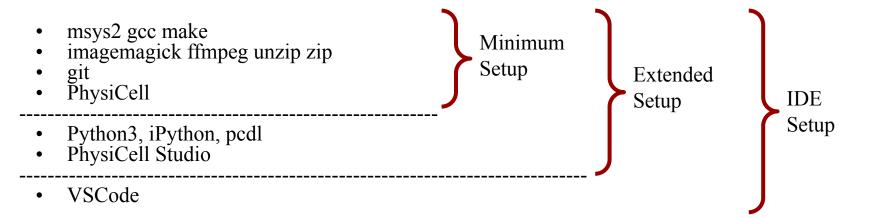
# Setup PhysiCell on Windows

Elmar Bucher, Ph.D.-Student

Intelligent Systems Engineering Indiana University

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### Msys2 part I (Minimum Setup)

• Download and install msys2 x86\_64.

```
https://www.msys2.org/
```

• Open the MSYS2 MINGW64 terminal.

```
pacman -S mingw-w64-x86_64-gcc make
pacman -S mingw-w64-x86_64-imagemagick mingw-w64-x86_64-ffmpeg
pacman -S unzip zip
pacman -S mingw-w64-x86_64-ca-certificates
pacman -S git
```

- Additionally, we will generate a src folder in your Windows Home directory, where we later on will install PhysiCell and PhysiCell-Studio into it.
- mkdir -p /c/Users/<username>/src

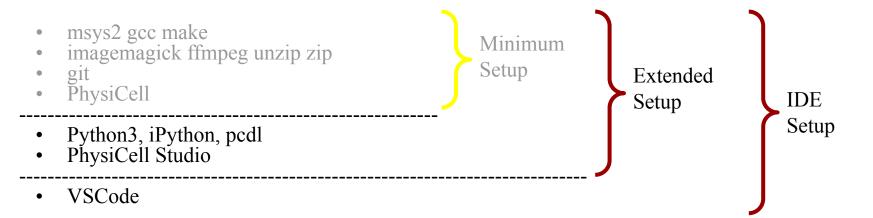
### PhysiCell (Minimum Setup)

Open the msys2 MINGW64 terminal, cd into the src directory and download PhysiCell.
 cd /c/Users/<username>/src
 git clone <a href="https://github.com/MathCancer/PhysiCell.git">https://github.com/MathCancer/PhysiCell.git</a>

• Test the installation with the template sample project.

```
cd PhysiCell
make data-cleanup clean reset
make template
make -j8
./project
make jpeg
make gif
make movie
```







# Python3 part I (Extended Setup)

We will **generate a python3 environment with the default Windows python installation**, where we will install all PhysiCell modelling related python libraries. We will name this Python3 environment **physienv**, and we install it in the **src** folder where just before have installed PhysiCell.

Here we demonstrate, how to generate the environment with the regular python. If you run mamba or conda, please adjust the commands accordingly.

• Open the Windows PowerShell terminal!

The first command will let you know if you have python installed. If not, then please go to the Microsoft Store and install the latest release available from the Python Software Foundation.

```
Get-Command python.exe
```

cd ~

python.exe -m venv src/physienv



# Python3 part II (Extended Setup)

Now, we link the python executable in this physienv as the default python installation for the msys2 terminal.

• Open the **msys2 MINGW64 terminal** to generate an alias for this environment for activation:

```
echo 'alias physienv="source /c/Users/<username>/src/physienv/Scripts/activate"' >> ~/.bash_profile
source ~/.bash_profile
physienv # activate the environment
which python # this should point to the python in the physienv/Scripts folder. if not, you made a mistake! please correct.
which pip # this should point to the python in the physienv/Scripts folder. if not, you made a mistake! please correct.
cd /c/Users/<username>/src/physienv/Scripts
ln -s python.exe python3.exe
which python3 # this should point to the python.exe file in the physienv/Scripts folder. if not, you made a mistake! please correct.
```

which pip3 # this should point to the python.exe file in the physienv/Scripts folder.

# Python3 part III (Extended Setup)

 Open the msys2 MINGW64 terminal and activate the physienv python environment using the alias generated before: physienv

Install the iPython shell:pip3 install ipython

Install the PhysiCell Data Loader:pip3 install pcdl



# PhysiCell Studio part I (Extended Setup)

• Open the msys2 MINGW64 terminal, cd into the src directory, download PhysiCell Studio and install its python3 dependencies.

```
cd /c/Users/<username>/src
git clone https://github.com/PhysiCell-Tools/PhysiCell-Studio.git
pip3 install -r PhysiCell-Studio/requirements.txt
```

• Put the studio under the PATH:

```
cd /c/Users/<username>/src/physienv/Scripts
echo 'python3 /c/Users/<username>/src/PhysiCell-Studio/bin/studio.py $*' >
pcstudio.exe
which pcstudio # this should point to the pcstudio.exe file in the Scripts folder.
```



# PhysiCell Studio part II (Extended Setup)

• Test the installation with the template sample project:

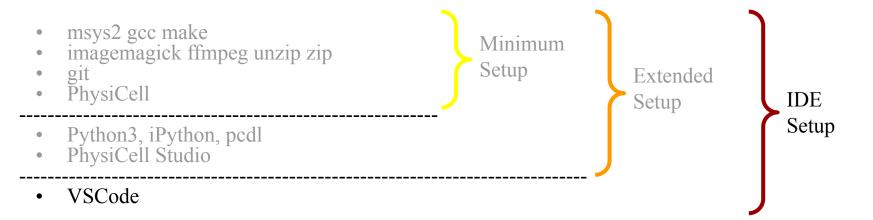
```
cd /c/Users/<username>/src/PhysiCell
physienv
pcstudio
```

PhysiCell Studio should open and load the template PhysiCell settings.xml file.

Please check out the official PhysiCell Studio manual:

https://github.com/PhysiCell-Tools/Studio-Guide/tree/main









#### MS Visual Studio Code part I (IDE Setup)

- 1. Install vs code, either from your operating system's app store or from <a href="https://code.visualstudio.com/">https://code.visualstudio.com/</a>
- 2. Generate a vs code profile for physicell:

3. Open the Folder:

```
File | Open Folder... | src | Open
Yes, I trust the authors
```



### MS Visual Studio Code part II (IDE Setup)

1. Install the official python and C++ extensions into the profile:

```
click the profile icon (default is a gearwheel) on the left side bottom corner.
Profile > physicell
Extension: Python Install
Extension: C/C++ Install
```

2. Link physienv (the python environment we generated above):

```
View | Command Palette... | Python: Select Interpreter Enter interpreter path... | Find... | src/physienv
```



### MS Visual Studio Code part III (IDE Setup)

1. Link msys2 MINGW64 as default terminal:

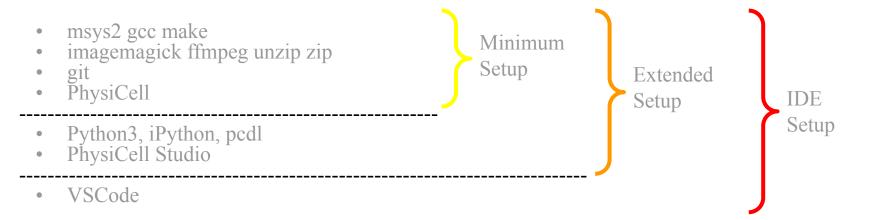
```
View | Command Palette... | Preferences: Open Workspace Settings (JSON) copy the msys2 configuration json for visual studio code (not sublime text!) found at <a href="https://www.msys2.org/docs/ides-editors/#visual-studio-code">https://www.msys2.org/docs/ides-editors/#visual-studio-code</a> and pasted it into the vs code settings.json.
```

close the settings.json tab # a dialog window will pop up.

click Save

Terminal | New Terminal # a msys2 terminal integrated into the vs code IDE should open.







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