Ensure you can connect to matrix before proceeding here.
See the "CP4P_Visual-Studio-demo.pdf" file
> "Transfer, Compile, and Test on matrix"
> Connection Requirements.

Matrix, a Linux (unix) server, uses a command-line character/text-based user interface.
Commands are entered from the keyboard to the local or remote computer.

Your OS has built-in command line utilities to connect from your computer to servers.
The command line is accessed from a "terminal" which can be started in Windows or macOS by launching "Terminal".

Visual Studio or Visual Studio Code > menu > View > Terminal [Ctrl + `]
shows the Developer PowerShell terminal where you can input the same commands to access matrix.

One time only: create a directory (**mkdir**) on matrix for your C source files.

```
> ssh seneca_user_id@matrix.senecapolytechnic.ca
```
[case matters on Linus/Unix OS, when in doubt use lower case]

```
seneca_user_id@matrix.senecapolytechnic.ca's password: **********
```

```
$ mkdir Csource
```
(make a directory called "Csource". *note the upper-case C*)

```
$ chmod 700 Csource
```
(changes default security so no one else can access your files)

```
$ logout
```

Transfer a C source file

```
> cd "C:\Users\user\source\repos\ProjectName"
```
[full path to folder with .c file]

When you "Configure your new project" in Visual Studio,
check the box to "Place solution and project in the same directory" to avoid the next step...

```
PS C:\Users\user\source\repos\ProjectName> ls *.c -r
```

If you see this,
`Directory: C:\Users\user\source\repos\ProjectName`
then skip down to running the **scp** command.

If you see this,
`Directory: C:\Users\user\source\repos\ProjectName\ProjectName`
then change to the sub-directory

```
PS C:\Users\user\source\repos\ProjectName> cd ProjectName
```

Run Secure Copy Protocol (**scp**) to transfer the source code file with -verbose option.

```
> scp -v *.c [TAB key]
```
[TAB tells system to find any file with a .c extension.
Repeat to see more .c files.]

```
> scp -v .\helloWorld.c
```
[then add user@host:dir]

```
> scp -v .\helloWorld.c seneca_user_id@matrix.senecapolytechnic.ca:Csource
seneca_user_id@matrix.senecapolytechnic.ca's password: **********
```

Compile a C source file

```
> ssh seneca_user_id@matrix.senecapolytechnic.ca
seneca_user_id@matrix.senecapolytechnic.ca's password: **************
[seneca_user_id@mtrx-node03pd ~]$ cd Csource
[seneca_user_id@mtrx-node03pd ~]$ gcc -Wall helloWorld.c -o helloWorld
```

Run a C program

```
[seneca_user_id@mtrx-node03pd ~]$ helloWorld
Hello, World!
This is Quidam here. My story is ...
[seneca_user_id@mtrx-node03pd ~]$ logout
> exit
```