT);                   // LIMPPANDO O BUFFER DA COR DE BACKGROUND
    }

    int main(int C, char *V[])
    {
        glutInit(&C,V);
        glutInitWindowPosition(250,50);                // POSIÇÃO DA JANELA
        glutInitWindowSize(600,600);                     // TAMANHO E LARGURA DA JANELA
        glutInitDisplayMode(GLUT_RGB | GLUT_SINGLE);   // CORES DA JANELA A COR PADRÃO É BRANCO PODEMOS MUDAR
        // INICIALIZANDO
        glutCreateWindow("BASIC WINDOW OPENGL");       // TITULO DA JANELA
        MyInit();                                       // CRIANDO NOSSA FUNÇÃO
        glutDisplayFunc(Draw);
        glutMainLoop();                                 // FUNÇÃO OBRIGATORIA
        return 0;
    }
}
```

Logs & others

Code::Blocks X Search results X Cccccc X Build log X Build messages X ConCheck/Vera++ X ConCheck/Vera++ messages X Csccccc X Debugger X Doxygen X

```
9     void Draw()
10    {
11        glClear(GL_COLOR_BUFFER_BIT);
12        glF
13    } (●) glFeedbackBuffer(): void
14    in (●) glFinish(): void
15    {
16        GLfloat
17        (●) glFlush(): void
18        (●) glFogf(): void
19        (●) glFogfv(): void
20        (●) glFogi(): void
21        (●) glFogiv(): void
22        (●) glFrontFace(): void
23        (●) glFrustum(): void
24
| GLUT_SINGLE | "OPENGL");
others
```

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

Draw() : void

Management

Projects Files FSymbols

Workspace NANO2023-2 Sources main.c

```
#include <GL/glu.h>
#include <GL/glut.h>

void MyInit()
{
    glClearColor(0,0,0,1); // FUNÇÃO PARA AS CORES DA JANELA
    glColor3f(1,0,0); // RECEBE VALORES FLOAT PARA DAR COR A JANELA

}

void Draw()
{
    glClear(GL_COLOR_BUFFER_BIT); // LIMPANDO O BUFFER DA COR DE BACKGROUND
    glFlush(); // ATUALIZA OS PIXELS

}

int main(int C, char *V[])
{
    glutInit(&C,V);
    glutInitWindowPosition(250,50); // POSIÇÃO DA JANELA
    glutInitWindowSize(600,600); // TAMANHO E LARGURA DA JANELA
    glutInitDisplayMode(GLUT_RGB | GLUT_SINGLE); // CORES DA JANELA A COR PADRÃO É BRANCO PODEMOS MUDAR
    // INICIALIZANDO
    glutCreateWindow("BASIC WINDOW OPENGL"); // TÍTULO DA JANELA
    MyInit(); // CRIANDO NOSSA FUNÇÃO
    glutDisplayFunc(Draw);
    glutMainLoop(); // FUNÇÃO OBRIGATÓRIA
}
```

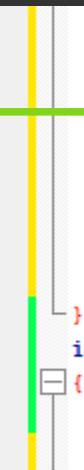
Logs & others

CodeBlocks Search results Ccc Build log Build messages CppCheck/Vera CppCheck/Vera + messages CcConsole Debugger Devil

```
9   void Draw()                                // FUNÇÃO CRIADA PARA ATENDER
10  {
11      glClear(GL_COLOR_BUFFER_BIT);           // LIMPPANDO O BUFFER DA COR
12
13      /** DESENHANDO UM RETANGULO **/
14      glVertex2d();
15      glFlush(); void glVertex2d(GLdouble x, GLdouble y) //ATUALIZA OS PIXELS
16  }
17  int main(int C, char *V[])
18  {
19      glutInit(&C,V);
20      glutInitWindowPosition(250,50);          // POSIÇÃO DA JANELA
21      glutCreateWindow("500x500");             // TITULO E TAMANHO DA TELA
```

```
10  {
11      glClear(GL_COLOR_BUFFER_BIT);           // LIMPPANDO O BUFFER DA COR DE BACKGROUND
12
13      /** DESENHANDO UM RETANGULO **/
14      glVertex2d(-0.5, 0.5);                // CADA PAR DE VALOR REPRESENTA AS COORDENADAS NO PLANO CARTESIANO
15      glVertex2d( 0.5, 0.5);
16      glVertex2d( 0.5,-0.5);
17      glVertex2d(-0.5,-0.5);
18      glFlush();                           // ATUALIZA OS PIXELS
19  }
20  int main(int C, char *V[])
21  {
22      glutInit(&C,V);
23      glutInitWindowPosition(250,50);        // POSIÇÃO DA JANELA
```

```
11     glClear(GL_COLOR_BUFFER_BIT);           // LIMPFANDO O BUFFER DA COR DE BACKGROUND
12
13     /** DESENHANDO UM RETANGULO **/
14     glBegin();                           // INICIA O RETANGULO
15     glVertex2d(-0.5, 0.5);              // CADA PAR DE VALOR REPRESENTA AS COORDENADAS NO PLANO CARTESIANO
16     glVertex2d( 0.5, 0.5);
17     glVertex2d( 0.5,-0.5);
18     glVertex2d(-0.5,-0.5);
19     glFlush();                          // ATUALIZA OS PIXELS
20 }
21 int main(int C, char *V[])
22 {
23     glutInit(&C,V);
24     glutInitWindowPosition(250,50);      // POSIÇÃO DA JANELA
```



```
12
13     /** DESENHANDO UM RETANGULO ***/
14     glBegin();                                // INICIA O RETANGULO
15     glVertex2d(-0.5, 0.5);                    // CADA PAR DE VALOR REPRESENTA AS COORDENADAS NO PLANO CARTESIANO
16     glVertex2d( 0.5, 0.5);
17     glVertex2d( 0.5,-0.5);
18     glVertex2d(-0.5,-0.5);
19     glEnd();                                  // TERMINA O RETANGULO
20     glFlush();                                // ATUALIZA OS PIXELS
21 }
22 int main(int C, char *V[])
23 {
```



```
/** DESENHANDO UM RETANGULO ***/
glBegin(GL_POLYGON);
glVertex3f(0.0f, 0.0f, 0.0f);
glVertex3f(1.0f, 0.0f, 0.0f);
glVertex3f(1.0f, 1.0f, 0.0f);
glVertex3f(0.0f, 1.0f, 0.0f);
glEnd();
glFlush();
}

int main(int argc, char *argv[])
{
    glutInit(&argc, argv);
    glutCreateWindow("Retângulo");
    glutDisplayFunc(display);
    glutMainLoop();
}
```

GL_PIXEL_MAP_I_TO_R_SIZE
GL_PIXEL_MAP_R_TO_R
GL_PIXEL_MAP_R_TO_R_SIZE
GL_PIXEL_MAP_S_TO_S
GL_PIXEL_MAP_S_TO_S_SIZE
GL_PIXEL_MODE_BIT
GL_POINT
GL_POINTS
GL_POINT_BIT
GL_POINT_SIZE
GL_POINT_SIZE_GRANULARITY
GL_POINT_SIZE_RANGE

D:\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\

*main.c [NANO2023-2] - Code::Blocks 20.03

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

Management

Projects Files FSymbols

Workspace NANO2023-2 Sources main.c

Draw() : void

include <GL/glut.h>

#include <GL/glut.h>

void MyInit()

{ glClearColor(0,0,0,1); glColor3f(1,0,0); }

// FUNÇÃO PARA AS CORES DA JANELA
// RECEBE VALORES FLOAT PARA DAR COR A JANELA

void Draw()

{ glClear(GL_COLOR_BUFFER_BIT);

// LIMPANDO O BUFFER DA COR DE BACKGROUND

/* DESENHANDO UM RETÂNGULO */

glBegin(GL_POINTS);
glVertex2d(-0.5, 0.5);
glVertex2d(0.5, 0.5);
glVertex2d(0.5,-0.5);
glVertex2d(-0.5,-0.5);
glEnd();
glFlush();

// INICIA O RETÂNGULO
// CADA PAR DE VALOR REPRESENTA AS COORDENADAS NO PLANO CARTESIANO

// TERMINA O RETÂNGULO
// ATUALIZA OS PIXELS

int main(int C, char *V[])

{ glutInit(&C,V);

POR FIM COMPILE E EXECUTE

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

\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm

Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\NANO2023-2\bin\Debug\NANO2023-2.exe" (in C:\Program Files\CodeBlocks\MinGWx86_64-w64-mingw32\bin)

Process terminated with status -1073741510 (0 minute(s) 10 second(s))

C:\Users\brito\Desktop\C\NANO2023-2\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 14, Col 50, Pos 570 Insert Modified Read/Write default Chuva chegando ^ 13:54

main.c [NANO2023-2] - Code::Blocks 20.03

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

C:\Users\brito\Desktop\C\NANO2023-2\main.c

BASIC WINDOW OPENGL

stdio.h MAN PAGE

CONTRAPORTADA

OUTRA FUNÇÃO glutDisplayFunc (Draw);

DAS NA TERRA CERTA ENO

CONFIGURAMOS UMA JANELA DE COR PRETA

CPP C++ CppCheck/Vera++ messages Cscope Debugger Doxygen

\bin;C:\Program Files\MongoDB\Server\5.0\bin;C:\Users\brito\AppData\Local\Temp\glut.dll;C:\GLUT\bin;C:\Program Files\CodeBlocks\MinGW\lib\gcc\x86_64\include\gtk-4.0;C:\gradle-7.4.1\bin;C:\Program Files\gram Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python\ySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\Windows\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm\Q2023-2\bin\Debug\NANO2023-2.exe" (in C:\Program Files\CodeBlocks

C/C++ Windows (CR+LF) WINDOWS-1252 Line 14, Col 50, Pos 565 Insert Read/Write default

Chuva chegando

```
/** DESENHANDO UM RETANGULO */
glPoi
(●) glPassThrough(): void
(●) glPixelMapfv(): void
(●) glPixelMapuiv(): void
(●) glPixelMapusv(): void
(●) glPixelStoref(): void
(●) glPixelStorei(): void
(●) glPixelTransferf(): void
(●) glPixelTransferi(): void
(●) glPixelZoom(): void
(●) glPointSize(): void
(●) glPolygonMode(): void
(●) glPolygonOffset(): void
```

Adicionando o tamanho dos pontos

The screenshot shows the Code::Blocks IDE interface with the following details:

- Title Bar:** *main.c [NANO2023-2] - Code::Blocks 20.03
- Menu Bar:** File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, Help
- Toolbar:** Includes icons for file operations, search, and build.
- Project Explorer:** Management panel showing Projects, Files, FSymbols, Workspace, and NANO2023-2 project with Sources and main.c selected.
- Code Editor:** Displays the main.c file content. The code initializes OpenGL and draws a red rectangle.
- Code Editor Annotations:** Two green arrows highlight specific areas:
 - A vertical double-headed arrow between the line numbers and the code area.
 - A horizontal double-headed arrow spanning the width of the code editor.
- Logs & others:** A tab bar at the bottom with various logs and messages, including the output of the build process.
- Build Log Output:** Shows the command run and its status.

```
#include <GL/glu.h>
#include <GL/glut.h>

void MyInit()
{
    glClearColor(0,0,0,1);
    glColor3f(1,0,0);
}

void Draw()
{
    glClear(GL_COLOR_BUFFER_BIT);

    /* DESENHANDO UM RETANGULO */
    glPointSize(5);
    glBegin(GL_POINTS);
    glVertex2d(-0.5, 0.5);
    glVertex2d( 0.5, 0.5);
    glVertex2d( 0.5,-0.5);
    glVertex2d(-0.5,-0.5);
    glEnd();
    glFlush();
}

// FUNÇÃO PARA AS CORES DA JANELA
// RECEBE VALORES FLOAT PARA DAR COR A JANELA

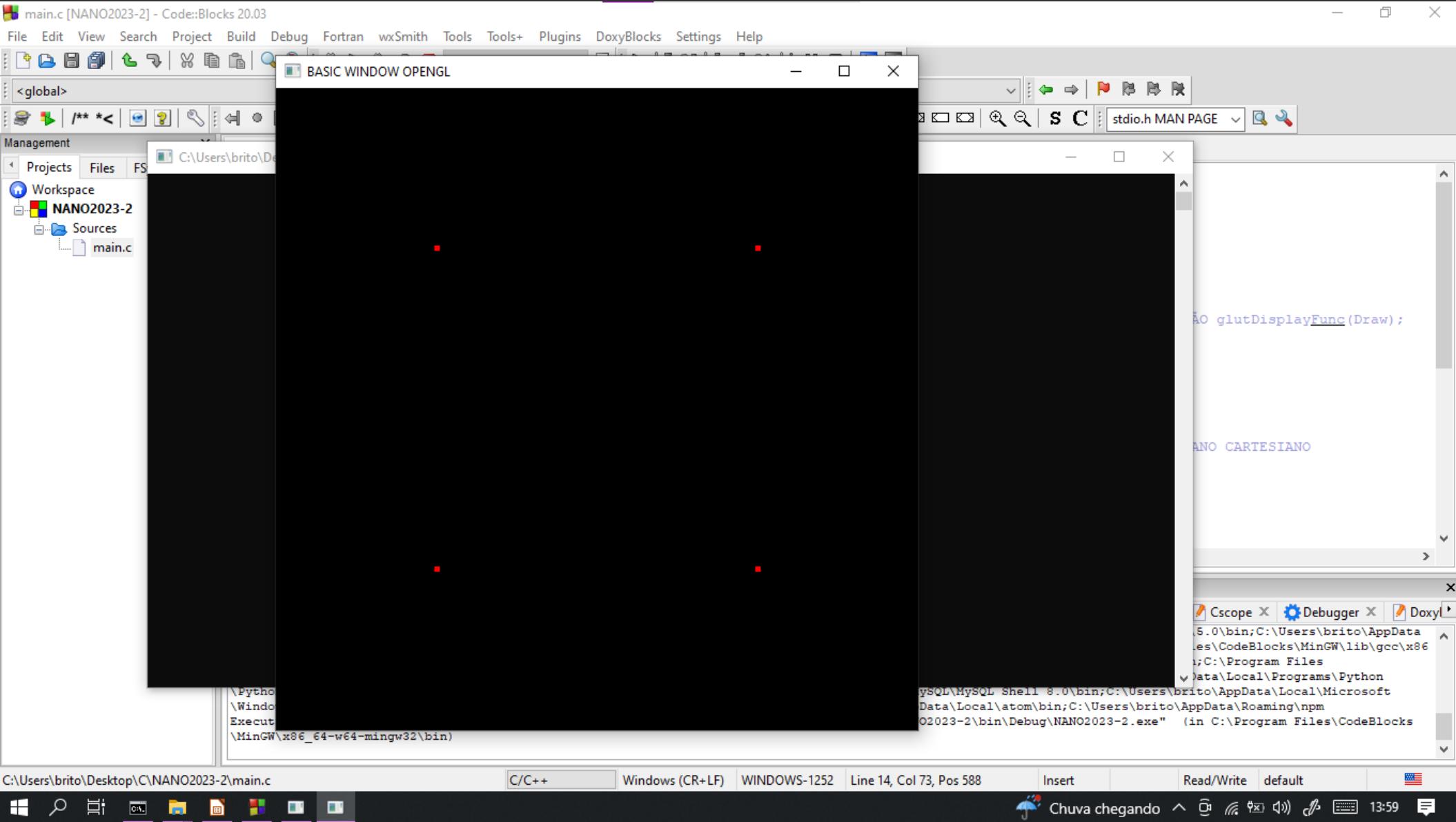
// FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA FUNÇÃO glutDisplayFunc(Draw);

// LIMPPANDO O BUFFER DA COR DE BACKGROUND

// TAMANHO DO RETANGULO
// INICIA O RETANGULO
// CADA PAR DE VALOR REPRESENTA AS COORDENADAS NO PLANO CARTESIANO

// TERMINA O RETANGULO
// ATUALIZA OS PIXELS
```

```
_64-w64-mingw32\lib;C:\msys64\mingw64\bin;C:\msys64\mingw64\include\gtk-3.0;C:\msys64\mingw64\include\gtk-4.0;C:\gradle-7.4.1\bin;C:\Program Files\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\NANO2023-2\bin\Debug\NANO2023-2.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\bin)
Process terminated with status -1073741510 (0 minute(s), 6 second(s))
```



```
8 }  
9     void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA FUNÇÃO glutDisplayF  
10 {  
11     glClear(GL_COLOR_BUFFER_BIT); // LIMPANDO O BUFFER DA COR DE BACKGROUND  
12  
13     /** DESENHANDO UM RETANGULO **/  
14     //glPointSize(5); // TAMANHO DO RETANGULO  
15     glBegin(GL_LINES); // INICIA O RETANGULO  
16     glVertex2d(-0.5, 0.5); // CADA PAR DE VALOR REPRESENTA AS COORDENADAS NO PLANO CARTESIANO  
17     glVertex2d( 0.5, 0.5);  
18     glVertex2d( 0.5,-0.5);  
19     glVertex2d(-0.5,-0.5);  
20     glEnd(); // TERMINA O RETANGULO  
21     glFlush(); // ATUALIZA OS PIXELS
```

... & others

Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X Cscope X Debug

COMENTE OU EXCLUA A LINHA DE CIMA E VAMOS DESENHAR LINES

*main.c [NANO2023-2] - Code::Blocks 20.03

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

Draw j: void

Management

Projects Files FSymbols

Workspace NANO2023-2 Sources main.c

#include <GL/glut.h>

void MyInit()

{

glClearColor(0,0,0,1);
 glColor3f(1,0,0);

}

void Draw()

{

glClear(GL_COLOR_BUFFER_BIT);

 /* DESENHANDO UM RETANGULO */
 //glPointSize(5);
 glBegin(GL_LINES);
 glVertex2d(-0.5, 0.5);
 glVertex2d(0.5, 0.5);
 glVertex2d(0.5,-0.5);
 glVertex2d(-0.5,-0.5);
 glEnd();
 glFlush();

}

int main(int C, char *V[])

{

glutInit(&C,V);
 glutInitWindowPosition(250,50);

// POSTURA DA JANELA

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 Doxy

_64-w64-mingw32\lib;C:\msys64\mingw64\bin;C:\msys64\mingw64\include\gtk-3.0;C:\msys64\mingw64\include\gtk-4.0;C:\gradle-7.4.1\bin;C:\Program Files\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Program Files (x86)\Brackets;C:\Users\brito\AppData\Local\atom\bin;C:\Users\brito\AppData\Roaming\npm

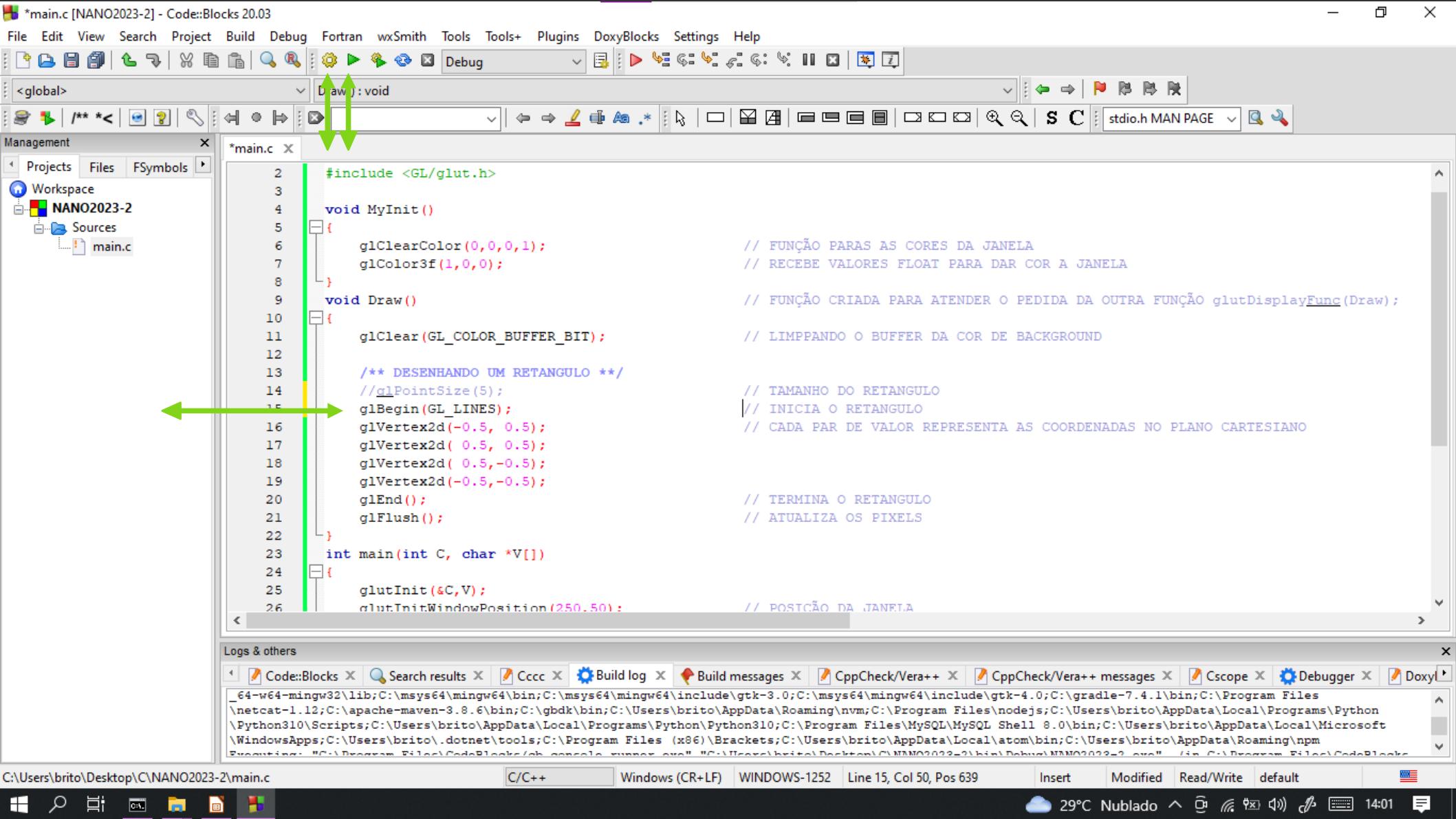
Executing: "C:\Program Files\Code::Blocks\cb_console_runner.exe" "C:\Users\brito\Desktop\NANO2023-2\main.c" (in C:\Users\brito\Desktop\NANO2023-2)

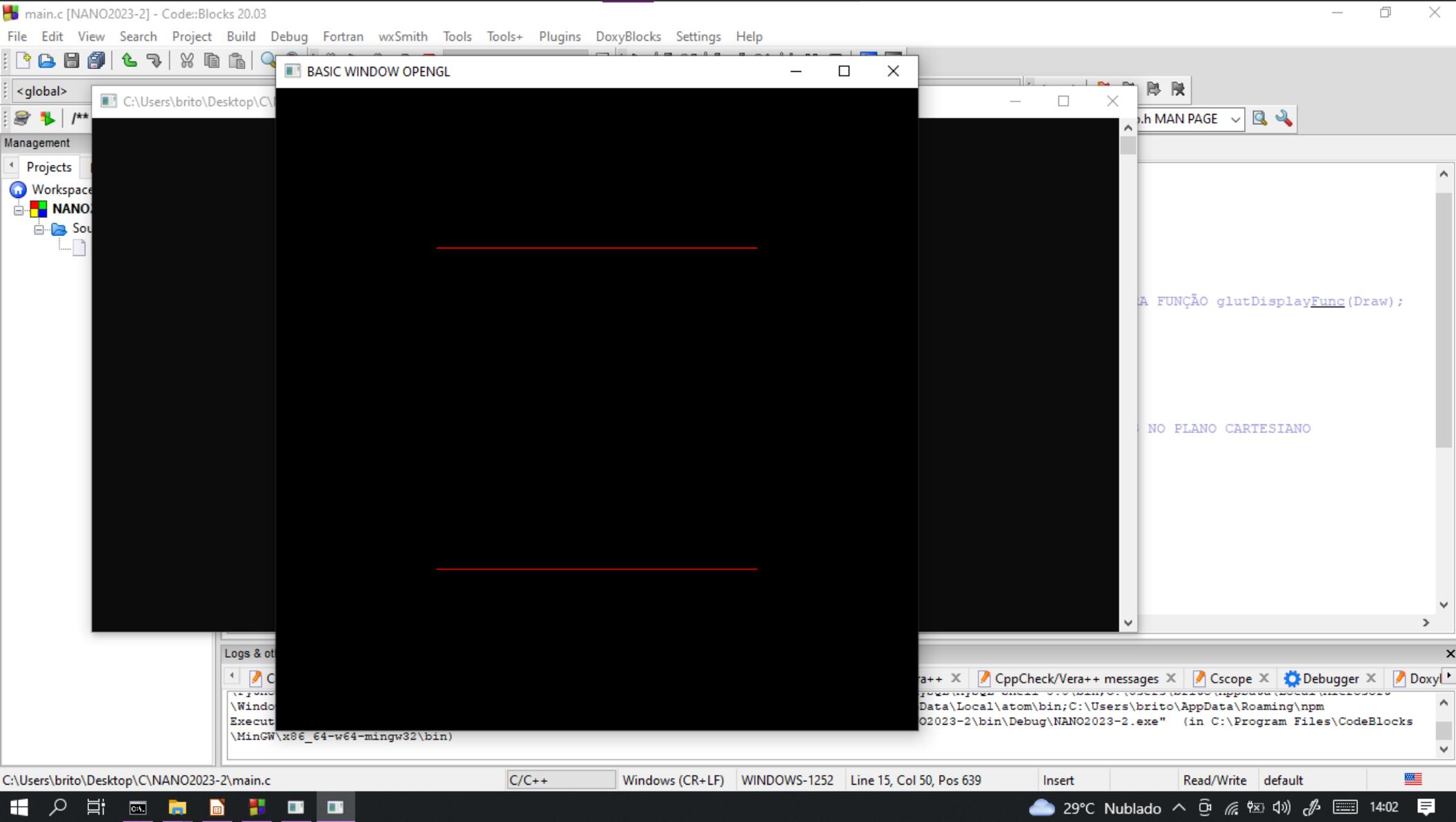
C:\Users\brito\Desktop\C\NANO2023-2\main.c

C/C++ Windows (CR+LF) WINDOWS-1252 Line 15, Col 50, Pos 639 Insert Modified Read/Write default

29°C Nublado

14:01





```
12  
13     /** DESENHANDO UM RETANGULO **/  
14     //glPointSize(5);  
15     glBegin(GL_LINE_ );  
16     glVertex # GL_LINE_BIT  
17     glVertex # GL_LINE_LOOP  
18     glVertex # GL_LINE_RESET_TOKEN  
19     glVertex # GL_LINE_SMOOTH  
20     glEnd # GL_LINE_SMOOTH_HINT  
21     glFlush # GL_LINE_STIPPLE  
22 }
```

*main.c [NANO2023-2] - Code::Blocks 20.03

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raw void

Management

Projects Files FSymbols

Workspace NANO2023-2 Sources main.c

#include <GL/glut.h>

void MyInit()

{

glClearColor(0,0,0,1);
 glColor3f(1,0,0);

}

void Draw()

{

glClear(GL_COLOR_BUFFER_BIT);

 /* DESENHANDO UM RETANGULO */
 //glPointSize(5);
 glBegin(GL_LINE_LOOP);
 glVertex2d(-0.5, 0.5);
 glVertex2d(0.5, 0.5);
 glVertex2d(0.5,-0.5);
 glVertex2d(-0.5,-0.5);
 glEnd();
 glFlush();

}

int main(int C, char *V[])

{

glutInit(&C,V);
 glutInitWindowPosition(250,50);

// FUNÇÃO PARAS AS CORES DA JANELA
// RECEBE VALORES FLOAT PARA DAR COR A JANELA

// FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA FUNÇÃO glutDisplayFunc(Draw);

// LIMPANDO O BUFFER DA COR DE BACKGROUND

// TAMANHO DO RETANGULO
// INICIA O RETANGULO
// CADA PAR DE VALOR REPRESENTA AS COORDENADAS NO PLANO CARTESIANO

// TERMINA O RETANGULO
// ATUALIZA OS PIXELS

// POSTOÃO DA JANELA

Logs & others

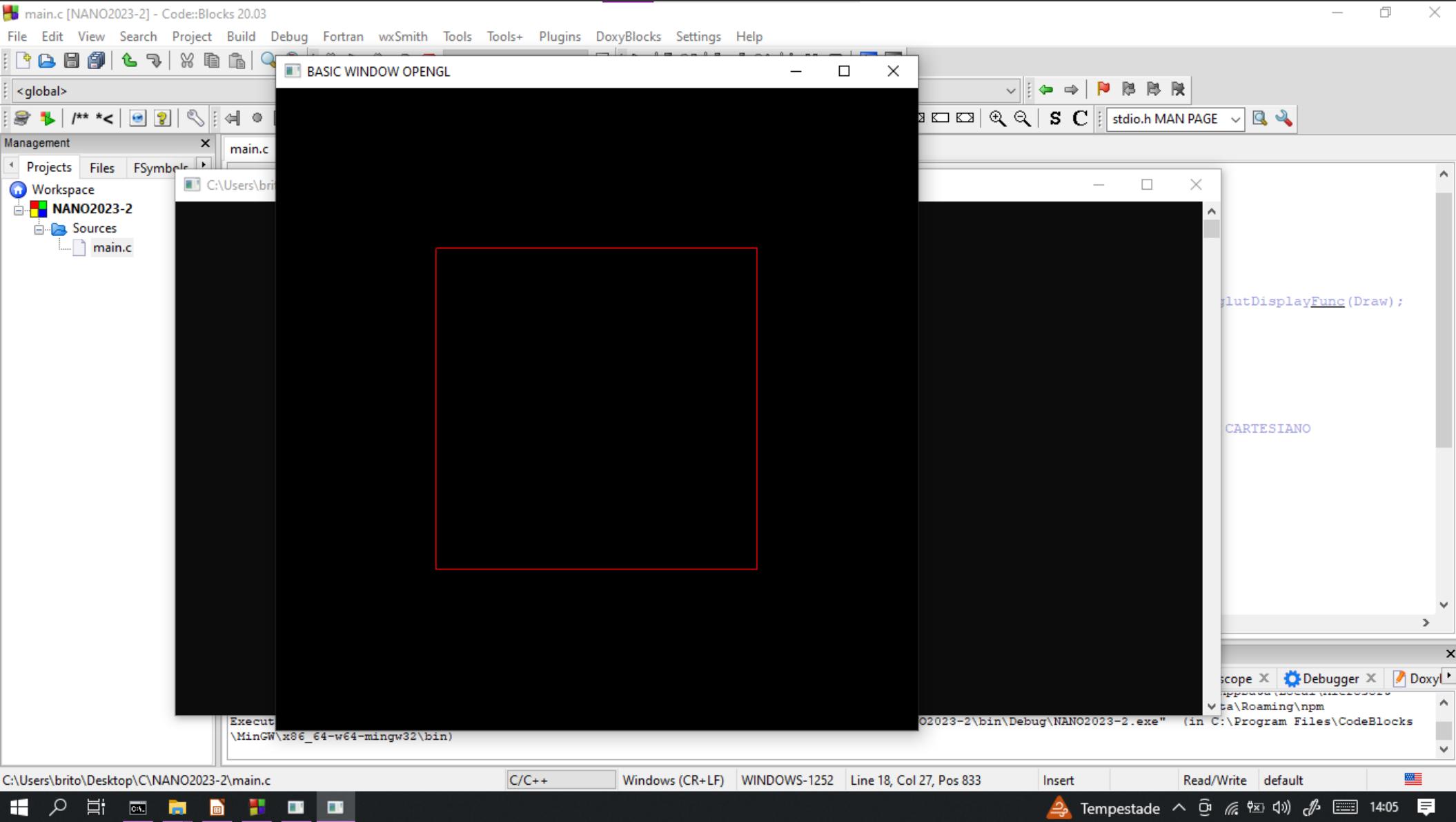
Code::Blocks X Search results X Ccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X Cscope X Debugger X Doxygen X

\MinGW\x86_64-w64-mingw32\bin)
Process terminated with status -1073741510 (0 minute(s), 5 second(s))

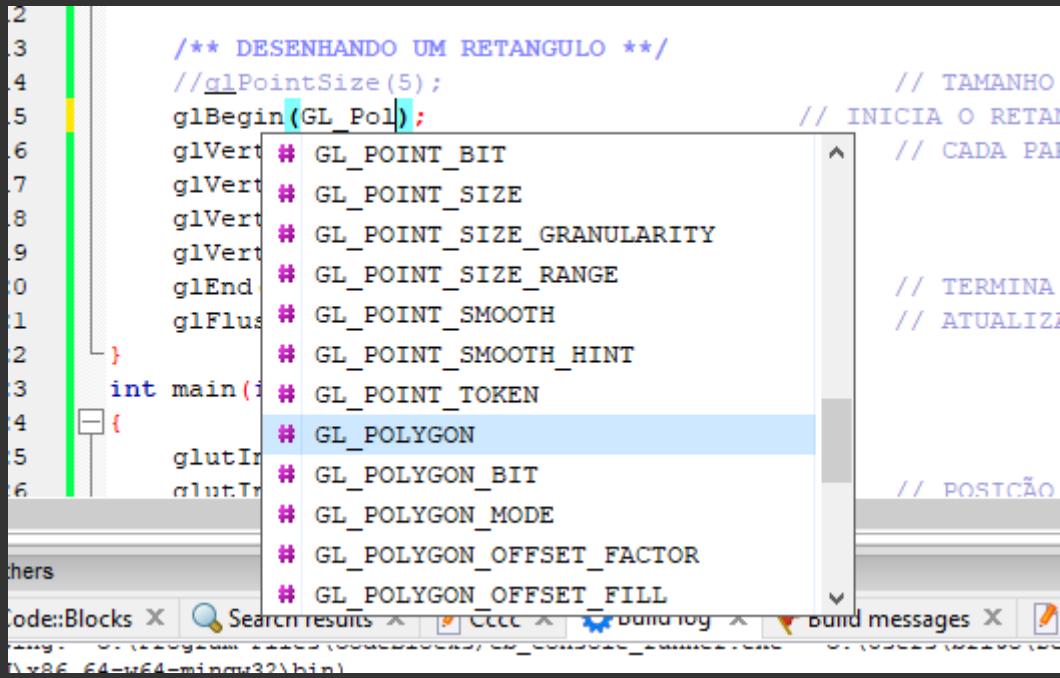
C:\Users\brito\Desktop\C\NANO2023-2\main.c

C/C++ Windows (CR+LF) WINDOWS-1252 Line 18, Col 27, Pos 833 Insert Modified Read/Write default

Tempestade



```
2      /** DESENHANDO UM RETANGULO ***/
3      //glPointSize(5);                                // TAMANHO
4      glBegin(GL_POLYGON);                          // INICIA O RETA
5      glVert...                                     // CADA PAI
6      glVert...                                     // TERMINA
7      glVert...                                     // ATUALIZA
8      glVert...                                     // POSTCÃO
9      glEnd();
10     glFlush();
11 }
12 int main(int argc, char *argv[])
13 {
14     glutInit(&argc, argv);
15     glutInitDisplayMode(GLUT_DOUBLE | GLUT_RGB);
16 }
```



Desenhando um retangulo sólido

*main.c [NANO2023-2] - Code::Blocks 20.03

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Draw(); void

Management Projects Files FSymbols NANO2023-2 Sources main.c

```
#include <GL/glut.h>

void MyInit()
{
    glClearColor(0,0,0,1);
    glColor3f(1,0,0);
}

void Draw()
{
    glClear(GL_COLOR_BUFFER_BIT);

    /* DESENHANDO UM RETANGULO */
    //glPointSize(5);
    glBegin(GL_POLYGON);
    glVertex2d(-0.5, 0.5);
    glVertex2d( 0.5, 0.5);
    glVertex2d( 0.5,-0.5);
    glVertex2d(-0.5,-0.5);
    glEnd();
    glFlush();
}

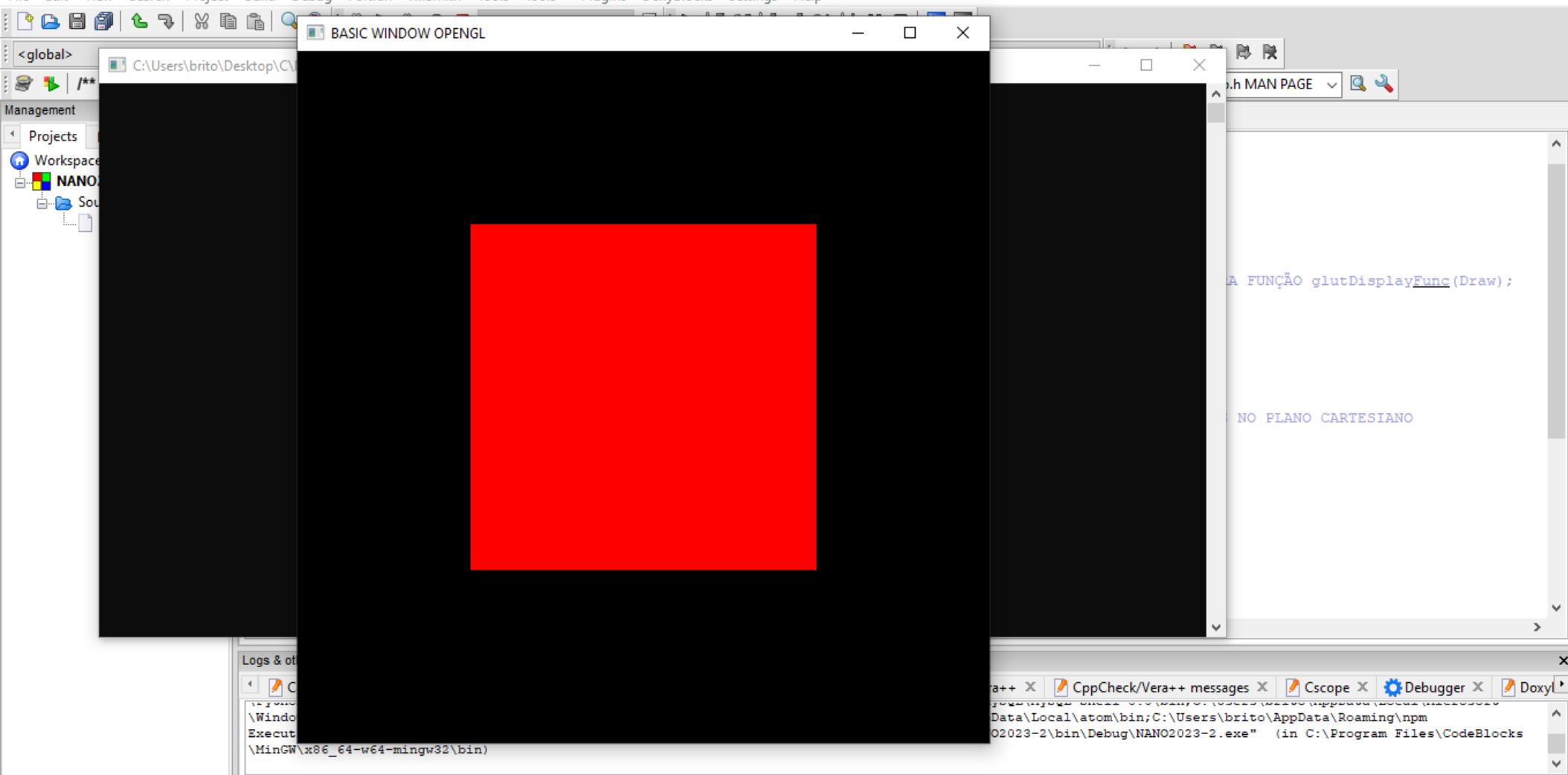
int main(int C, char *V[])
{
    glutInit(&C,V);
    glutInitWindowPosition(250,50);
    // POSIÇÃO DA JANELA
}
```

Logs & others

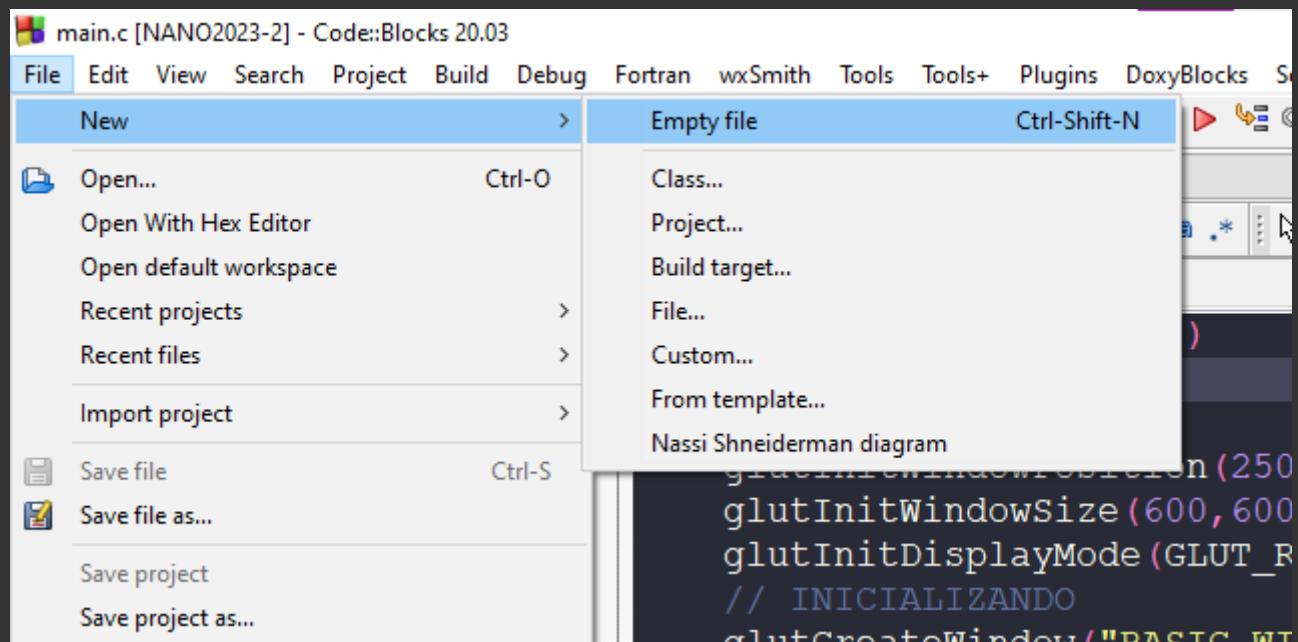
Code::Blocks X Search results X Ccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X Cscope X Debugger X Doxygen X

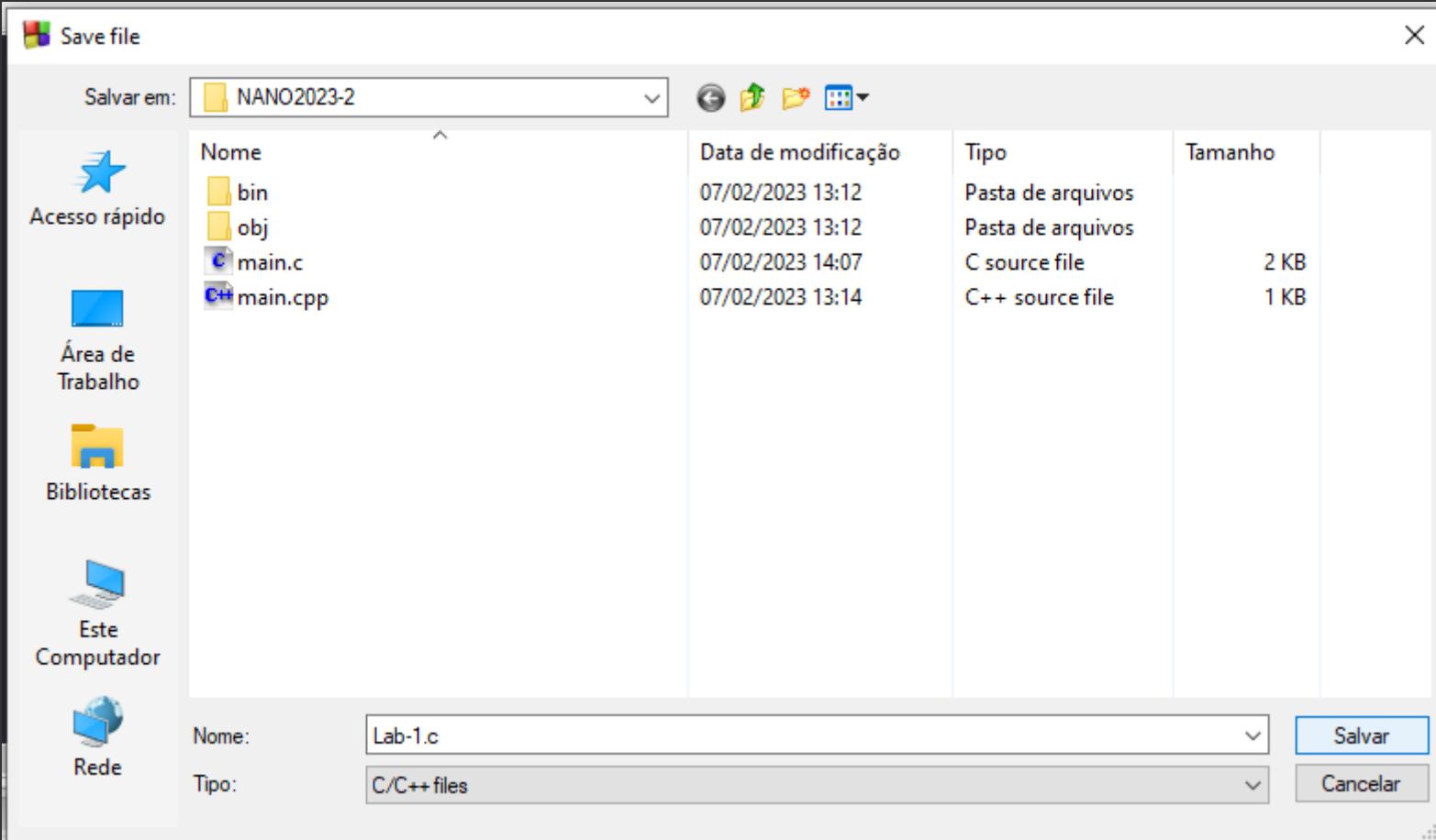
\MinGW\x86_64-w64-mingw32\bin) Process terminated with status -1073741510 (0 minute(s), 5 second(s))

C:\Users\brito\Desktop\C\NANO2023-2\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 15, Col 50, Pos 639 Insert Modified Read/Write default Chuva chegando ^ 14:07



DRAW CUBE
COM OPENGL





Multiple selection

Select the targets this file should belong to:

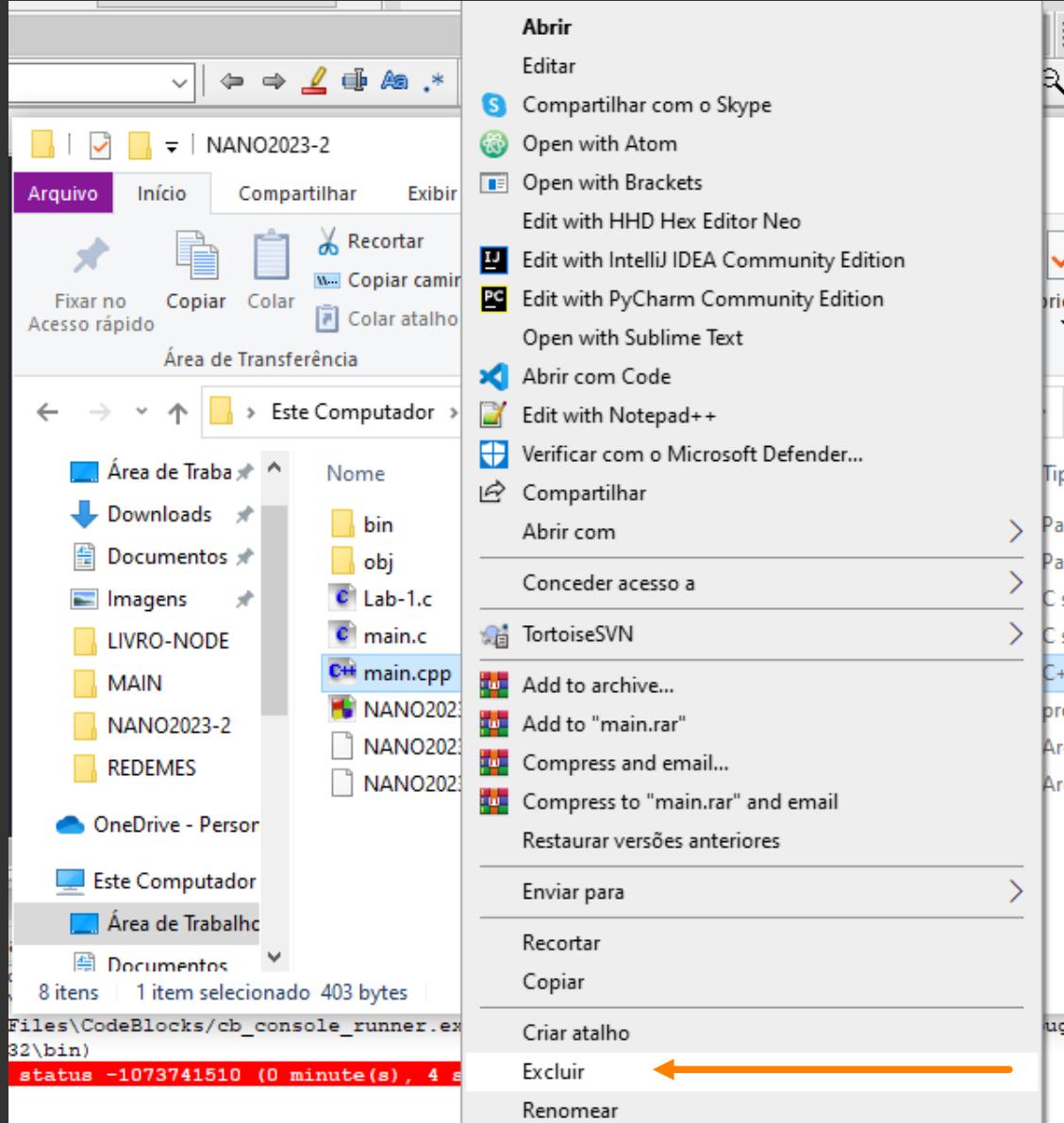
- Debug
- Release

[Wildcard select](#)
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Selected: 2

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Cancel



*Lab-1.c [NANO2023-2] - Code::Blocks 20.03

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Management X

Projects Files FSymbols

Workspace NANO2023-2 Sources Lab-1.c main.c

main.c *Lab-1.c X

```
8     }
9     void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA
10    {
11        glClear(GL_COLOR_BUFFER_BIT); // LIMPANDO O BUFFER DA COR DE BACKGROUND
12
13        /** DESENHANDO UM RETANGULO **/
14        //glPointSize(5); // TAMANHO DO RETANGULO
15        glBegin(GL_POLYGON); // INICIA O RETANGULO
16        glVertex2d(-0.5, 0.5); // CADA PAR DE VALOR REPRESENTA AS COORDENADAS
17        glVertex2d( 0.5, 0.5);
18        glVertex2d( 0.5,-0.5);
19        glVertex2d(-0.5,-0.5);
20        glEnd(); // TERMINA O RETANGULO
21        glFlush(); // ATUALIZA OS PIXELS
22    }
23    int main(int argc, char *argv[])
24    {
25        glutInit(&argc, argv);
```

Copie o programa anterior e cole

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

```
\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Users\brito\AppData\Local\atom\bin
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\NANO2023-2\bin\Debug\NANO2023-2.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_64-mingw32\bin)
Process terminated with status -1073741510 (0 minute(s), 4 second(s))
```

C:\Users\brito\Desktop\C\NANO2023-2\Lab-1.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 39, Col 1, Pos 1687 Insert Modified Read/Write default URGENTE 11:58

```
main.c *Lab-1.c
20         glEnd();                                     // TERMINA O RETANGULO
21         glFlush();                                    // ATUALIZA OS PIXELS
22     }
23     int main(int C, char *V[])
24     {
25         glutInit(&C, V);
26         glutInitWindowPosition(250, 50);                // POSIÇÃO DA JANELA
27         glutInitWindowSize(600, 600);                   // TAMANHO E LARGURA DA JANELA
28         glutInitDisplayMode(GLUT_RGB | GLUT_DOUBLE); // CORES DA JANELA A COR PADRÃO É BRANCA
29         // INICIALIZANDO
30         glutCreateWindow("BASIC WINDOW");             // TITULO DA JANELA
31         MyInit();                                     // CRIANDO NOSSA FUNÇÃO
32         glutDisplayFunc(Draw);
33         glutMainLoop();                                // FUNÇÃO OBRIGATORIA
34     return 0;
35 }
36
37 // https://www.youtube.com/watch?v=WC_VaSr6z6c&t=1254s
```

A primeira modificação é no buffer

```
21     glutMainLoop(); // ALIMENTA OS TIPOS
22 }
23 int main(int C, char *V[])
24 {
25     glutInit(&C, V);
26     glutInitWindowPosition(250, 50); // POSIÇÃO DA JANELA
27     glutInitWindowSize(600, 600); // TAMANHO E LARGURA DA
28     glutInitDisplayMode(GLUT_RGB | GLUT_DOUBLE); // CORES DA JANELA A COF
29 // INICIALIZANDO
30     glutCreateWindow("BASIC WINDOW OPENGL"); // TITULO DA JANELA
31     MyInit(); // CRIANDO NOSSA FUNÇÃO
32     glutDisplayFunc(Draw);
33     glutMainLoop(); // FUNÇÃO OBRIGATORIA
34     return 0;
35 }
36
37
```

```
25 glutInit(&C,V);
26 glutInitWindowPosition(250,50); // POSIÇÃO DA JANELA
27 glutInitWindowSize(600,600); // TAMANHO E LARGURA DA JANELA
28 glutInitDisplayMode(GLUT_RGB | GLUT_DOUBLE | GLUT_DEPTH); // CORES DA JANELA A COR PADRÃO É BRANCA
29 // INICIALIZANDO
30 glutCreateWindow("BASIC WINDOW OPENGL");
31 MyInit();
32 glutDisplayFunc(Draw);
33 glutMainLoop();
34 return 0;
35 }
36 // https://www.youtube.com/watch?v=wG_VaSr6a6cs
37

Code::Blocks X Search results X Ccc X Build log X Build messages X CppCheck X
\ProgramData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;
et\tools;C:\Users\brito\AppData\Local\atom\bin
ing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\I\x86_64-w64-mingw32\bin"
s terminated with status -1073741510 (0 minute(s), 4 second(s))
```

```
// POSIÇÃO DA JANELA
// TAMANHO E LARGURA DA JANELA
BLE | GLUT_DEPTH); // CORES DA JANELA
#define GLUT_DEPTH 0x0010
// TÍTULO DA JANELA
// CRIANDO NOSSA FUNÇÃO
```

Não encontrou uma resposta? Ask in Stack Overflow in English.



Duas dessas constantes, `GLUT_DOUBLE` e `GLUT_DEPTH`, cada uma contém um bit definido:

4

```
GLUT_DOUBLE = 0x0002 = 0b0000 0000 0000 0010  
GLUT_DEPTH  = 0x0010 = 0b0000 0000 0001 0000
```



A combinação dessas constantes com um OR bit a bit cria um novo valor com ambos os bits definidos e é possível verificar se esses bits estão definidos no valor resultante usando, por exemplo

```
if ((display_mode & GLUT_DOUBLE) != 0) { ... }
```

`GLUT_RGB` é zero. Inclusive não tem efeito no resultado; Suspeito que represente uma configuração verdadeira por padrão.

Os números específicos usados não têm nenhum significado mais

problematica
matéria?

● Tábuas lascadas
meias

● いいじゃない

● Primeira história
década de 19
bomba atômica

● Por que todo mundo
aumentar o tempo
argumentam
ignorá-lo?

● Como forçar
exatamente a

● Não liste o diretório
subdiretórios

● Como se pro
por

● Como a comp
por

● Lat/Long extr
UTM

*Lab-1.c [NANO2023-2] - Code::Blocks 20.03

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<global> main(int C, char* V[]) : int

Management Projects Files NANO2023-2 Sources Lab-1.c main.c

```
20     glEnd();                                // TERMINA O RETANGULO
21     glFlush();                               // ATUALIZA OS PIXELS
22 }
23 int main(int C, char *V[])
24 {
25     glutInit(&C, V);
26     glutInitWindowPosition(250, 50);           // POSIÇÃO DA JANELA
27     glutInitWindowSize(600, 600);              // TAMANHO E LARGURA DA JANELA
28     glutInitDisplayMode(GLUT_RGB | GLUT_DOUBLE | GLUT_DEPTH); // A COMBINAÇÃO DESSAS DUAS CONSTANTES INICIALIZANDO
29
30     glutCreateWindow("LAB Program - 3 : CUBE IN SPIN"); // TÍTULO DA JANELA
31     MyInit();                                 // CRIANDO NOSSA FUNÇÃO
32     glutDisplayFunc(Draw);
33     glutMainLoop();                          // FUNÇÃO OBRIGATÓRIA
34     return 0;
35 }
36
37 // https://www.youtube.com/watch?v=wG_VaSr6z6ct-1254s
```

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 DoxyBlocks X

\Users\brito\AppData\Local\Programs\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Users\brito\AppData\Local\atom\bin

Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\NANO2023-2\bin\Debug\NANO2023-2.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\bin)

Process terminated with status -1073741510 (0 minute(s), 4 second(s))

C:\Users\brito\Desktop\C\NANO2023-2\Lab-1.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 30, Col 63, Pos 1424 Insert Modified Read/Write default USD/BRL +1,2... 12:11

```
    }
    void Draw() // FUNÇÃO CRIADA P
{
    glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH); // LIMPA
    /** DESENHANDO UM RETANGULO
    //glPointSize(5);
    glBegin(GL_POLYGON);
    glVertex2d(-0.5, 0.5);
    glVertex2d( 0.5, 0.5);
    glVertex2d( 0.5,-0.5);
    glVertex2d(-0.5,-0.5);
    glEnd();
}
```

GL_DEPTH
GL_DEPTH_BIAS
GL_DEPTH_BITS
GL_DEPTH_BUFFER_BIT ←
GL_DEPTH_CLEAR_VALUE
GL_DEPTH_COMPONENT
GL_DEPTH_FUNC
GL_DEPTH_RANGE
GL_DEPTH_SCALE
GL_DEPTH_TEST
GL_DEPTH_WRITEMASK

others

Code::Blocks X Search results X Cccc X Build log X Build
s\brito\AppData\Local\Programs\Python\Python310\Scripts;C:\Us
o\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\
ting: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:
4-mingw32\bin"

```
6     glColor4f(0,0,0,1), // FUNÇÃO PARA AS CORES DA JANELA
7     glColor3f(1,0,0); // RECEBE VALORES FLOAT PARA DAR COR A
8 }
9 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA
10 {
11     glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIMPPANDO O BUFFER DA COR
12
13     /** DESENHANDO UM RETANGULO **/
14     //glPointSize(5); // TAMANHO DO RETANGULO
15     glBegin(GL_POLYGON); // INICIA O RETANGULO
16     glVertex2d(-0.5, 0.5); // CADA PAR DE VALOR REPRESENTA AS COO
17     glVertex2d( 0.5, 0.5);
18     glVertex2d( 0.5,-0.5);
19     glVertex2d(-0.5,-0.5);
20     glEnd(); // TERMINA O RETANGULO
```

```
    glVertex2d(-0.5,-0.5);
    glEnd();
    glutSwap(); // TERA
}
in glutStrokeCharacter(): void
{
    glutStrokeLength(): int
    glutStrokeLengthf(): GLfloat
    glutStrokeWidth(): int
    glutStrokeWidthf(): GLfloat
    glutSwapBuffers(): void // ATUA
    glutTabletButtonFunc(): void
    glutTabletMotionFunc(): void
    glutTimerFunc(): void
    glutUseLayer(): void
    glutVideoPan(): void
    glutVideoResize(): void
```

Blocks X

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ab-1.c

e 21, Col 1

```
11     glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
12
13     /** DESENHANDO UM RETANGULO ***/
14     //glPointSize(5);
15     glBegin(GL_POLYGON);
16     glVertex2d(-0.5, 0.5);
17     glVertex2d( 0.5, 0.5);
18     glVertex2d( 0.5,-0.5);
19     glVertex2d(-0.5,-0.5);
20     glEnd();
21     glutSwapBuffers();
22 }
23 int main(int C, char *V[])
24 {
25     glutInit(&C,V);
26     glutInitWindowPosition(250,50);
27     glutInitWindowSize(600,600);
```

```
13     /** DESENHANDO UM RETANGULO **/
14     //glPointSize(5);
15     glBegin(GL_POLYGON);
16     glVertex3d(-0.5, 0.5);
17     (■) glVertex3d(): void
18     (■) glVertex3dv(): void
19     (■) glVertex3f(): void
20     (■) glVertex3fv(): void
21     (■) glVertex3i(): void
22     } in (■) glVertex3iv(): void
23     (■) glVertex3s(): void
24     (■) glVertex3sv(): void
25
26     250, 50);
27     glutInitWindowSize(600, 600);
```

```
0  {
1      glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
2
3      /** DESENHANDO UM RETANGULO **/
4      //glPointSize(5);                                // TAMANHO
5      glBegin(GL_POLYGON);                          // INICIA
6      glVertex3f(-0.5, 0.5);                      // CADA P
7      glVertex3f( 0.5, 0.5);
8      glVertex3f( 0.5,-0.5);
9      glVertex3f(-0.5,-0.5);
0      glEnd();                                    // TERMINA
1      glutSwapBuffers();                           // ATUALIZA
2
3  int main(int C, char *V[])
4  {
5      glutInit(&C,V);
6      glutInitWindowPosition(250,50);              // POSIÇÃO
7      glutInitWindowSize(600,600);                 // TAMANHO
```

```
9 void Draw()
10 {
11     GLfl
12     (■) glFeedbackBuffer(): void    | GL_DEP
13     (■) glFinish(): void
14     ■■ GLfloat
15     (■) glFlush(): void
16     (■) glFogf(): void
17     (■) glFogfv(): void
18     (■) glFogi(): void
19     (■) glFogiv(): void
20     (■) glFrontFace(): void
21     (■) glFrustum(): void
22
23 }
24
25
```

```
main.c x *Lab-1.c x
8 }
9 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA F
10 {
11     GLfloat Vertices[8][3] = {
12         {
13             {
14                 {
15                     }
16         glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIMPPANDO O BUFFER DA COR DE BACKGROU
17
18     /** DESENHANDO UM RETANGULO **/
19     //glPointSize(5); // TAMANHO DO RETANGULO
20     glBegin(GL_POLYGON); // INICIA O RETANGULO
21     glVertex3f(-0.5, 0.5); // CADA PAR DE VALOR REPRESENTA AS COORDENADAS NO
22     glVertex3f( 0.5, 0.5);
23     glVertex3f( 0.5,-0.5);
24     glVertex3f(-0.5,-0.5);
25     glEnd(); // TERMINA O RETANGULO
```

```
*Lab-1.c x
8    }
9    void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDI
0    {
1        GLfloat Vertices[8][3] = {
2            {-0.5, 0.5, 0.5}, // PONTOS DOS RETANGULOS
3            { 0.5, 0.5, 0.5},
4            { 0.5,-0.5, 0.5},
5            {-0.5,-0.5, 0.5},
6        };
7        glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIMPPANDO O BUFFER DA C
8
9        /** DESENHANDO UM RETANGULO **/
0        //glPointSize(5); // TAMANHO DO RETANGULO
1        glBegin(GL_POLYGON); // INICIA O RETANGULO
2        glVertex3f(-0.5, 0.5); // CADA PAR DE VALOR REPRESENTA AS COORDENADAS
3        glVertex3f( 0.5, 0.5);
4        glVertex3f( 0.5,-0.5);
5        glVertex3f(-0.5,-0.5).
```

AS COORDENADAS SE REFEREM AO PLANO CARTESIANO

```
*Lab-1.c x
8    }
9    void Draw() // FUNÇÃO CRIADA PARA ATENDER O
10   {
11     GLfloat Vertices[8][3] = {
12         {-0.5, 0.5, 0.5}, // PONTOS DOS RETANGULOS
13         { 0.5, 0.5, 0.5},
14         { 0.5,-0.5, 0.5},
15         {-0.5,-0.5, 0.5},
16
17         {-0.5, 0.5,-0.5}, // PONTOS DOS RETANGULOS
18         { 0.5, 0.5,-0.5},
19         { 0.5,-0.5,-0.5},
20         {-0.5,-0.5,-0.5},
21     };
22     glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIMPANDO O BUFFER
23
24     /** DESENHANDO UM RETANGULO **/
25     //glPointSize(5); // TAMANHO DO RETANGULO
```

```
void Draw() // FUNÇÃO CRIADA PELA MÍDIA
{
    GLfloat Vertices[8][3] = {
        {-0.5, 0.5, 0.5}, /* Top Left */
        { 0.5, 0.5, 0.5}, /* Top Right */
        { 0.5,-0.5, 0.5}, /* Bottom Right */
        {-0.5,-0.5, 0.5}, /* Bottom Left */
        {-0.5, 0.5,-0.5}, /* Top Left */
        { 0.5, 0.5,-0.5}, /* Top Right */
        { 0.5,-0.5,-0.5}, /* Bottom Right */
        {-0.5,-0.5,-0.5} /* Bottom Left */
    };
    glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // Limpa o buffer de cor e profundidade

    /** DESENHANDO UM RETÂNGULO **/
    //glPointSize(5); // Tamanho do ponto
```

```
*Lab-1.c X
8 }
9 void Draw() // FUNÇÃO DE DIBUJO
10 {
11     GLfloat V[8][3] = {
12         {-0.5, 0.5, 0.5},
13         { 0.5, 0.5, 0.5},
14         { 0.5,-0.5, 0.5},
15         {-0.5,-0.5, 0.5},
16         {-0.5, 0.5,-0.5},
17         { 0.5, 0.5,-0.5},
18         { 0.5,-0.5,-0.5},
19         {-0.5,-0.5,-0.5}
20     };
21     glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
```

TROQUE O NOME PRA V

```
    };  
    glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIM  
    Cube(V[0],V[1],V[2],V[3],V[4],V[5],V[6],V[7]); // ←  
    /** DESENHANDO UM RETANGULO **/  
    //glPointSize(5); // TAMANHO DO RETANGULO  
    glBegin(GL_POLYGON); // INICIA O RETANGULO
```

```
7     glColor3f(1, 0, 0); // RECEBE VALORES FLOAT PARA DAR COR A QUADRA
8 }
9
10 void Cube(GLfloat V0[], GLfloat V1[], GLfloat V2[], GLfloat V3[], GLfloat V4[], GLfloat V5[], GLfloat V6[])
11 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA F
12 {
13     GLfloat V[8][3] = {
```

```
9
10 , GLfloat V1[], GLfloat V2[], GLfloat V3[], GLfloat V4[], GLfloat V5[], GLfloat V6[], GLfloat V7[])
11
12 }
```

```
6     glClearColor(0,0,0,1);           // FUNÇÃO PARA AS CORES DA JANELA
7     glColor3f(1,0,0);              // RECEBE VALORES FLOAT PARA DAR COR A JANELA
8 }
9
10 void Cube(GLfloat V0[],GLfloat V1[],GLfloat V2[],GLfloat V3[],GLfloat V4[],GLfloat V5[],GLfloat V6
11 {
12     |
13 }
14
15 void Draw()                      // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA F
16 {
17     GLfloat V[8][3] = {           // PONTOS DOS RETÂNGULOS COORDENADAS
18         -0.5, 0.5, 0.5,
```

```
8 }  
9  
0 void Cube(GLfloat v0[], GLfloat v1[], GLfloat v2[], GLfloat v3[],  
1 {  
2     //  
3 }  
4  
5 }
```

```
3 }
4
5     void Cube(GLfloat v0[], GLfloat v1[], GLfloat v2[], GLfloat v3[], GLfloat v4[], GLfloat v5[], GLfloat v6[])
6     {
7         Face();
8     }
9
10    void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA F
11    {
12        GLfloat v[8][3] = {
```

```
main.c *Lab-1.c
6     glClearColor(0,0,0,1);           // FUNÇÃO PARA AS CORES
7     glColor3f(1,0,0);             // RECEBE VALORES FLOAT PA
8 }
9
10 void Face()
11 {
12
13 }
14
15 void Cube(GLfloat V0[], GLfloat V1[], GLfloat V2[], GLfloat V3[], GLfloat V4[],
16 {
17     Face();
18 }
19
20 void Draw();                         // FUNÇÃO CRIADA PARA ATEN
21 {
22     GLfloat V[8][3] = {               // PONTOS DOS V
23         -0.5, 0.5, 0.5,           // PONTO 1
24         0.5, 0.5, 0.5,           // PONTO 2
25         0.5, -0.5, 0.5,          // PONTO 3
26         -0.5, -0.5, 0.5,          // PONTO 4
27         -0.5, 0.5, -0.5,          // PONTO 5
28         0.5, 0.5, -0.5,          // PONTO 6
29         0.5, -0.5, -0.5,          // PONTO 7
30         -0.5, -0.5, -0.5};        // PONTO 8
```

```
33     glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);      // LIMPANDO O BUFFER DA COR DE FONTE
34
35     Cube(V[0],V[1],V[2],V[3],V[4],V[5],V[6],V[7]);
36     /** DESENHANDO UM RETANGULO **/
37     //glPointSize(5);                                     // TAMANHO DO RETANGULO
38     glBegin(GL_POLYGON);                                // INICIA O RETANGULO
39     glVertex3f(-0.5, 0.5);                            // CADA PAR DE VALOR REPRESENTA AS COORDENADAS
40     glVertex3f( 0.5, 0.5);
41     glVertex3f( 0.5,-0.5);
42     glVertex3f(-0.5,-0.5);
43     glEnd();                                         // TERMINA O RETANGULO
44     glutSwapBuffers();                                // ATUALIZA OS PIXELS
45 }
46 int main(int c, char *v[])
47 {
```

CUT ESSA PARTE

```
main.c *Lab-1.c X
8 }
9
10 void Face()
11 {
12     glBegin(GL_POLYGON); // INICIA O RETANGULO
13     glVertex3f(-0.5, 0.5); // CADA PAR DE VALOR REPRESENTA AS COO
14     glVertex3f( 0.5, 0.5);
15     glVertex3f( 0.5,-0.5);
16     glVertex3f(-0.5,-0.5);
17     glEnd();
18 }
19
20 void Cube(GLfloat V0[],GLfloat V1[],GLfloat V2[],GLfloat V3[],GLfloat V4[],GLfloat V5[],GLF
21 {
22     Face();
23 }
24
25 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA
```

COLE

```
6     glClearColor(0,0,0,1);                                // FUNÇÃO PARAS AS CORES DA JANELA
7     glColor3f(1,0,0);                                    // RECEBE VALORES FLOAT PARA DAR CORES
8 }
9
10 void Face(GLfloat A[],GLfloat B[],GLfloat C[],GLfloat D[])
11 {
12     glBegin(GL_POLYGON);                                // INICIA O RETANGULO
13         glVertex3f(-0.5, 0.5);                         // CADA PAR DE VALOR REPRESENTA UMA VERTICE
14         glVertex3f( 0.5, 0.5);
15         glVertex3f( 0.5,-0.5);
16         glVertex3f(-0.5,-0.5);
17     glEnd();
18 }
19
20 void Cube(GLfloat V0[],GLfloat V1[],GLfloat V2[],GLfloat V3[],GLfloat V4[],GLfloat V5[])
21 {
22     Face();
23 }
```

```
void Face(GLfloat A[], GLfloat B[], GLfloat C[], GLfloat D[])
{
    glBegin(GL_POLYGON);                                // INICIA O RETANGULO
        glVertex3f(A[0],A[1],A[2]);                      // CADA PAR DE VALOR REP
        glVertex3fv();
```

(■) glVertex3fv(): void

```
    glEnd();
```

```
void Cube(GLfloat V0[], GLfloat V1[], GLfloat V2[], GLfloat V3[], GLfloat V4[])
{
    Face();
```

```
    glColor3f(1,0,0);                                // RECEBE VALORES FLOAT
}
}

void Face(GLfloat A[],GLfloat B[],GLfloat C[],GLfloat D[])
{
    glBegin(GL_POLYGON);                            // INICIA O RETANGULO
    glVertex3f(A[0],A[1],A[2]);                    // CADA PAR DE VALOR REFERE
    glVertex3fv(B);
    glVertex3fv(C);
    glVertex3fv(D);
    glEnd();
}

void Cube(GLfloat V0[],GLfloat V1[],GLfloat V2[],GLfloat V3[],GLfloat V4[
{
    Face();
}
```

```
0 void Face(GLfloat A[],GLfloat B[],GLfloat C[],GLfloat D[])
1 {
2     glBegin(GL_POLYGON);                                // INICIA O RETANGUL
3         glVertex3fv(A);                               // CADA PAR DE VALOR REPRESENTA
4         glVertex3fv(B);
5         glVertex3fv(C);
6         glVertex3fv(D);
7     glEnd();
8 }
9
10 void Cube(GLfloat V0[],GLfloat V1[],GLfloat V2[],GLfloat V3[],GLfloat
11 {
12     Face(V0,V1,V2,V3);
13 }
```

```
18 }
19
20 void Cube(GLfloat V0[], GLfloat V1[], GLfloat V2[], GLfloat V3[], GLfloat V4[], GLfloat V5[],
21 {
22     Face(V0, V1, V2, V3);
23 } void Face(GLfloat A[], GLfloat B[], GLfloat C[], GLfloat D[])
24
25 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA
26 {
27     GLfloat V[8][3] = {
28         {-0.5, 0.5, 0.5}, // PONTOS DOS RETÂNGULOS COC
29         {0.5, 0.5, 0.5},
```

```
19
20 void Cube(GLfloat V0[], GLfloat V1[], GLfloat V2[], GLfloat V3[], GLfloat V4[], GLfloat V5[], GLfloat V6[]
21 {
22     Face(V0, V1, V2, V3);
23     Face(V5, V5, V6, V7); ←
24 }
25
26 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA
27 {
28     GLfloat V[8][3] = {
29         {-0.5, 0.5, 0.5}, // PONTOS DOS RETANGULOS COORDENADAS
30         { 0.5, 0.5, 0.5},
31         { 0.5, -0.5, 0.5},
32         {-0.5, -0.5, 0.5}
```



```
*Lab-1.c x
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 void MyInit()
5 {
6     glClearColor(0,0,0,1);           // FUNÇÃO PARAS AS CORES DA JANELA
7     glColor3f(1,0,0);              // RECEBE VALORES FLOAT PARA DAR COR A JANELA
8 }
9
10 void Face(GLfloat A[],GLfloat B[],GLfloat C[],GLfloat D[])
11 {
12     glBegin(GL_POLYGON);          // INICIA O RETANGULO
13     glVertex3fv(A);              // CADA PAR DE VALOR REPRESENTA AS COORDENADAS NO
14     glVertex3fv(B);
15     glVertex3fv(C);
16     glVertex3fv(D);
17     glEnd();
```

Draw() : void

The screenshot shows the Code::Blocks IDE interface. The main window displays a C++ source code file named "main.c". The code defines a function `Cube` that takes eight arrays of GLfloats as parameters and contains two calls to the `Face` function. It also defines a `Draw` function that initializes an array `V` with vertex coordinates. The code is annotated with comments in Portuguese. The IDE has a dark theme with various toolbars and panels visible at the top and bottom.

```
main.c *Lab-1.c
17     glEnd();
18 }
19
20 void Cube(GLfloat V0[], GLfloat V1[], GLfloat V2[], GLfloat V3[], GLfloat V4[], GLfloat V5[], GLfloat V6[]
21 {
22     Face(V0, V1, V2, V3);
23     Face(V5, V5, V6, V7);
24 }
25
26 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA
27 {
28     GLfloat V[8][3] = {
29         {-0.5, 0.5, 0.5}, // PONTOS DOS RETANGULOS COORDENADAS
30         { 0.5, 0.5, 0.5},
31         { 0.5,-0.5, 0.5},
32         {-0.5,-0.5, 0.5},
33         {-0.5, 0.5, -0.5}, // PONTOS DOS RETANGULOS COORDENADAS
34         { 0.5, 0.5, -0.5},
35         { 0.5,-0.5, -0.5},
36         {-0.5,-0.5, -0.5}
37 }
```

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 DoxyBlocks X

The screenshot shows a dark-themed code editor window with a toolbar at the top containing various icons for file operations, search, and selection. Below the toolbar, two tabs are visible: "main.c" and "*Lab-1.c". The code editor displays the following C++ code:

```
32             {-0.5,-0.5, 0.5},  
33             {-0.5, 0.5,-0.5},           // PONTOS DOS RETANGULOS COORDENADAS  
34             { 0.5, 0.5,-0.5},  
35             { 0.5,-0.5,-0.5},  
36             {-0.5,-0.5,-0.5}  
37         };  
38     glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);      // LIMPANDO O BUFFER DA COR DE BACKGRO  
39  
40     Cube(V[0],V[1],V[2],V[3],V[4],V[5],V[6],V[7]);  
41     /** DESENHA O RETANGULO */  
42     //glPointSize(5);  
43     //TERMINA O RETANGULO  
44  
45     glutSwapBuffers();  
46 }  
47 int main(int C, char *V[]){  
48     glutInit(&C,V);  
49 }
```

The code defines a function `main` that initializes OpenGL, creates a cube using vertices stored in arrays `V[0]` through `V[7]`, and swaps buffers to update the screen.

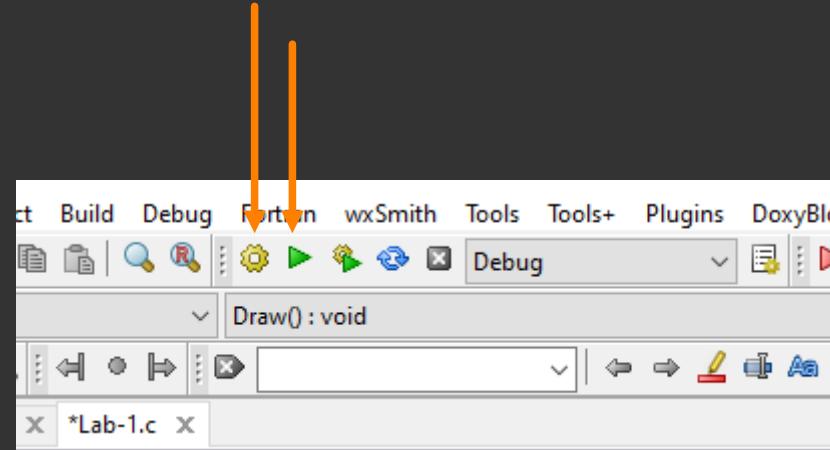
main.c X *Lab-1.c X

```
43     //glPointSize(5);                                // TAMANHO DO RETANGULO
44                                         // TERMINA O RETANGULO
45     glutSwapBuffers();                            // ATUALIZA OS PIXELS
46 }
47 int main(int C, char *V[])
48 {
49     glutInit(&C,V);
50     glutInitWindowPosition(250,50);                // POSIÇÃO DA JANELA
51     glutInitWindowSize(600,600);                   // TAMANHO E LARGURA DA JANELA
52     glutInitDisplayMode(GLUT_RGB | GLUT_DOUBLE | GLUT_DEPTH); // A COMBINAÇÃO DESSAS DUAS CONSTANTES
53 // INICIALIZANDO
54     glutCreateWindow("LAB Program - 3 : CUBE IN SPIN"); // TITULO DA JANELA
55     MyInit();                                     // CRIANDO NOSSA FUNÇÃO
56     glutDisplayFunc(Draw);
57     glutMainLoop();                             // FUNÇÃO OBRIGATÓRIA
58     return 0;
59 }
60 }
```

main.c X

*Lab-1.c X

```
48 {  
49     glutInit(&C, V);  
50     glutInitWindowPosition(250, 50);           // POSIÇÃO DA JANELA  
51     glutInitWindowSize(600, 600);             // TAMANHO E LARGURA DA JANELA  
52     glutInitDisplayMode(GLUT_RGB | GLUT_DOUBLE | GLUT_DEPTH); // A COMBINAÇÃO DESSAS DUAS CONSTANTES  
53     // INICIALIZANDO  
54     glutCreateWindow("LAB Program - 3 : CUBE IN SPIN");      // TÍTULO DA JANELA  
55     MyInit();                                         // CRIANDO NOSSA FUNÇÃO  
56     glutDisplayFunc(Draw);  
57     glutMainLoop();                                // FUNÇÃO OBRIGATÓRIA  
58     return 0;  
59 }  
60  
61 // https://www.youtube.com/watch?v=wG_VaSr6a6c&t=1254s  
62 // parada 20:55  
63  
64
```



Compile e depois rode

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

<global>

Management

Projects Files FSymbols

Workspace LAB-1 Sources Lab-1.c

Lab-1.c X

```
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 void MyInit()
5 {
6     glClearColor(0,0,0,1);                                // FUNÇÃO PARA AS CORES DA JANELA
7     glColor3f(1,0,0);                                    // RECEBE VALORES FLOAT PARA DAR COR A JANELA
8 }
9
10 void Face(GLfloat A[],GLfloat B[],GLfloat C[],GLfloat D[])
11 {
12     glBegin(GL_POLYGON);                                // INICIA O RETANGULO
13     glVertex3fv(A);                                    // CADA PAR DE VALOR REPRESENTA AS COORDENADAS NO PLANO CARTESIANO
14     glVertex3fv(B);
15     glVertex3fv(C);
16     glVertex3fv(D);
17     glEnd();
18 }
19
20 void Cube(GLfloat V0[],GLfloat V1[],GLfloat V2[],GLfloat V3[],GLfloat V4[],GLfloat V5[],GLfloat V6[],GLfloat V7[])
21 {
22     Face(V0,V1,V2,V3);
23     Face(V1,V2,V3,V4);
24     Face(V2,V3,V4,V5);
25     Face(V3,V4,V5,V6);
26     Face(V4,V5,V6,V7);
27     Face(V5,V6,V7,V0);
28 }
```

Logs & others

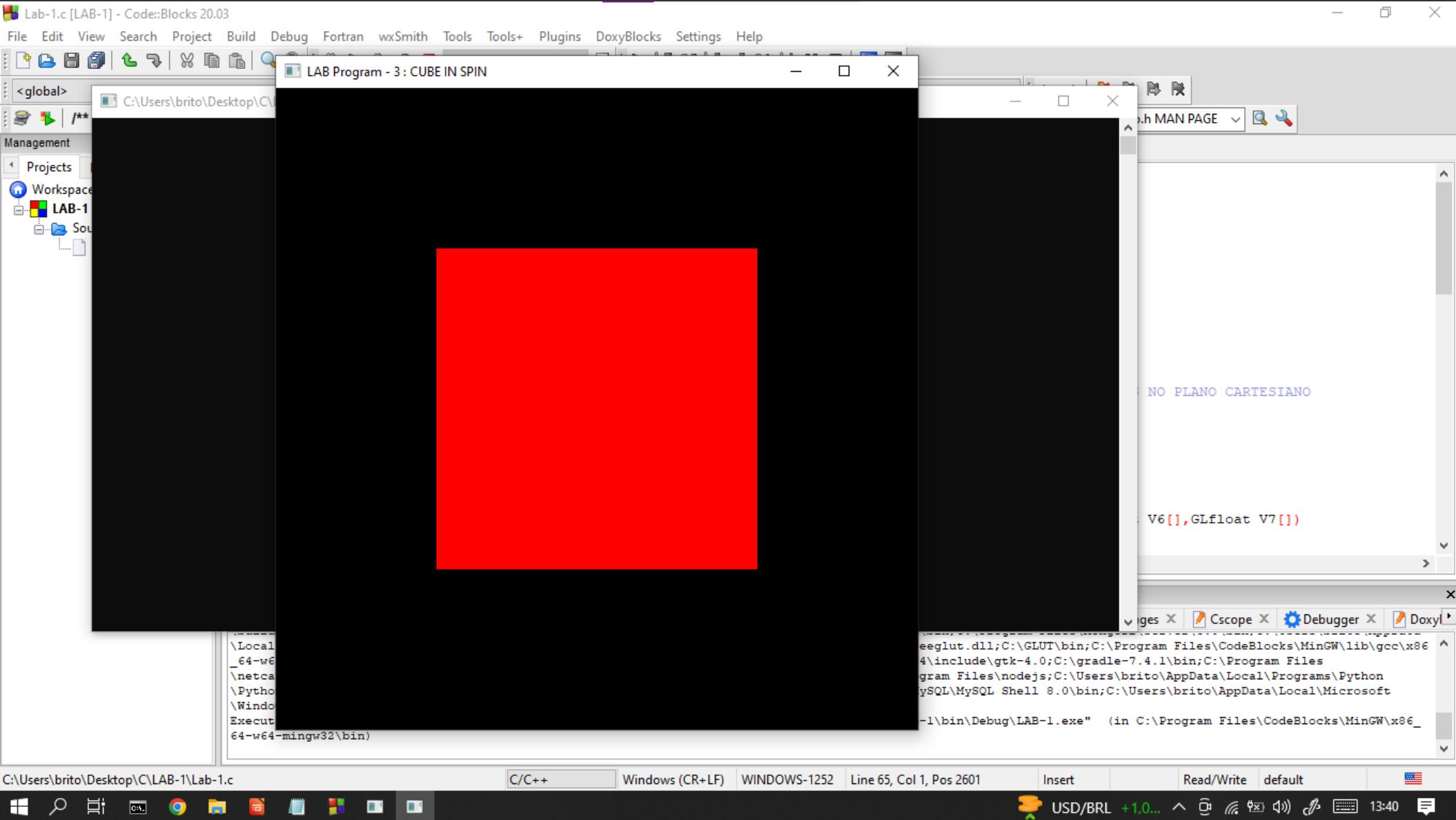
Code::Blocks Search results Ccc C Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope Debugger Doxygen

```
\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\WindowsApps;C:\Users\brito\.dotnet\tools;C:\Users\brito\AppData\Local\atom\bin
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\LAB-1\bin\Debug\LAB-1.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_64-w64-mingw32\bin)
Process terminated with status -1073741510 (0 minute(s), 9 second(s))
```

Para rodar

- iniciei um novo projeto
- rodei primeiro em c++
- Deletei a pasta do c++
- criei o projeto Lab-1.c
 - buil (compilei)
 - run (rodei)

Assim deu certo



```
55     MyInit();                                // CRIANDO NOSSA FUNÇÃO
56     glutDisplayFunc (Draw);
57     glutId
58     (void) glutGameModeString(); void
59     (void) glutGet(); int
60     (void) glutGetColor(); GLfloat
61     (void) glutGetMenu(); int
62     (void) glutGetModifiers(); int
63     (void) glutGetWindow(); int
64     (void) glutHideOverlay(); void
65     (void) glutHideWindow(); void
66     (void) glutIconifyWindow(); void
67     (void) glutIdleFunc(); void
68     (void) glutIgnoreKeyRepeat(); void
69     # glutInit
```

FUNÇÃO OBRIGATÓRIA

54 s

Logs & others

Code::Blocks

```
\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Windows Apps;C:\Users\brito\.dotnet\tools;C:\Users\brito\AppData\Local\atom\bin
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\LAB-1\bin\Debu
```

```
54     glutCreateWindow("LAB Program - 3 : CUBE IN SPIN");           // TITULO DA JANELA
55     MyInit();                                         // CRIANDO NOSSA FUNÇÃO
56     glutDisplayFunc(Draw);
57     glutIdleFunc(); // Função que é executada quando não houver desenho
58     glutMainLoop(); // Função que é executada quando houver desenho
59     return 0;
60 }
61
62 // https://www.youtube.com/watch?v=wG_VaSr6a6c&t=1254s
63 //
```

```
47 int main(int C, char *V[])
48 {
49     glutInit(&C,V);
50     glutInitWindowPosition(250,50);           // POSIÇÃO DA JANELA
51     glutInitWindowSize(600,600);             // TAMANHO E LARGURA DA JANELA
52     glutInitDisplayMode(GLUT_RGB | GLUT_DOUBLE | GLUT_DEPTH); // A COMBINAÇÃO DES
53     // INICIALIZANDO
54     glutCreateWindow("LAB Program - 3 : CUBE IN SPIN");      // TITULO DA JANELA
55     MyInit();                                         // CRIANDO NOSSA FUNÇÃO
56     glutDisplayFunc(Draw);
57     glutIdleFunc(Spin); ←
58     glutMainLoop();                                // FUNÇÃO OBRIGATORIA
59     return 0;
60 }
61
62 // https://www.youtube.com/watch?v=wG_VaSr6a6c&t=1254s
63 // parada 20:55
64
65
66
67
```

The screenshot shows a C IDE interface with a code editor window titled '*Lab-1.c'. The code is a simple OpenGL application using glut.h. It includes headers, defines two functions (Spin and MyInit), and implements a Face function that draws a rectangle.

```
1 #include <GL/glu.h>
2 #include <GL/glut.h>
3
4 void Spin()
5 {
6
7 }
8
9 void MyInit()
10 {
11     glClearColor(0,0,0,1);           // FUNÇÃO PARA AS CORES DA JANELA
12     glColor3f(1,0,0);              // RECEBE VALORES FLOAT PARA DAR CO
13 }
14
15 void Face(GLfloat A[],GLfloat B[],GLfloat C[],GLfloat D[])
16 {
17     glBegin(GL_POLYGON);          // INICIA O RETANGULO
18     glVertex3fv(A);              // CADA PAR DE VALOR REPRESENTA AS
19     glVertex3fv(B);
20     glVertex3fv(C);
21     glVertex3fv(D);
22 }
```

```
3                                     };
4         glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_
5
6         glRc
7         (void) glReadPixels(); void ^[4],V[5],V[6],V[7]);
8         (void) glRectd(); void
9         (void) glRectdv(); void
10        (void) glRectf(); void
11        (void) glRectfv(); void
12        (void) glRecti(); void
13        (void) glRectiv(); void
14        (void) glRects(); void
15        (void) glRectsv(); void
16        (void) glRenderMode(); GLint
17        (void) glRotated(); void
18        (void) glRotatef(); void
```

Build log X Build mes
in;C:\Users\brito\AppData\Programs\Python\Python
rs\brito\AppData\Local\le_runner.exe" "C:\Use
nute(s), 35 second(s))

```
41                         { 0.5,-0.5,-0.5},  
42                         {-0.5,-0.5,-0.5}  
43                     };  
44         glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIMPANDO O BUFFER DA COR DE BACKGROUND  
45  
46         glRotatef(0)  
47         Cube(V[0] void glRotatef(GLfloat angle, GLfloat x, GLfloat y, GLfloat z)  
48         /** DESENHANDO UM RETANGULO **/  
49         //glPointSize(5); // TAMANHO DO RETANGULO  
50         //TERMINA O RETANGULO  
51         //ATUALIZA OS DADOS
```

& others

```
38
39                         {-0.5, 0.5,-0.5},           // PONTOS DOS RETANGULOS COORDENADAS
40                         { 0.5, 0.5,-0.5},
41                         { 0.5,-0.5,-0.5},
42                         {-0.5,-0.5,-0.5}
43         };
44     glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);    // LIMPANDO O BUFFER DA COR DE BACKGROUND
45
46     glRotatef(90,0,1,0);
47     Cube(V[0],V[1],V[2],V[3],V[4],V[5],V[6],V[7]);
48     /** DESENHANDO UM RETANGULO **/
49     //glPointSize(5);                                     // TAMAÑO DO RETANGULO
50     //glEnd();                                         // TERMINA O RETANGULO
51     //glDepthFunc(GL_LESS);                           // ATIVAR OS DEPTOS
```

gs & others

Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X Cscope X Debug

netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Mi

```
--          ( 0.0, 0.0, 0.0 ),
42             {-0.5,-0.5,-0.5}
43         };
44     glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIMPANDO O BUFFER DA COR DE BACKGROUND
45
46     glRotatef(90,0,1,0); // ANGULOS DE ROTAÇÃO ←
47     Cube (V[0],V[1],V[2],V[3],V[4],V[5],V[6],V[7]);
48     /** DESENHANDO UM RETANGULO **/
49     //glPointSize(5); // Tamanho do Retangulo
50     //glBegin(GL_QUADS); // Termina o Retangulo
51     //glEnd(); // Atualiza os pixels
```

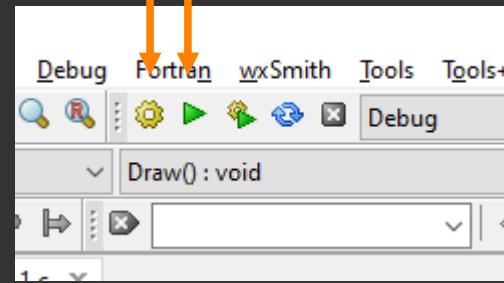
x others

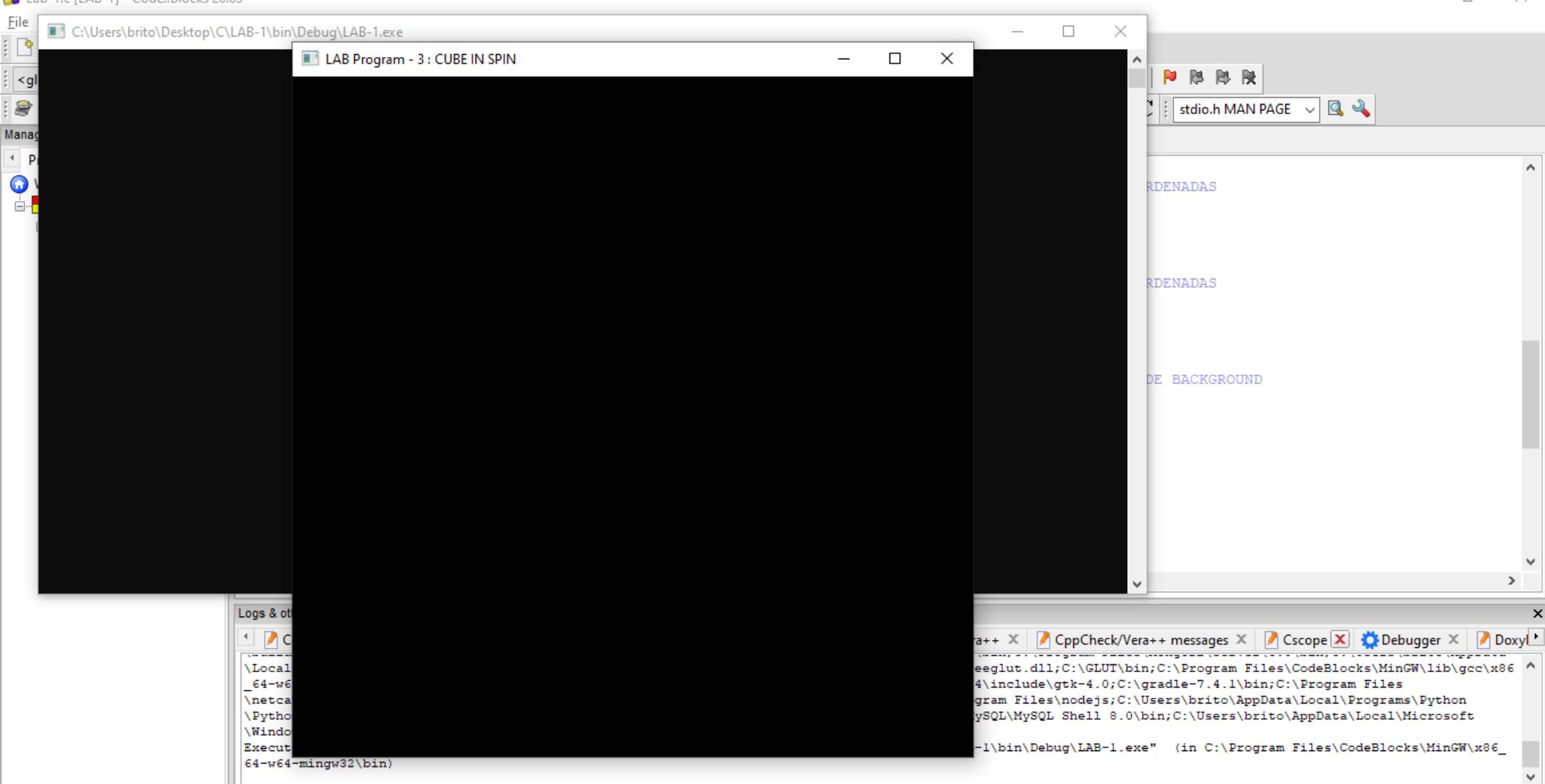
```
39         {-0.5, 0.5,-0.5}, // PONTOS DOS RETANGULOS COORDENADAS
40         { 0.5, 0.5,-0.5},
41         { 0.5,-0.5,-0.5},
42         {-0.5,-0.5,-0.5}
43     };
44     glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIMPANDO O BUFFER DA COR DE
45     GL1d
46     (●) glLighti(): void // ANGULOS DE ROTAÇÃO
47     (●) glLightiv(): void
48     (●) glLightModelf(): void
49     (●) glLightModelfv(): void
50     (●) glLightModeli(): void
51     (●) glLightModeliv(): void
52 } // TERMINA O RETANGULO
53 in (●) glLineStipple(): void
54 (●) glLineWidth(): void
55 (●) glListBase(): void
56 (●) glLoadIdentity(): void
57 (●) glLoadMatrixd(): void
58 netcat-1.12;C:(●) glLoadMatrixf(): void
Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8.0\bin;
WindowsApps;C:\Users\brito\.dotnet\tools;C:\Users\brito\AppData\Local\atom\bin
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\LAB-1\bin\Debug\LAB-1.exe"
-i-w64-mingw32\bin)
Process terminated with status -1073741510 (0 minute(s), 35 second(s))
```

```
41                         { 0.5,-0.5,-0.5},  
42                         {-0.5,-0.5,-0.5}  
43                     };  
44         glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIMPPANDO O BUFFER DA CO  
45         glLoadIdentity(); // ANGULOS DE ROTAÇÃO  
46         glRotatef(90, void glLoadIdentity(void)  
47             Cube(V[0],V[1],V[2],V[3],V[4],V[5],V[6],V[7]); // DESENHANDO UM RETANGULO  
48         /** DESENHANDO UM RETANGULO **/  
49         //glPointSize(5); // TAMANHO DO RETANGULO  
50         //glutSwapBuffers(); // TERMINA O RETANGULO  
51         glutSwapBuffers(); // ATUALIZA OS PIXELS  
52     }
```

```
1           { 0.5,-0.5,-0.5},  
2           {-0.5,-0.5,-0.5}  
3       };  
4   glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIMPPANDO O BUFFER DA COR DE BACKGROUND  
5   glLoadIdentity();  
6   glRotatef(90,0,1,0); // ANGULOS DE ROTAÇÃO  
7   Cube(V[0],V[1],V[2],V[3],V[4],V[5],V[6],V[7]);  
8   /** DESENHANDO UM RETANGULO **/  
9   //glPointSize(5); // TAMANHO DO RETANGULO  
0   //glBegin(GL_QUADS); // TERMINA O RETANGULO  
1   glutSwapBuffers(); // ATUALIZA OS PIXELS  
2  
3   int main(int C, char *V[])  
4 ,
```

mers



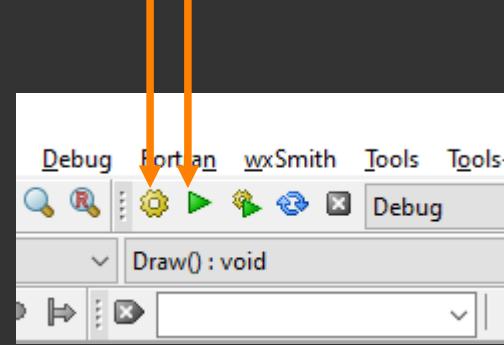


```
40                         { 0.5, 0.5,-0.5},  
41                         { 0.5,-0.5,-0.5},  
42                         {-0.5,-0.5,-0.5}  
43                     };  
44         glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT); // LIMPANDO O BUFFER DA COR DE BACKGROUND  
45         glLoadIdentity();  
46         glRotatef(45,0,1,0); ← // ANGULOS DE ROTAÇÃO  
47         Cube (V[0],V[1],V[2],V[3],V[4],V[5],V[6],V[7]);  
48         /** DESENHANDO UM RETANGULO **/  
49         //glPointSize(5); // TAMANHO DO RETANGULO  
50         //glBegin(GL_QUADS); // TERMINA O RETANGULO  
51         glutSwapBuffers(); // ATUALIZA OS PIXELS  
52     }  
53     int main(int C, char *V[]){  
54 }
```

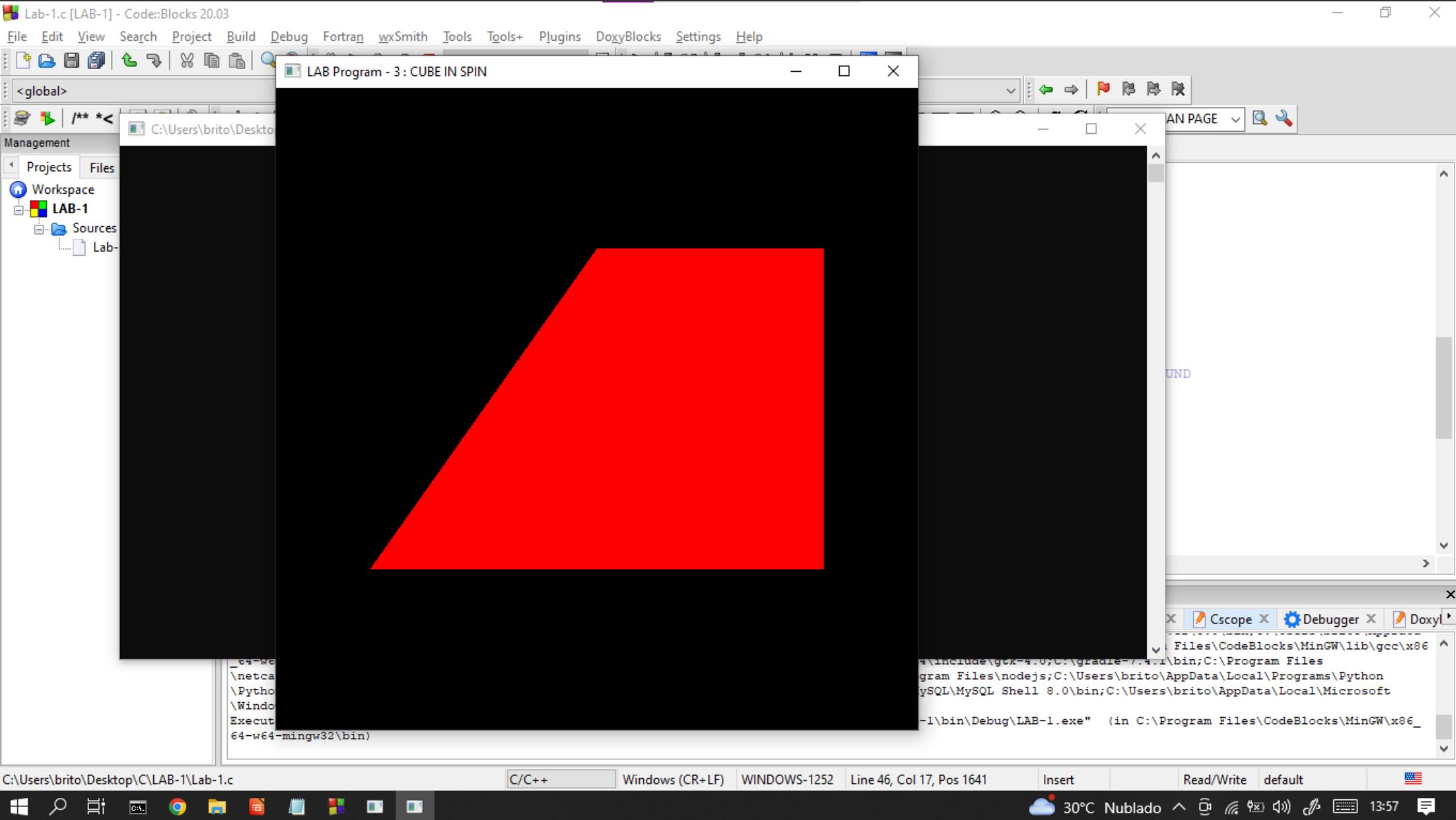
& others

Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/Vera++ messages X C

Mude o ângulo de rotação para 45



Por praticidade vou me referir a construa e rode



```
24
25     void Cube(GLfloat V0[], GLfloat V1[], GLfloat V2[], GLfloat V3[], GLfloat V4[], GLfloat V5[])
26 {
27     glCo
28     (●) glClearDepth(): void
29     (●) glClearIndex(): void
30     (●) glClearStencil(): void
31     (●) glClipPlane(): void
32     (●) glColor3b(): void // FUNÇÃO CRIADA PARA ATEN
33     (●) glColor3bv(): void
34     (●) glColor3d(): void
35     (●) glColor3dv(): void
36     (●) glColor3f(): void // PONTOS DOS RETANGULOS O
37     (●) glColor3fv(): void
38     (●) glColor3i(): void
39     (●) glColor3iv(): void
```

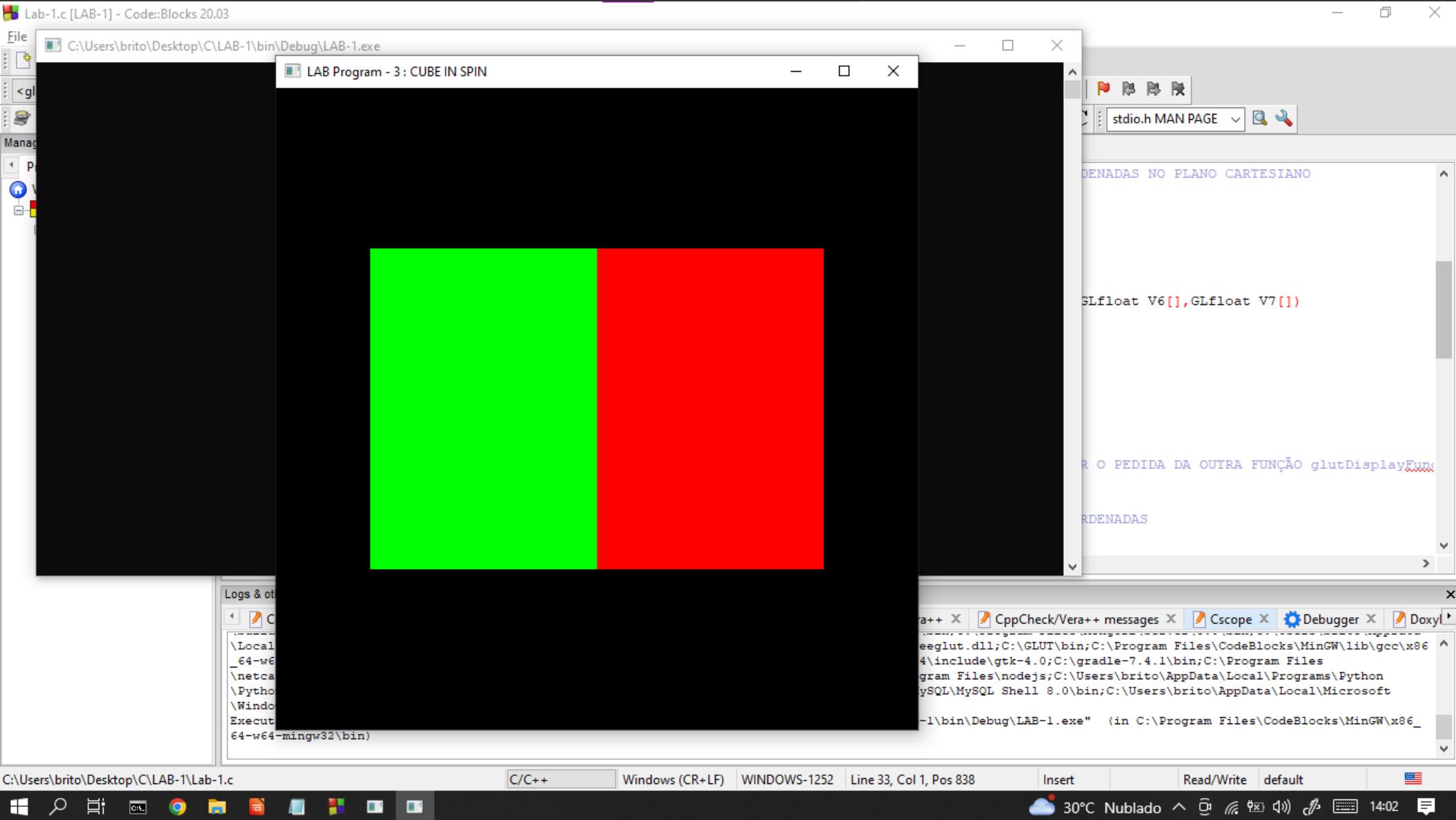
Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++ X CppCheck/

```
at-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\nodejs;0
on310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Shell 8
owsApps;C:\Users\brito\.dotnet\tools;C:\Users\brito\AppData\Local\atom\bin
sing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\brito\Desktop\C\LAB-1\bin\Debug\LAB-1
\minim-22\bin"
```

```
22     glEnd();
23 }
24
25 void Cube(GLfloat V0[],GLfloat V1[],GLfloat V2[],GLfloat V3[],GLfloat V4[],GLfloat V5[],GLfloat V6[],GL
26 {
27     glColor3f(1,0,0);
28     Face(V0,V1,V2,V3);
29     Face(V4,V5,V6,V7);
30 }
31
32 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA C
33 {
```

```
21         glVertex3fv(D);
22     glEnd();
23 }
24
25 void Cube(GLfloat V0[], GLfloat V1[], GLfloat V2[], GLfloat V3[], GLfloat V4[], GLfloat V5[], GLfloat V6[], GLfloat V7[])
26 {
27     glColor3f(1,0,0);
28     Face(V0,V1,V2,V3);
29
30     glColor3f(0,1,0);
31     Face(V4,V5,V6,V7);
32 }
33
34 void Draw() // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA FUNÇÃO glutDisplayFunc
```

BUILD E DEPOIS RUN



```
45                         {-0.5,-0.5,-0.5}
46                     };
47         glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);      // LIMPANDO O BUFFER DA COR DE BACKGROUND
48
49         glLoadIdentity();
50         glRotatef(T,0,1,0); ←————— // ANGULOS DE ROTAÇÃO
51
52         Cube(V[0],V[1],V[2],V[3],V[4],V[5],V[6],V[7]);
53         /** DESENHANDO UM RETANGULO **/
54         //glPointSize(5);                                // TAMANHO DO RETANGULO
55
56         glutSwapBuffers();                            // TERMINA O RETANGULO
57
58     }
59     int main(int C, char *V[])
60 }
```

```
5     void Spin()
6     {
7         T = T + 1;
8         if(T > 360)
9             T = 0;
10        glutH
11    } (●) glutLeaveGameMode(): void
12    (●) glutMainLoop(): void
13    (●) glutMenuStateFunc(): void
14    (●) glutMenuStatusFunc(): void
15    (●) glutMotionFunc(): void
16    (●) glutMouseFunc(): void
17    (●) glutOverlayDisplayFunc(): void
18    (●) glutPassiveMotionFunc(): void
19    (●) glutPopWindow(): void
20    (●) glutPositionWindow(): void
21    (●) glutPostOverlayRedisplay(): void
22    (●) glutPostRedisplay(): void
```

FUNÇÃO PARAS AS CORE
RECEBE VALORES FLOAT

float D[])

/ INICIA O RETANGULO

/* CADA PONTE DE MUITO DE

Logs & others

Code::Blocks X Search results X Cccc X Build log X Build messages X CppCheck/Vera++

\netcat-1.12;C:\apache-maven-3.8.6\bin;C:\gbdk\bin;C:\Users\brito\AppData\Roaming\nvm;C:\Program Files\Python310\Scripts;C:\Users\brito\AppData\Local\Programs\Python\Python310;C:\Program Files\MySQL\MySQL Server 8.0\bin

```
3     glutInit( &argc, &argv ); // CRIAÇÃO
4
5     void Spin()
6     {
7         T = T + 1;
8         if(T > 360)
9             T = 0;
10        glutPostRedisplay();
11    }
12
```

```
void Spin()
{
    T = T + 1;
    if(T > 360)
        T = 0;
    glutPostRedisplay();
}

void MyInit()
```

```
void glutPostRedisplay(void)
```

```
5     GLfloat T = 0;                                // CRIAMOS
6
7 void Spin()
8 {
9     T = T + 1;
10    if(T > 360)
11        T = 0;
12    glutPostRedisplay();
```

```
// |
```

**COMPILE DEPOIS
RUN**

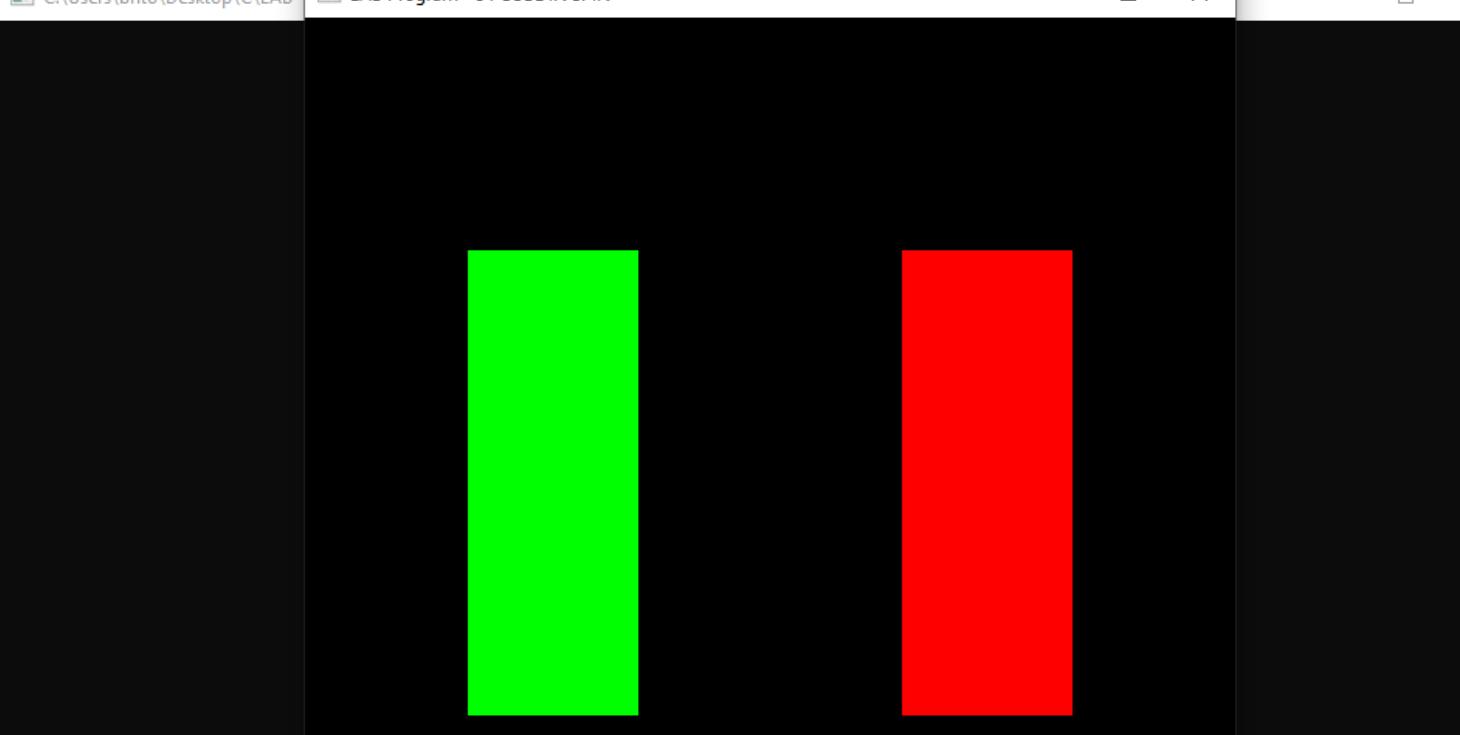


```
3     GLfloat T = 0;                                // CRIAMOS UMA VARIÁVEL GLOBAL T
4
5     void Spin()
6     {
7         T = T + 0.5;                               // VELOCIDADE DE ROTAÇÃO
8         if(T > 360)
9             T = 0;
10        glutPostRedisplay();                     //
11    }
12
13    void MyInit()
```

**ALTERE A VELOCIDADE PARA GIRAR MAIS LENTO
DEPOIS BUILD E DEPOIS RUN**

C:\Users\brito\Desktop\C\LAB-1

LAB Program - 3 : CUBE IN SPIN



stdio.h MAN PAGE

```
FILE *fopen(const char *filename, const char *mode);
void *malloc(size_t size);
void free(void *ptr);
void *calloc(size_t nmemb, size_t size);
void *realloc(void *ptr, size_t size);
size_t fread(void *ptr, size_t size, size_t nmemb, FILE *stream);
size_t fwrite(const void *ptr, size_t size, size_t nmemb, FILE *stream);
void perror(const char *str);
char *gets(char *str); // deprecated
char *fgets(char *str, int n, FILE *stream);
```



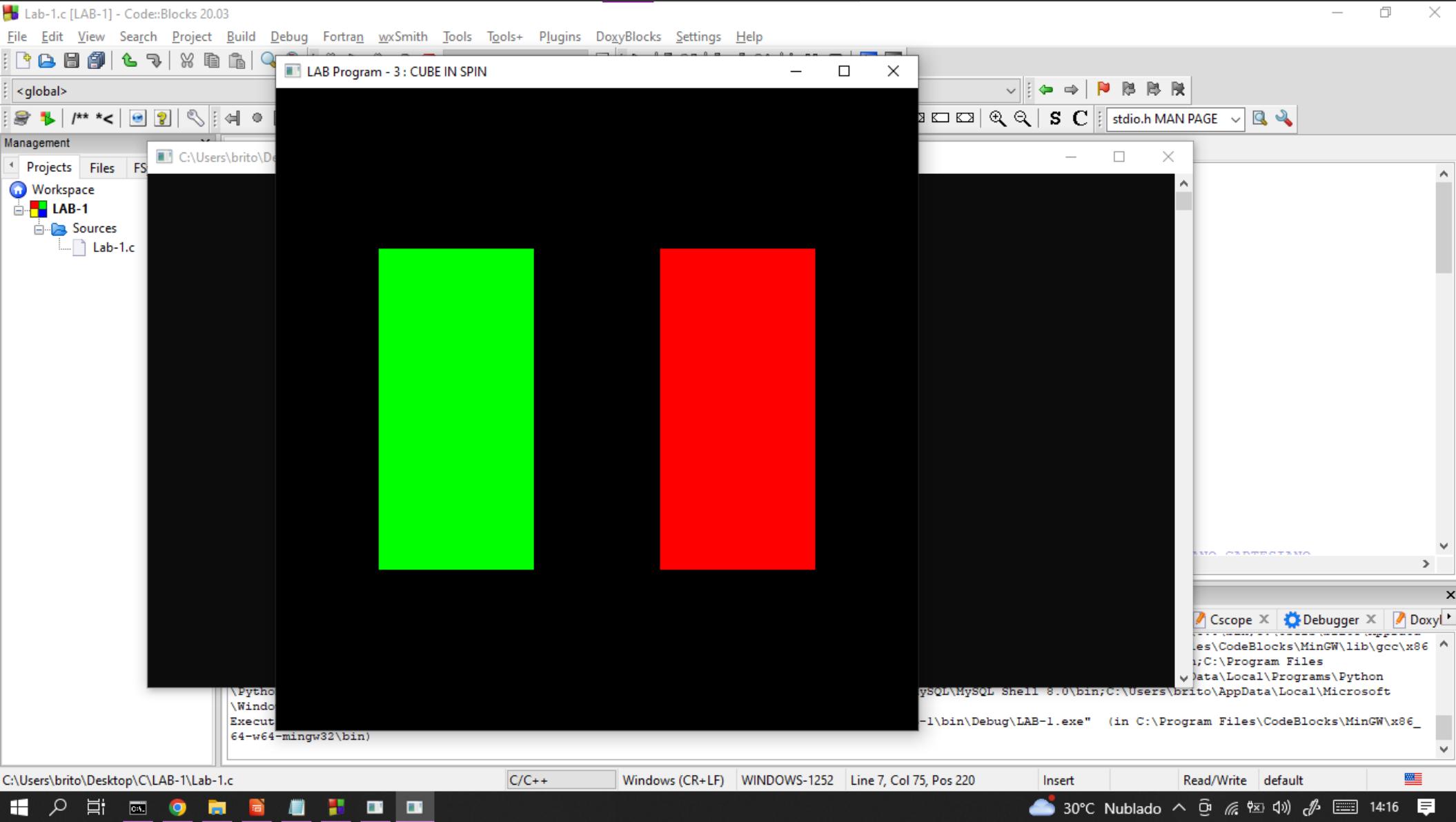
```
\Local
_64-w6
\netc
\Python
\Windo
\Windo
Execut
64-w64-mingw32\bin)
```

C++ X CppCheck/Vera++ messages X Cscope X Debugger X Doxygen X

```
eeglut.dll;C:\GLUT\bin;C:\Program Files\CodeBlocks\MinGW\lib\gcc\x86
4\include\gtk-4.0;C:\gradle-7.4.1\bin;C:\Program Files
gram Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python
ySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft
-1\bin\Debug\LAB-1.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_
```

```
3     GLfloat T = 0;                                // CRIAMOS UMA VARIÁVEL GLOBAL T
4
5     void Spin()
6     {
7         T = T + 0.25;                            // VELOCIDADE DE ROTAÇÃO
8         if(T > 360)
9             T = 0;
10        glutPostRedisplay();                   //
11    }
12
```

COMPILE DEPOIS RUN



```
4
5     void Spin()
6 {
7     T = T + 0.05;                                // VELOCIDADE DE ROTAÇÃO
8     if(T > 360)
9         T = 0;
10    glutPostRedisplay();                         //
11 }
12
```

COMPILE DEPOIS RUN

```
26     glEnd();
27 }
28
29 void Cube(GLfloat V0[],GLfloat V1[],GLfloat V2[],GLfloat V3[],GLfloat V4[],GLfloat V5[],GLfloat V6[],GLfloat V7[])
30 {
31     glColor3f(1,0,0);
32     Face(V0,V1,V3,V2); |←
33
34     glColor3f(0,1,0);
35     Face(V4,V5,V6,V7);
36 }
37
```

COMPILE DEPOIS RUN



Management

Project

Work

LA

...

C:\Users\brito\Desktop\CLAB-

LAB Program - 3 : CUBE IN SPIN

- □ X

- □ X

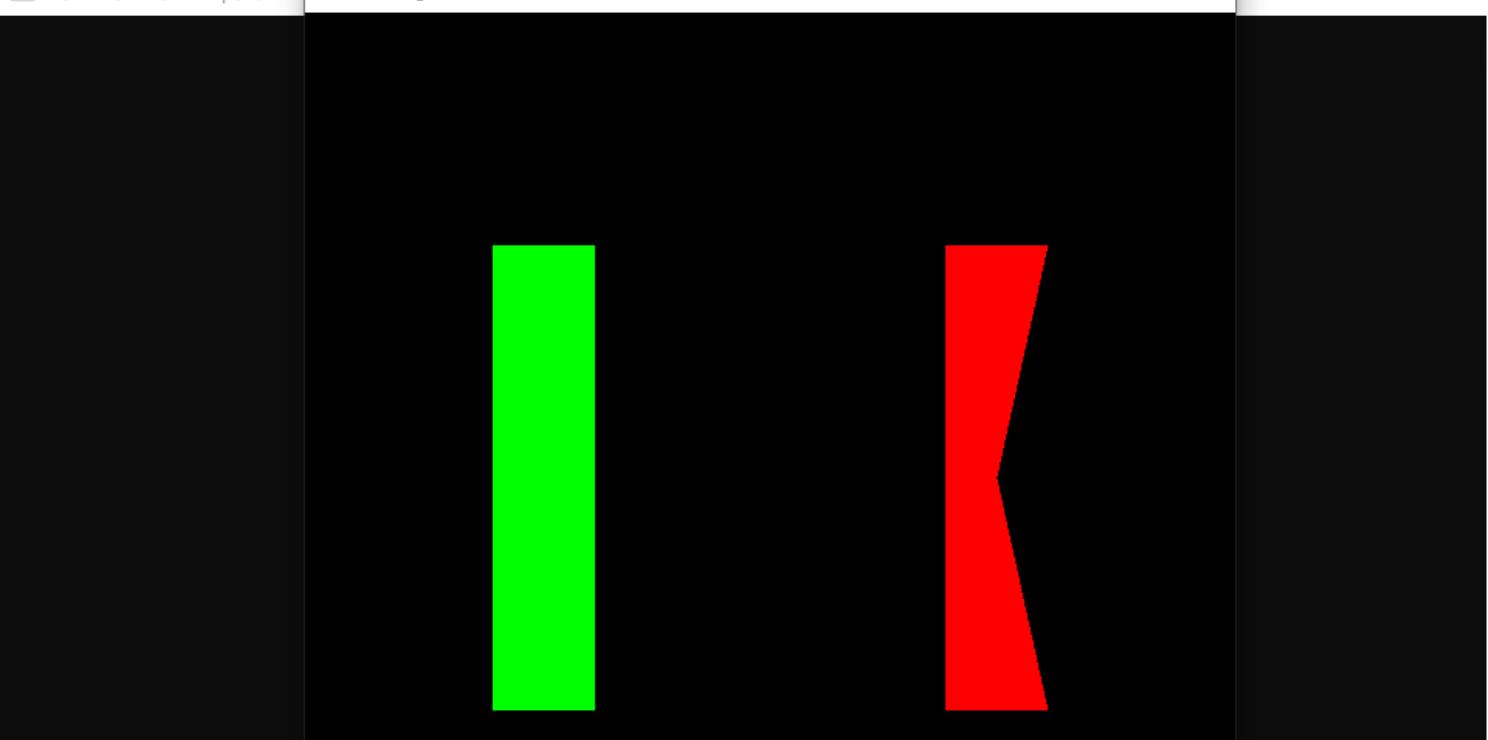
- □ X

ADAS NO PLANO CARTESIANO

```
float V6[], GLfloat V7[])

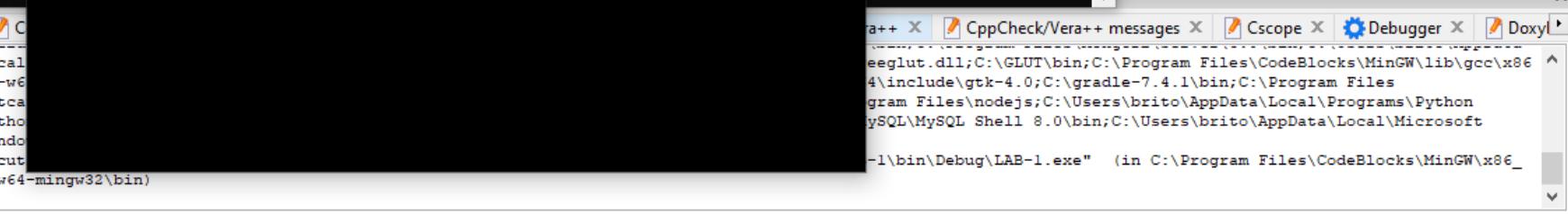
PEDIDA DA OUTRA FUNÇÃO glutDisplayFunc
```

NADAS



a++ x CppCheck/Vera++ messages x Cscope x Debugger x Doxy

```
eeglut.dll;C:\GLUT\bin;C:\Program Files\CodeBlocks\MinGW\lib\gcc\x86_4\include\gtk-4.0;C:\gradle-7.4.1\bin;C:\Program Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python\ySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\1\bin\Debug\LAB-1.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_
```



```
    .
    .
void Cube(GLfloat V0[], GLfloat V1[],
{
    glColor3f(1,0,0);
    Face(V0,V1,V2,V3);
```

VOLTE OS VALORES

```
    }

    void Cube(GLfloat V0[], GLfloat V1[], GLfloat V2[], GLfloat V3[], GLfloat V4[], GLfloat V5[], GLfloat V6[], GLfloat V7[])
    {
        glColor3f(1,0,0);
        Face(V0,V1,V2,V3); // 

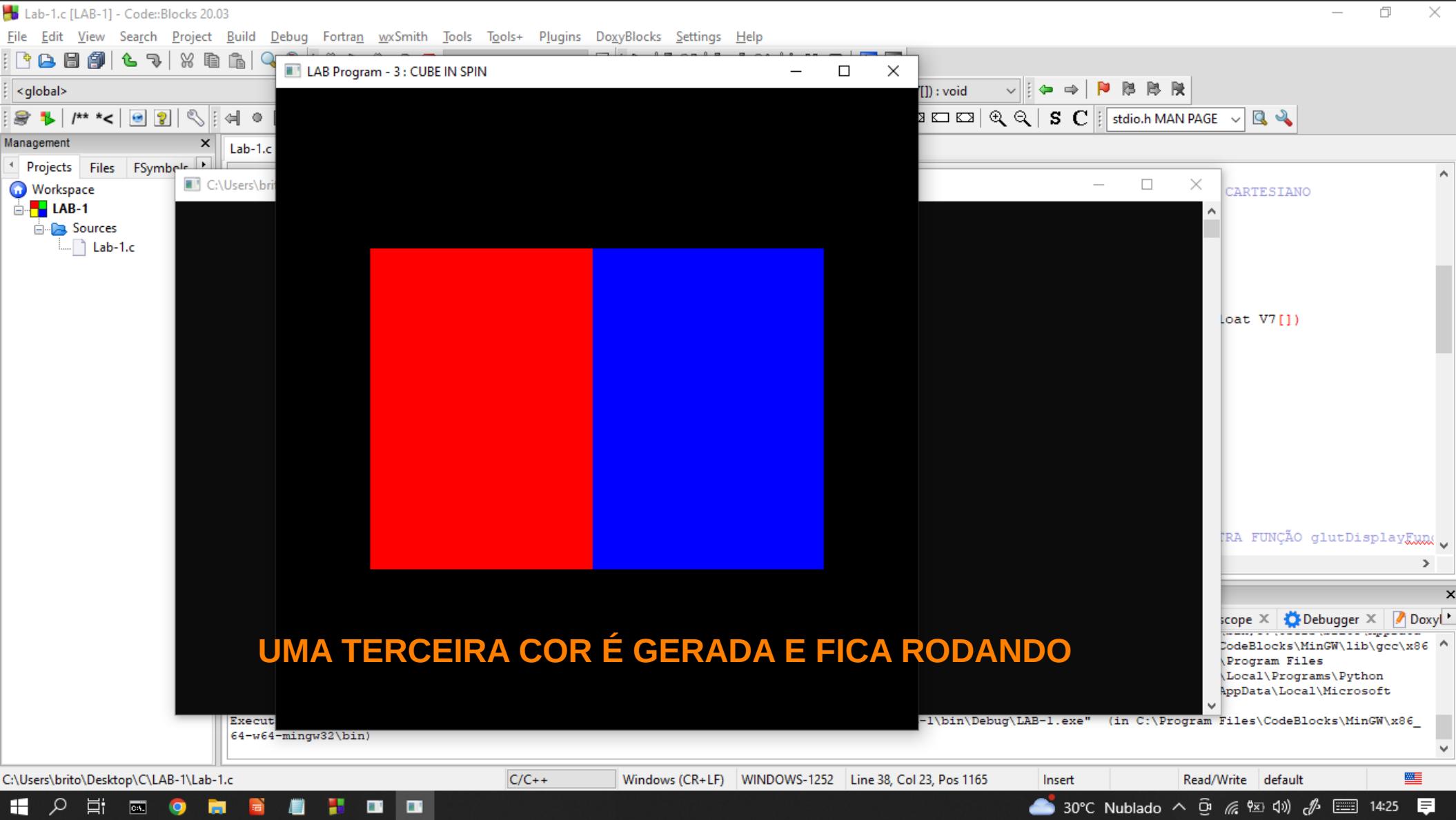
        glColor3f(0,1,0);
        Face(V4,V5,V6,V7);

        glColor3f(0,0,1);
        Face(V0,V3,V7,V4); ←

    }

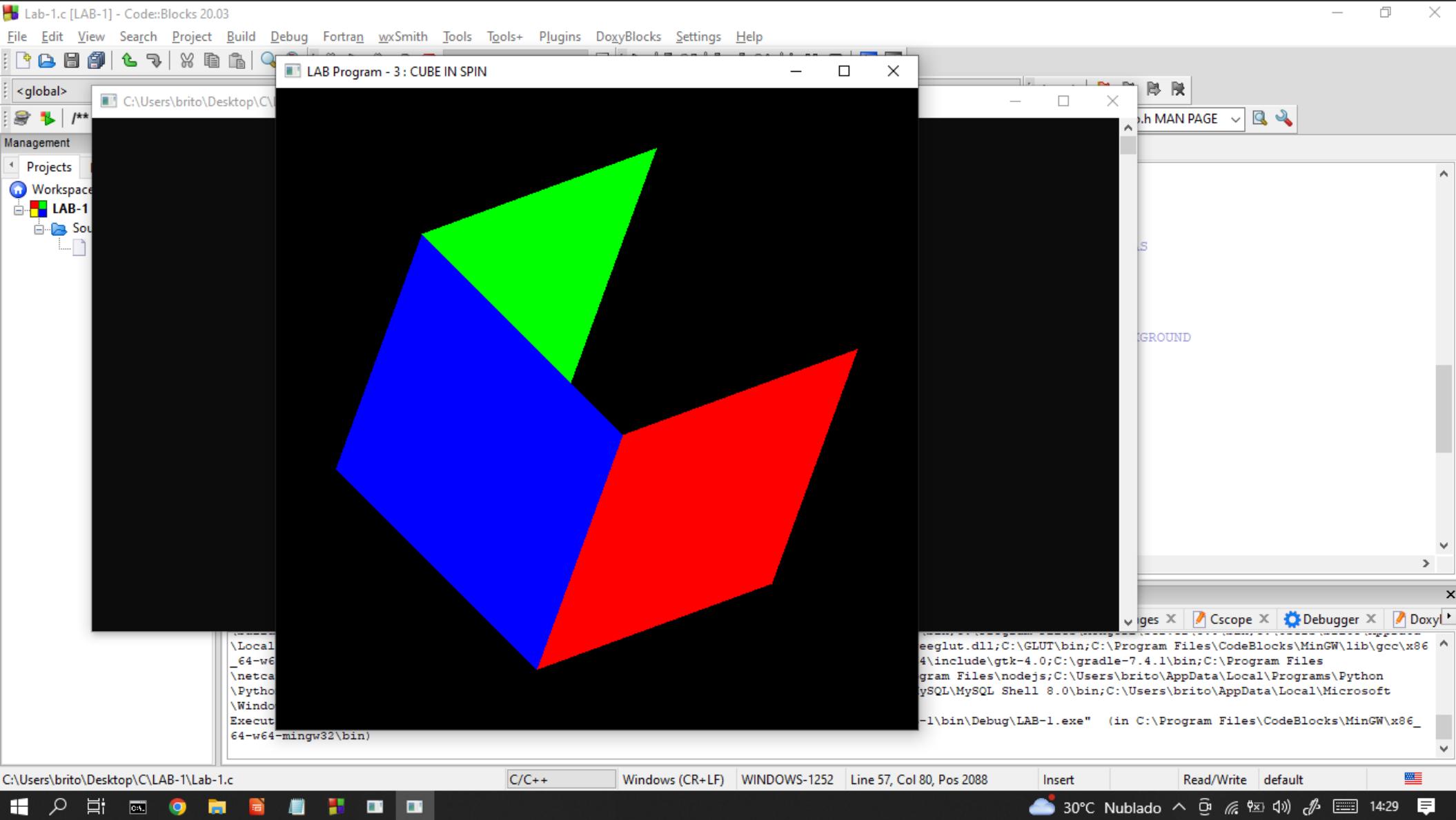
    void Draw()
    {
        // FUNÇÃO CRIADA PARA ATENDER O PEDIDA DA OUTRA FUN
    }
}
```

COMPILE E DEPOIS RUN



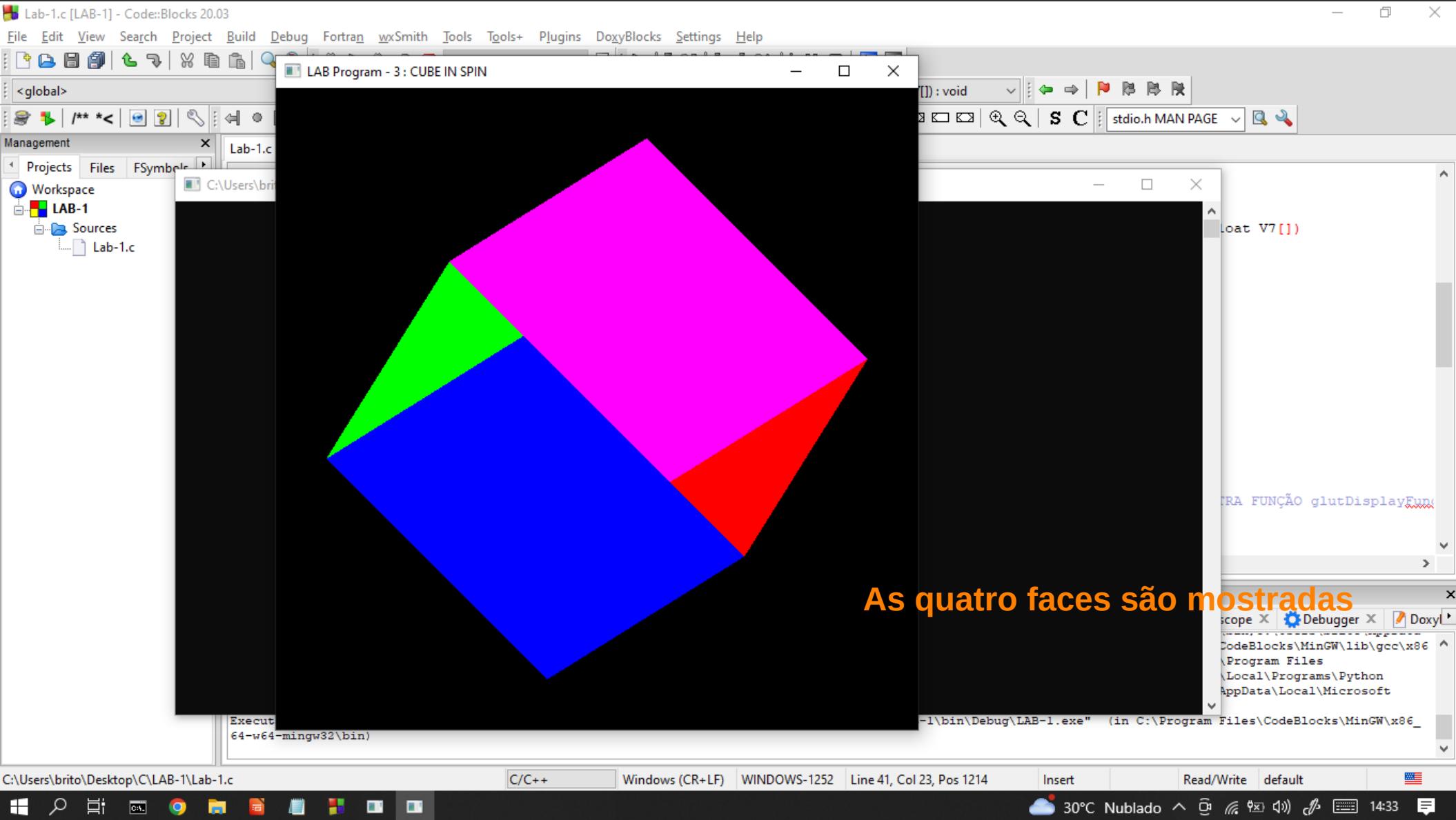
```
        (-0.5,-0.5,-0.5);
    };
glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);      // LIMPPANDO O BUFFER DA COR
glLoadIdentity();
glRotatef(T,1,1,0); ←                                // ANGULOS DE ROTAÇÃO
Cube(V[0],V[1],V[2],V[3],V[4],V[5],V[6],V[7]);
/** DESENHANDO UM RETANGULO */
//glPointSize(5);                                     // TAMAÑHO DO RETANGULO
// TERMINA O RETANGULO
```

COMPILE E DEPOIS RUN



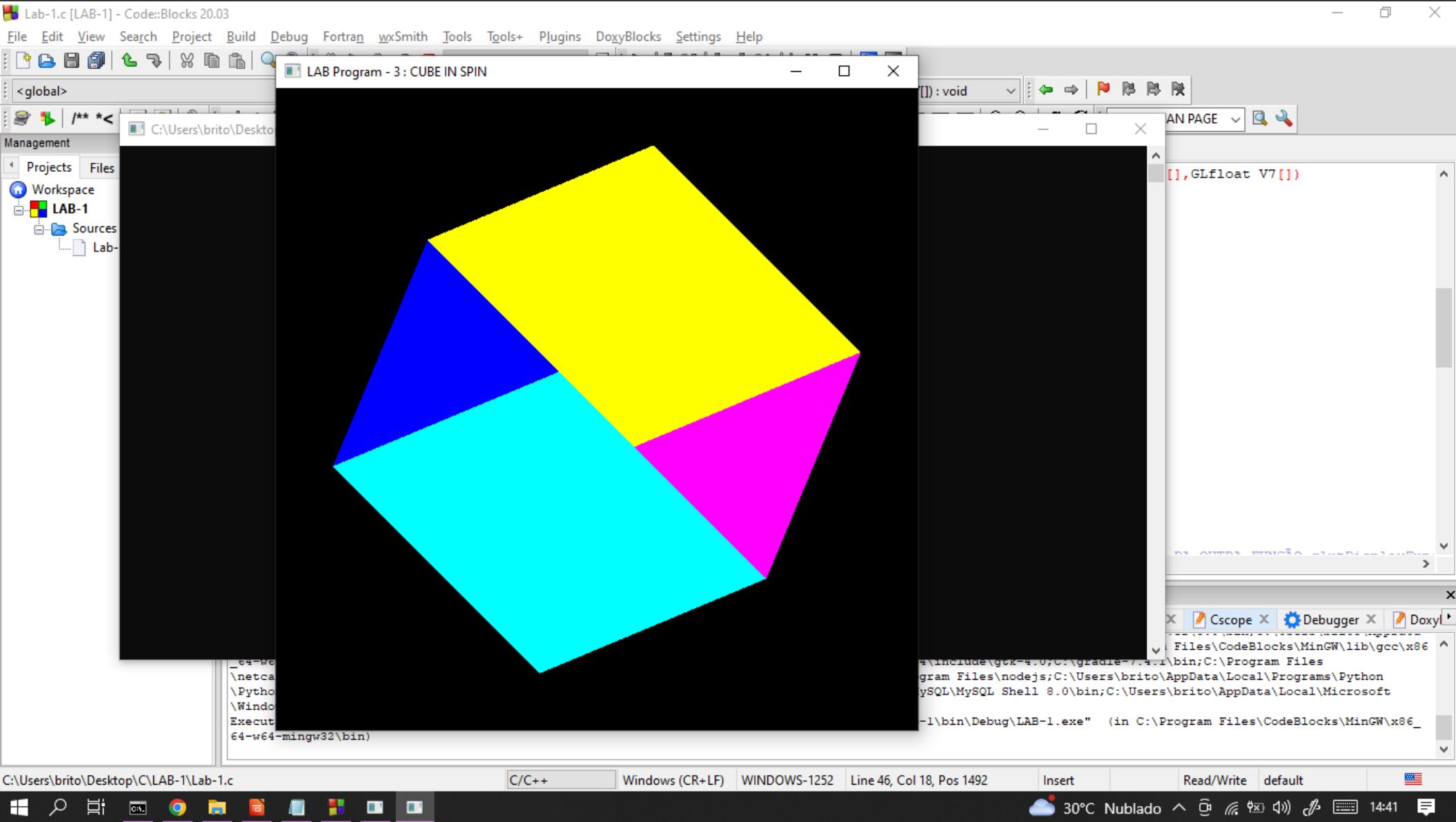
```
27 }  
28  
29     void Cube(GLfloat V0[],GLfloat V1[],GLfloat V2[],GLfloat V3[],GLfloat V4[],GLfloat V5[  
30 {  
31     glColor3f(1,0,0);  
32     Face(V0,V1,V2,V3); //  
33  
34     glColor3f(0,1,0);  
35     Face(V4,V5,V6,V7);  
36  
37     glColor3f(0,0,1);  
38     Face(V0,V3,V7,V4);  
39  
40     glColor3f(1,0,1);  
41     Face(V1,V2,V6,V5);  
42 }  
43  
44     void Draw() // FUNÇÃO CRIADA PARA ATEN  
45 {  
46     GLfloat V[8][3] = {
```

Compile e depois run



```
*Lab-1.c X
29     void Cube(GLfloat V0[],GLfloat V1[],GLfloat V2[],GLfloat V3[],GLfloat V4[],GLfloat V5[])
30     {
31         glColor3f(1,0,0);
32         Face(V0,V1,V2,V3); // FACE FRONT
33
34         glColor3f(0,1,0); // FACE BACK
35         Face(V4,V5,V6,V7);
36
37         glColor3f(0,0,1);
38         Face(V0,V3,V7,V4); // FACE LEFT
39
40         glColor3f(1,0,1);
41         Face(V1,V2,V6,V5); // FACE RIGHT
42
43         glColor3f(1,1,0);
44         Face(V0,V1,V5,V4); // FACE TOP
45
46         glColor3f(0,1,1);
47         Face(V3,V2,V6,V7); // FACE BOTTOM
48     }
49
50     .....
51 }
```

COMPILE E DEPOIS RUN



```
2
3     void MyInit()
4     {
5         glClearColor(0,0,0,1);
6         glColor3f(1,0,0);
7         glEnable(GL_DEPTH_TEST);
8     }
9
10    void MyDisplay()
11    {
12        glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
13        glLoadIdentity();
14        gluLookAt(0,0,0, 10,0,0, 0,1,0);
15        glBegin(GL_TRIANGLES);
16        glVertex3f(-1,-1,0);
17        glVertex3f(1,-1,0);
18        glVertex3f(0,1,0);
19        glEnd();
20    }
21
22    void MyReshape(int width, int height)
23    {
24        glViewport(0,0,width,height);
25        glMatrixMode(GL_PROJECTION);
26        glLoadIdentity();
27        gluPerspective(45, (double)width/(double)height, 1, 100);
28        glMatrixMode(GL_MODELVIEW);
29    }
30
31    void MyIdle()
32    {
33        glutPostRedisplay();
34    }
35
36    void MyKeyboard(unsigned char key, int x, int y)
37    {
38        if(key == 'q') exit(0);
39    }
40
41    void MyMouse(int button, int state, int x, int y)
42    {
43        if(button == GLUT_LEFT_BUTTON & state == GLUT_DOWN)
44            glutPostRedisplay();
45    }
46
47    void MyMotion(int x, int y)
48    {
49        if(y < 0) y = 0;
50        if(y > 100) y = 100;
51        glutPostRedisplay();
52    }
53
54    void MyTimer(int value)
55    {
56        glutPostRedisplay();
57    }
58
59    void MyInit()
60    {
61        glClearColor(0,0,0,1);
62        glColor3f(1,0,0);
63        glEnable(GL_DEPTH_TEST);
64    }
65
66    void MyDisplay()
67    {
68        glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
69        glLoadIdentity();
70        gluLookAt(0,0,0, 10,0,0, 0,1,0);
71        glBegin(GL_TRIANGLES);
72        glVertex3f(-1,-1,0);
73        glVertex3f(1,-1,0);
74        glVertex3f(0,1,0);
75        glEnd();
76    }
77
78    void MyReshape(int width, int height)
79    {
80        glViewport(0,0,width,height);
81        glMatrixMode(GL_PROJECTION);
82        glLoadIdentity();
83        gluPerspective(45, (double)width/(double)height, 1, 100);
84        glMatrixMode(GL_MODELVIEW);
85    }
86
87    void MyIdle()
88    {
89        glutPostRedisplay();
90    }
91
92    void MyKeyboard(unsigned char key, int x, int y)
93    {
94        if(key == 'q') exit(0);
95    }
96
97    void MyMouse(int button, int state, int x, int y)
98    {
99        if(button == GLUT_LEFT_BUTTON & state == GLUT_DOWN)
100            glutPostRedisplay();
101    }
102
103    void MyMotion(int x, int y)
104    {
105        if(y < 0) y = 0;
106        if(y > 100) y = 100;
107        glutPostRedisplay();
108    }
109
110    void MyTimer(int value)
111    {
112        glutPostRedisplay();
113    }
114
115    void MyInit()
116    {
117        glClearColor(0,0,0,1);
118        glColor3f(1,0,0);
119        glEnable(GL_DEPTH_TEST);
120    }
121
122    void MyDisplay()
123    {
124        glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
125        glLoadIdentity();
126        gluLookAt(0,0,0, 10,0,0, 0,1,0);
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948        glClearColor(0,0,0,1);
949        glColor3f(1,0,0);
950        glEnable(GL_DEPTH_TEST);
951    }
952
953    void MyDisplay()
954    {
954        glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
955        glLoadIdentity();
956        gluLookAt(0,0,0, 10,0,0, 0,1,0);
957        glBegin(GL_TRIANGLES);
958        glVertex3f(-1,-1,0);
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961        glEnd();
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964    void MyReshape(int width, int height)
965    {
966        glViewport(0,0,width,height);
967        glMatrixMode(GL_PROJECTION);
968        glLoadIdentity();
969        gluPerspective(45, (double)width/(double)height, 1, 100);
970        glMatrixMode(GL_MODELVIEW);
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1276    void MyInit()
1
```



```
    }

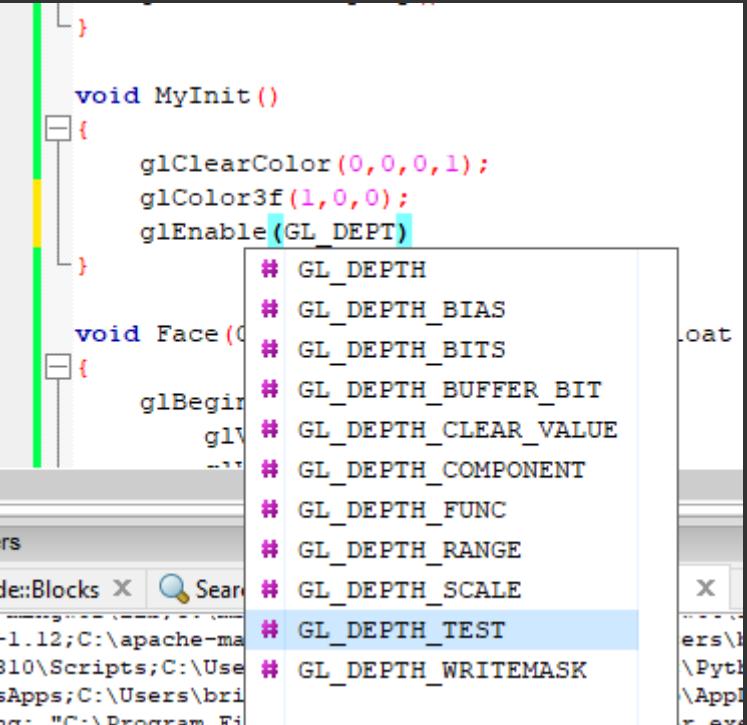
    void MyInit()
    {
        glClearColor(0,0,0,1);
        glColor3f(1,0,0);
        glEnable(GL_DEPTH)

    }

    void Face()
    {
        glBegin(GL_TRIANGLES);
        glVertex3f(-0.5,-0.5,0);
        glVertex3f(0.5,-0.5,0);
        glVertex3f(0,0.5,0);
    }

    void draw()
    {
        glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
        glLoadIdentity();
        glTranslatef(0,0,-5);
        glRotatef(45,1,0,0);
        Face();
        glFlush();
    }
}

int main()
{
    glutInit(&argc,&argv);
    glutInitDisplayMode(GLUT_DOUBLE | GLUT_RGB | GLUT_DEPTH);
    glutCreateWindow("My OpenGL Window");
    glutResiz...
```



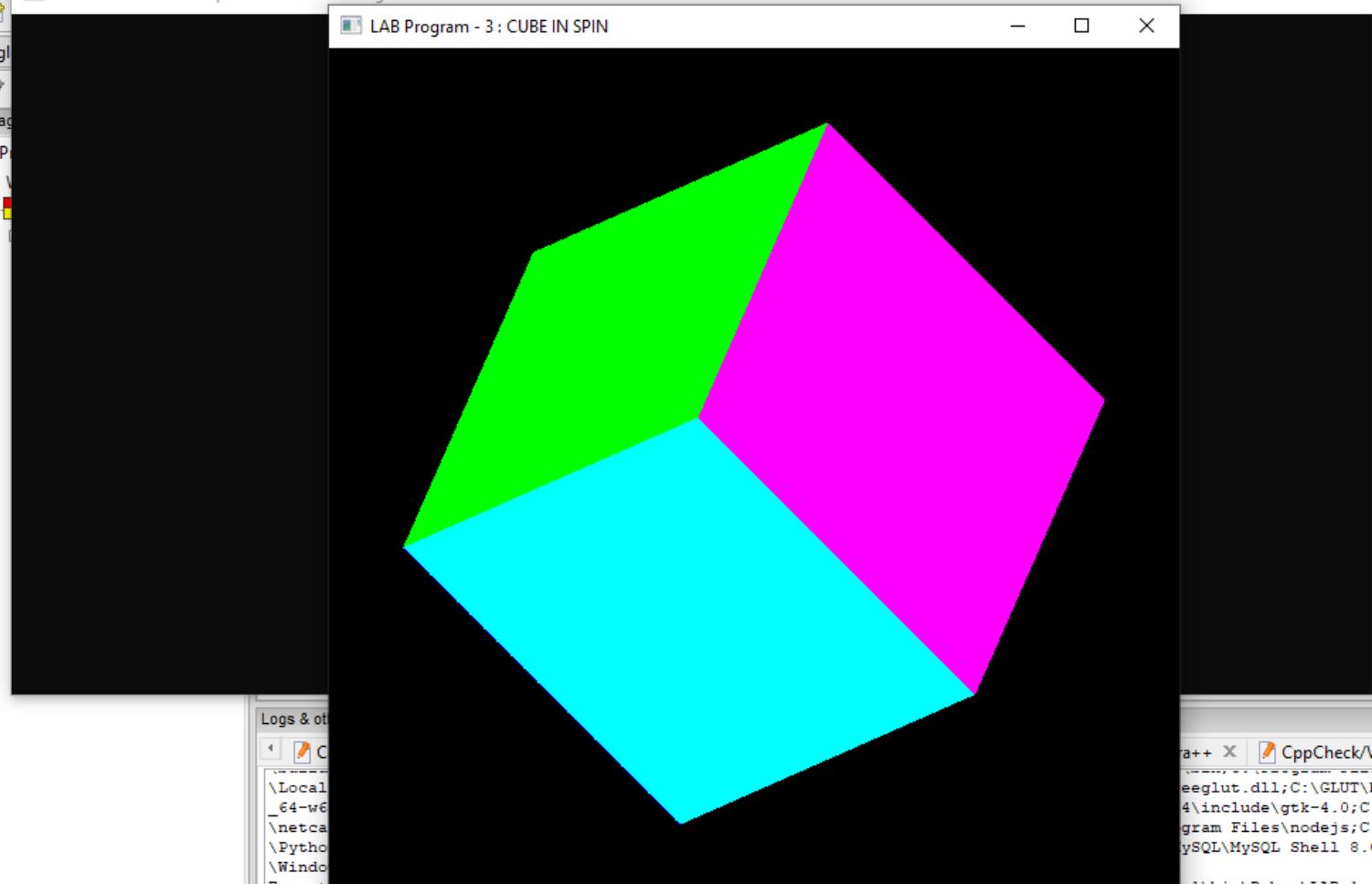
The screenshot shows a code editor with an open tooltip menu. The menu lists several OpenGL constants related to depth testing and buffer management. The item '# GL_DEPTH_TEST' is highlighted with a blue background, indicating it is the current selection or being hovered over.

- # GL_DEPTH
- # GL_DEPTH_BIAS
- # GL_DEPTH_BITS
- # GL_DEPTH_BUFFER_BIT
- # GL_DEPTH_CLEAR_VALUE
- # GL_DEPTH_COMPONENT
- # GL_DEPTH_FUNC
- # GL_DEPTH_RANGE
- # GL_DEPTH_SCALE
- # GL_DEPTH_TEST
- # GL_DEPTH_WRITEMASK

```
1  - }
2
3  void MyInit()
4  {
5      glClearColor(0,0,0,1);           // FUNÇÃO PARAS AS CORES DA JANELA
6      glColor3f(1,0,0);             // RECEBE VALORES FLOAT PARA DAR COR A JANELA
7      glEnable(GL_DEPTH_TEST);       // |
8
9 }
```

COMPILE E DEPOIS RUN

C:\Users\brito\Desktop\CLAB-1\bin\Debug\LAB-1.exe



stdio.h MAN PAGE

JANELA

DENADAS NO PLANO CARTESIANO

a++ x CppCheck/Vera++ messages x Cscope x Debugger x Doxygen x

```
eeglut.dll;C:\GLUT\bin;C:\Program Files\CodeBlocks\MinGW\lib\gcc\x86_4\include\gtk-4.0;C:\gradle-7.4.1\bin;C:\Program Files\nodejs;C:\Users\brito\AppData\Local\Programs\Python\ySQL\MySQL Shell 8.0\bin;C:\Users\brito\AppData\Local\Microsoft\1\bin\Debug\LAB-1.exe" (in C:\Program Files\CodeBlocks\MinGW\x86_
```