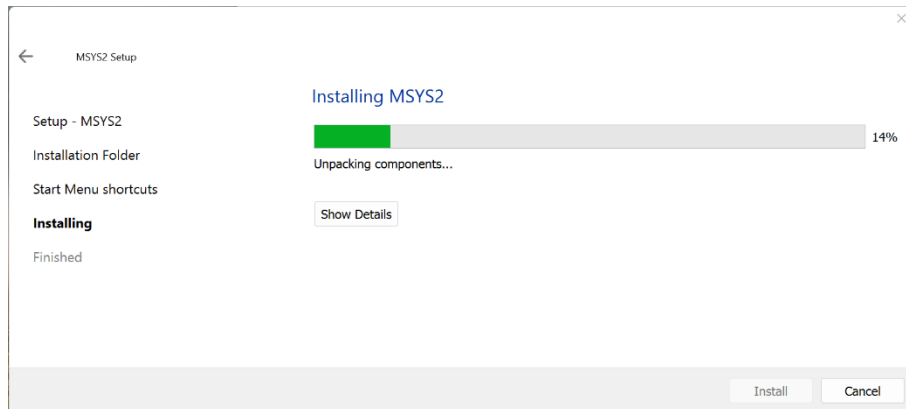


U Canonical Installation Guide for Windows

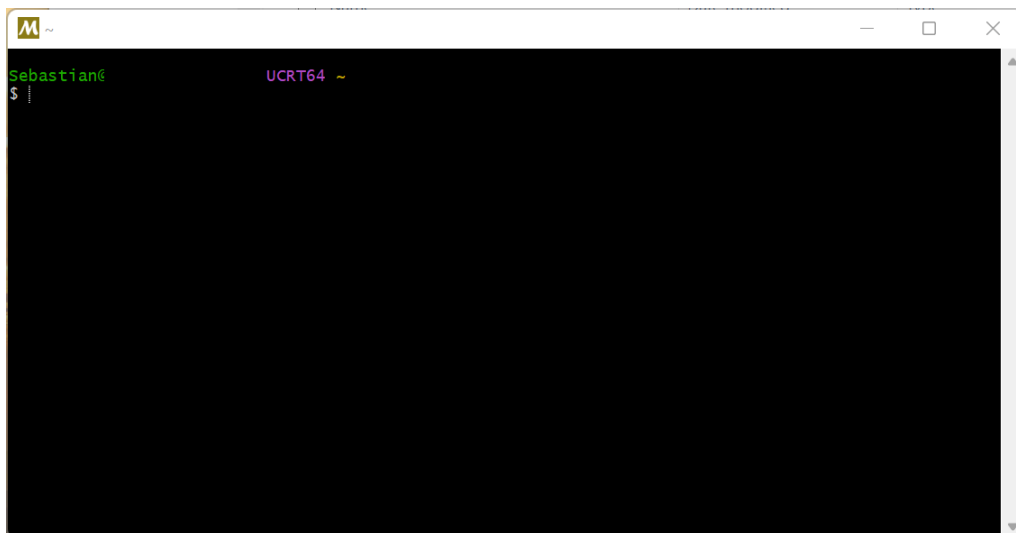
PUE Advanced Computational Physics

University of Vienna – Faculty of Physics

- 1) Install Msys2-64 from the official website <https://www.msys2.org/> . Within msys you can install compilers such as gcc, g++ or gfortran under Windows.



- 2) Open msys2 after the installation, you should see such a terminal:



- 3) Now we install **make** and **gfortran** using `pacman -Su make` and `pacman -Su gfortran`:

```
Sebastian@ ~ UCRT64 ~
$ pacman -Su make
:: Starting core system upgrade...
there is nothing to do
:: Starting full system upgrade...
resolving dependencies...
looking for conflicting packages...

Packages (1) make-4.4-1

Total Download Size: 0.49 MiB
Total Installed Size: 1.58 MiB

:: Proceed with installation? [Y/n] y
:: Retrieving packages...
make-4.4-1-x86_64 501.7 KiB 360 KiB/s 00:01 [#####] 100%
(1/1) checking keys in keyring [#####] 100%
(1/1) checking package integrity [#####] 100%
(1/1) loading package files [#####] 100%
(1/1) checking for file conflicts [#####] 100%
(1/1) checking available disk space [#####] 100%
:: Processing package changes...
(1/1) installing make [#####] 100%
:: Running post-transaction hooks...
(1/1) Updating the info directory file...

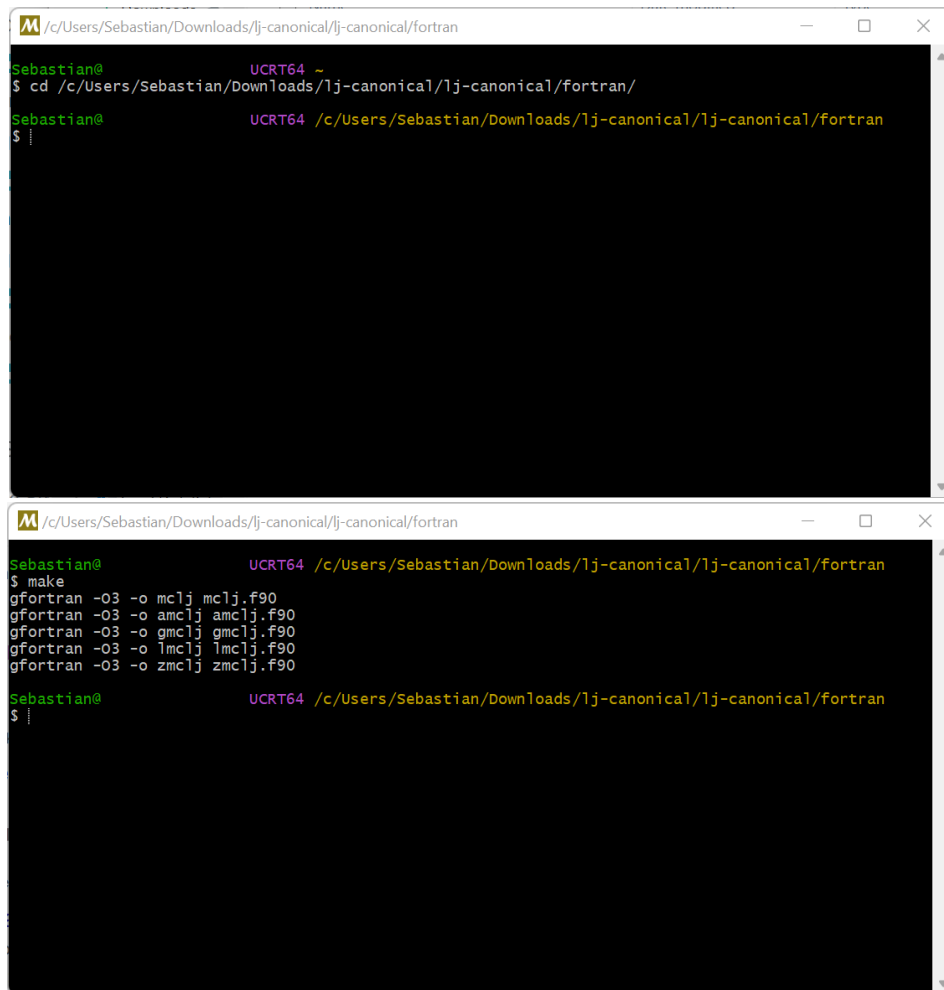
Sebastian@ ~ UCRT64 ~
$ pacman -Su gcc-fortran
:: Starting core system upgrade...
there is nothing to do
:: Starting full system upgrade...
resolving dependencies...
looking for conflicting packages...

Packages (9) binutils-2.40-1 gcc-11.3.0-3 isl-0.25-2 mpc-1.3.0-2 msys2-runtime-devel-3.4.5-1
msys2-w32api-headers-10.0.0.r16.g49a56d453-1
msys2-w32api-runtime-10.0.0.r16.g49a56d453-1 windows-default-manifest-6.4-1
gcc-fortran-11.3.0-3

Total Download Size: 50.26 MiB
Total Installed Size: 344.55 MiB

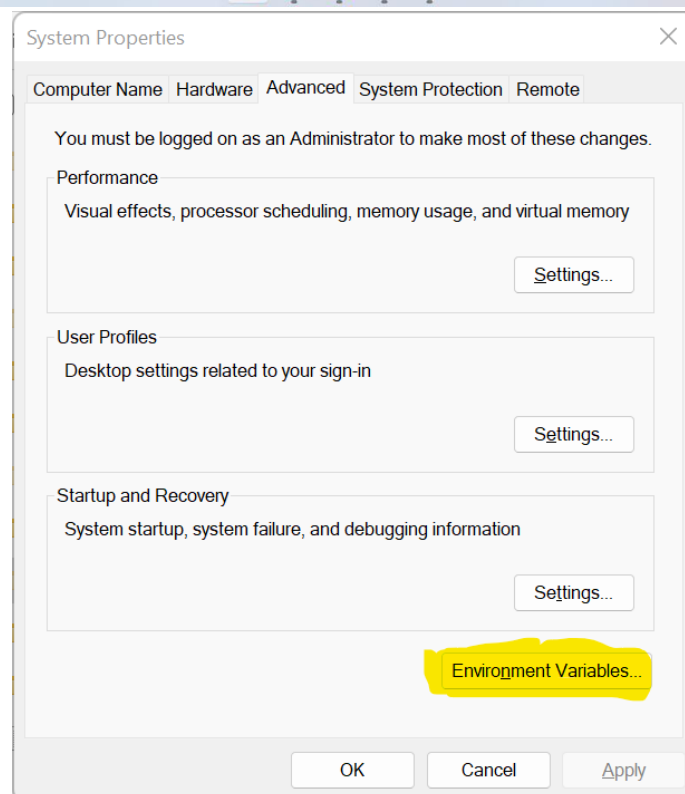
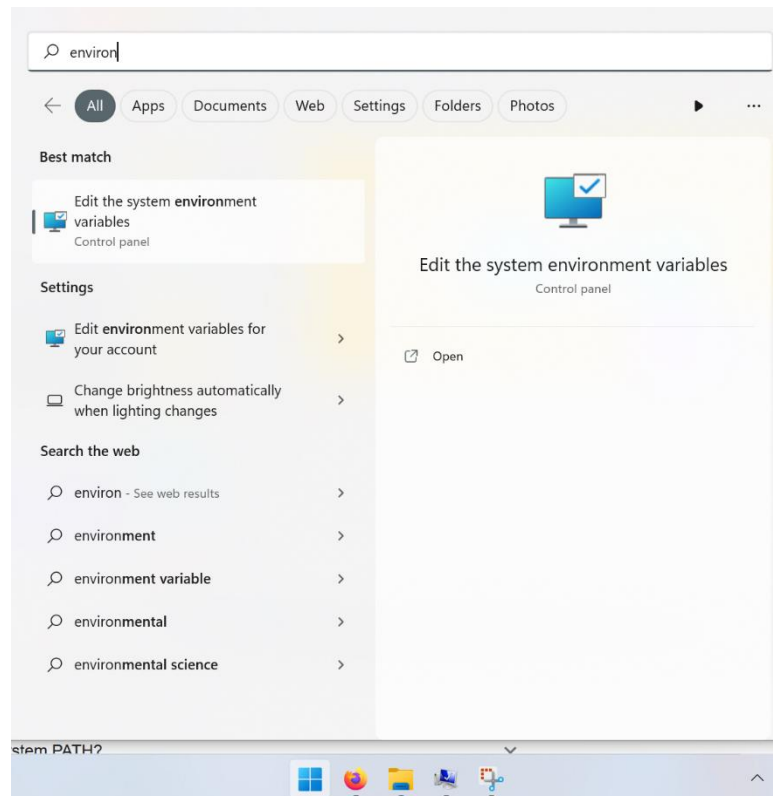
:: Proceed with installation? [Y/n] y
:: Retrieving packages...
msys2-w32api-runtime-10.0... 2037.5 KiB 1515 KiB/s 00:01 [#####] 100%
gcc-11.3.0-3-x86_64 27.6 MiB 13.8 MiB/s 00:02 [#####] 100%
isl-0.25-2-x86_64 728.9 KiB 1022 KiB/s 00:01 [#####] 100%
mpc-1.3.0-2-x86_64 79.1 KiB 899 KiB/s 00:00 [#####] 100%
binutils-2.40-1-x86_64 5.4 MiB 2.12 MiB/s 00:03 [#####] 100%
msys2-runtime-devel-3.4.5-... 337.9 KiB 619 KiB/s 00:01 [#####] 100%
windows-default-manifest-6... 1388.0 B 6.74 KiB/s 00:00 [#####] 100%
msys2-w32api-headers-10.0... 4.9 MiB 1845 KiB/s 00:03 [#####] 100%
```

- 4) We are ready to compile the program. For that, navigate to the fortran folder of the simulation code using `cd ...`, in my case it is in my Downloads folder. Here you should be able to simply type `make` and the program should be compiled.

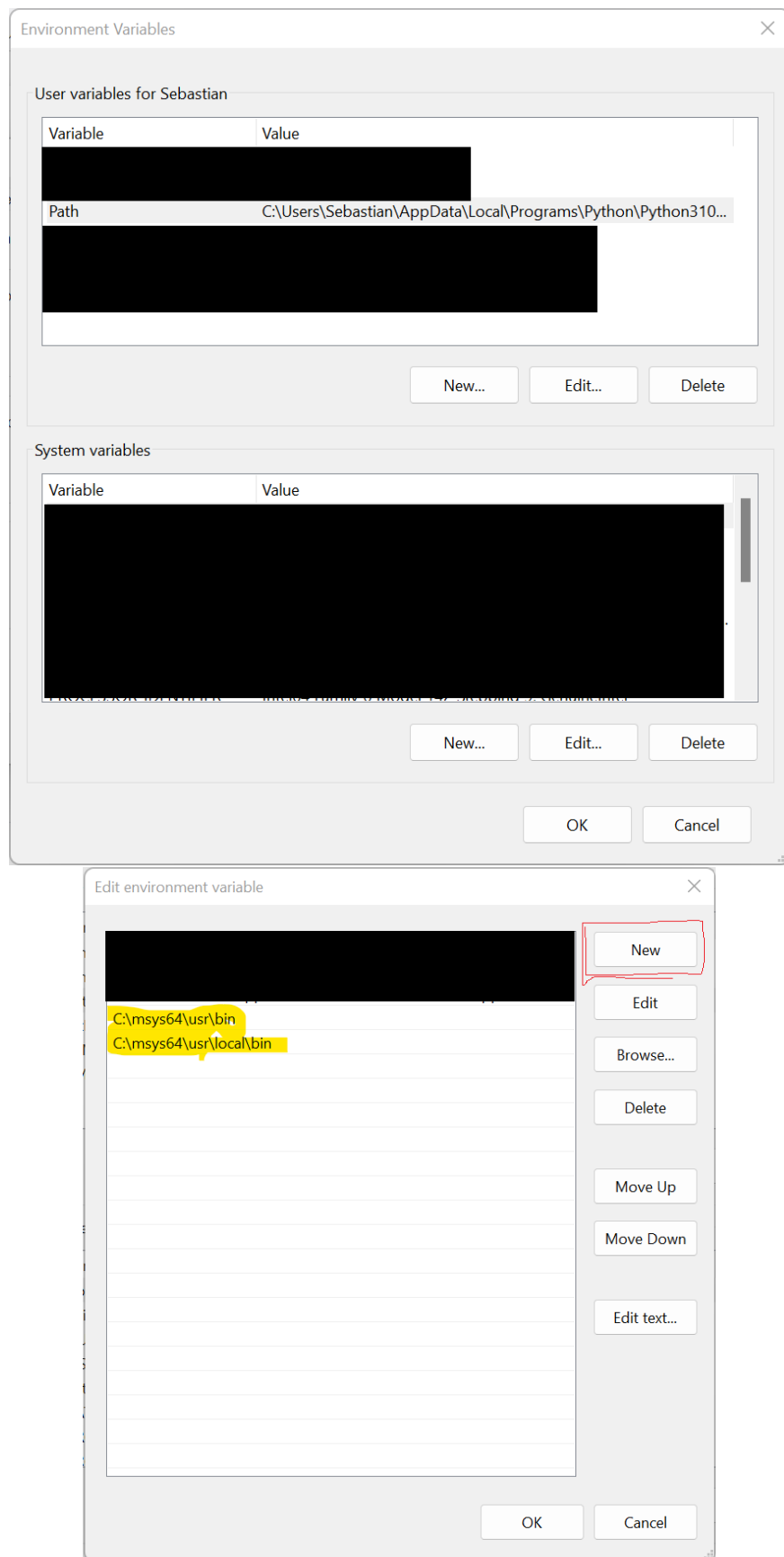


```
Sebastian@UCRT64 ~  
$ cd /c/Users/Sebastian/Downloads/lj-canonical/lj-canonical/fortran/  
Sebastian@UCRT64 /c/Users/Sebastian/Downloads/lj-canonical/lj-canonical/fortran  
$  
  
Sebastian@UCRT64 /c/Users/Sebastian/Downloads/lj-canonical/lj-canonical/fortran  
$ make  
gfortran -O3 -o mclj mclj.f90  
gfortran -O3 -o amclj amclj.f90  
gfortran -O3 -o gmc1j gmc1j.f90  
gfortran -O3 -o lmc1j lmc1j.f90  
gfortran -O3 -o zmc1j zmc1j.f90  
Sebastian@UCRT64 /c/Users/Sebastian/Downloads/lj-canonical/lj-canonical/fortran  
$
```

- 5) As a last step, we have to add the `mysys2` binaries to the `PATH` environment variable to be able to run the program from any directory. For that, search for *System Environment Variables* or *Systemumgebungsvariablen*. Then click on the below marked button:



- 6) Now click on the line that specifies PATH, click Edit and then New. Add here C:\mysys64\usr\bin and C:\mysys64\usr\local\bin as shown below:



- 7) The compiled program should now be executable from the standard Windows Command Prompt or Terminal. Use `cd ...` to get to the directory and run e.g. `lmc1j` using `.\zmc1j`.