

Git

Git is the version control software used in the workshop.

Installation

- Go to the following link and choose the correct version for your operating system: <https://git-scm.com/downloads>.
- Following the download, run the installer as per usual on your machine.
- **Windows:** You may leave all selection widgets at their default values.

Check installation

You can check that git has been successfully installed:

- Open a terminal/command prompt and type `git`. (Hit the `[Enter]` key to terminate the command entry.)

If git is installed then you should see the following:

```
(base) ~/rsc/rsd-workshop(prepare-material-day-1 x) git
usage: git [--version] [--help] [-C <path>] [-c <name>=<value>]
        [--exec-path=<path>]] [--html-path] [--man-path] [--info-path]
        [-p | --paginate | -P | --no-pager] [--no-replace-objects] [--bare]
        [--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
        <command> [<args>]

These are common Git commands used in various situations:

start a working area (see also: git help tutorial)
    clone      Clone a repository into a new directory
    init       Create an empty Git repository or reinitialize an existing one

work on the current change (see also: git help everyday)
    add        Add file contents to the index
    mv         Move or rename a file, a directory, or a symlink
    restore    Restore working tree files
    rm         Remove files from the working tree and from the index

examine the history and state (see also: git help revisions)
    bisect     Use binary search to find the commit that introduced a bug
    diff       Show changes between commits, commit and working tree, etc
    grep       Print lines matching a pattern
    log        Show commit logs
    show       Show various types of objects
    status     Show the working tree status

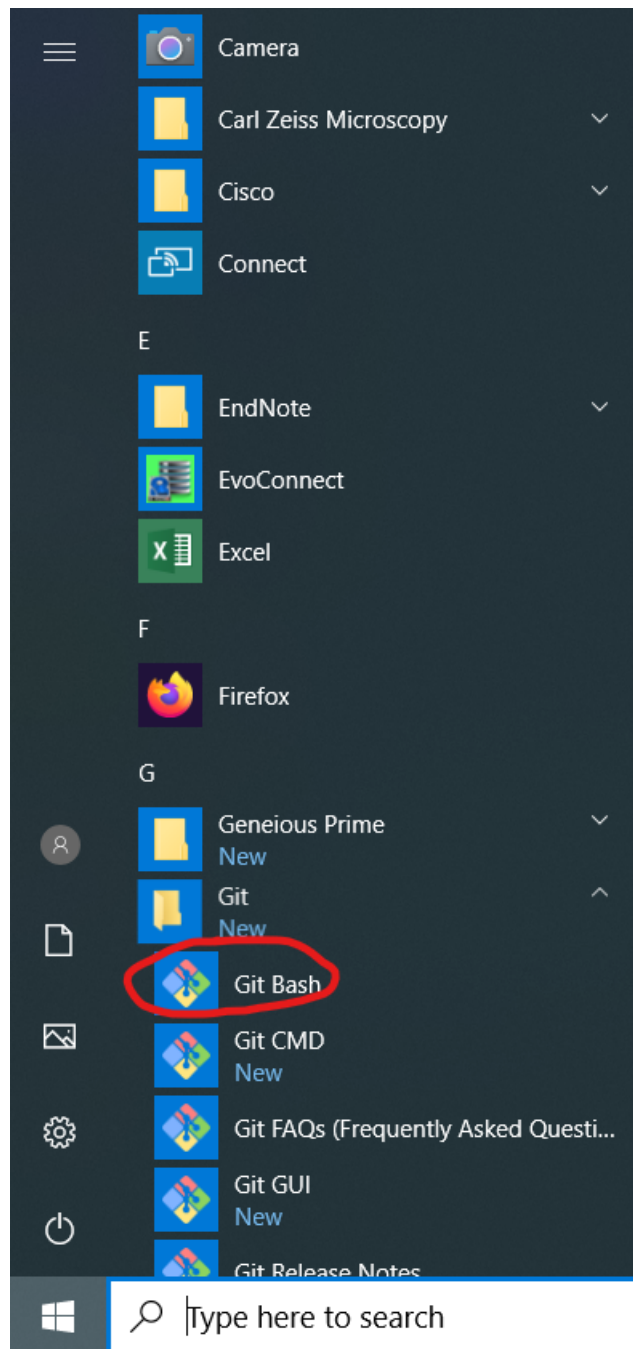
grow, mark and tweak your common history
    branch     List, create, or delete branches
    commit     Record changes to the repository
    merge      Join two or more development histories together
    rebase     Reapply commits on top of another base tip
    reset      Reset current HEAD to the specified state
    switch     Switch branches
    tag        Create, list, delete or verify a tag object signed with GPG

collaborate (see also: git help workflows)
    fetch      Download objects and refs from another repository
    pull       Fetch from and integrate with another repository or a local branch
    push       Update remote refs along with associated objects

'git help -a' and 'git help -g' list available subcommands and some
concept guides. See 'git help <command>' or 'git help <concept>'
to read about a specific subcommand or concept.
See 'git help git' for an overview of the system.
```

Notes for Windows

In your Search bar, type `git-bash` and start the `git-bash` executable. This brings up a terminal window. If you cannot locate the `git-bash` launcher, go to "Start Menu -> Git -> Git Bash". You may want to create a shortcut on the Desktop or add it to the taskbar.



Enter

```
$ git
```

and observe the output given above.

Python

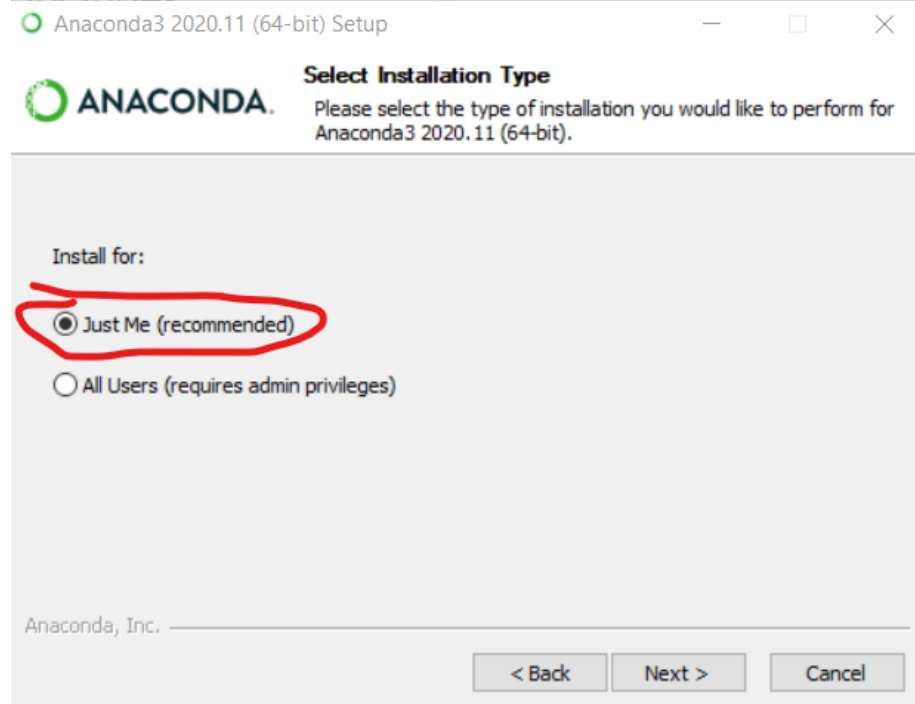
This workshop uses Python as the example programming language, however, the ideas and principles covered extend and apply to any language.

To install Python we will use **Anaconda**. Anaconda is a python distribution (similar as how Ubuntu is a distribution of Linux). It bundles the python interpreter with numerous libraries, addons, and development environments such as jupyter.

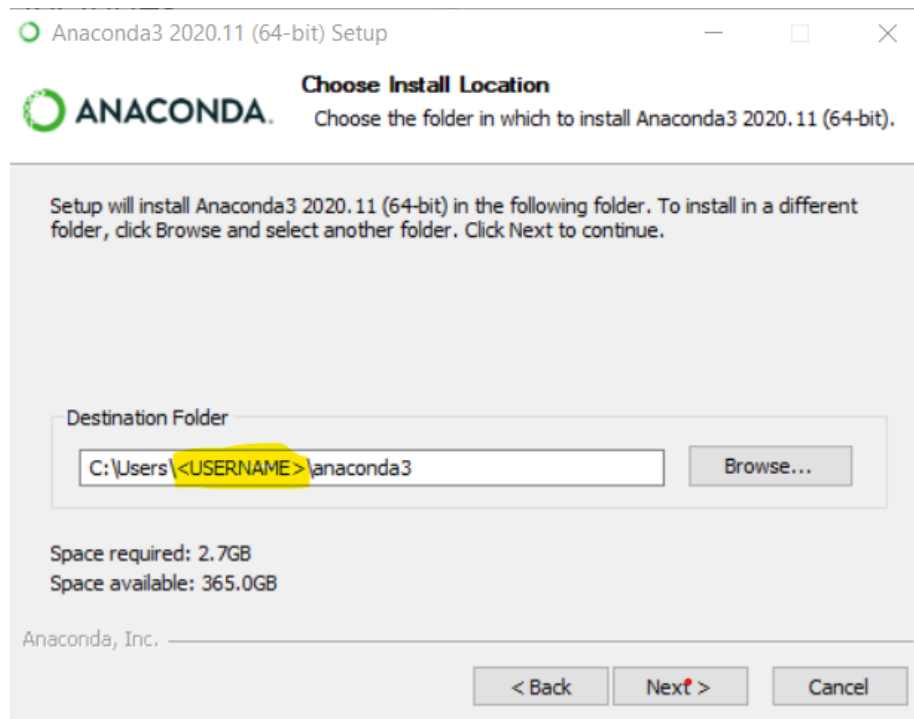
Installation

- Go to the following link <https://www.anaconda.com/download/> and select Python 3.
- Following the download, run the installer as per usual on your machine.

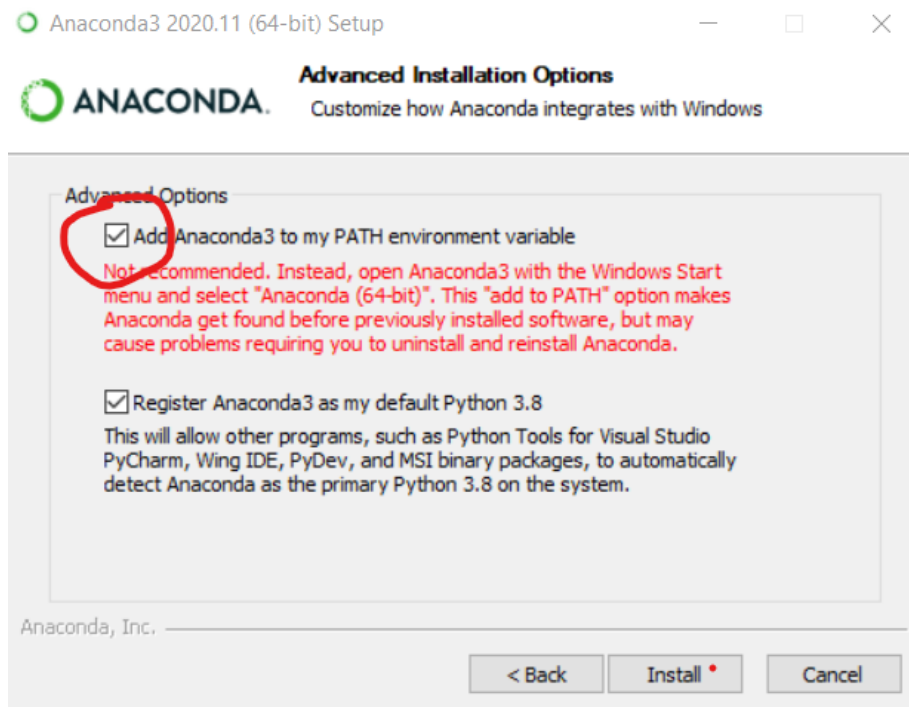
Windows users Below are some screenshots for installing anaconda under windows. Most importantly, select "Install for: Just me".



Next, accept the suggested installation path.



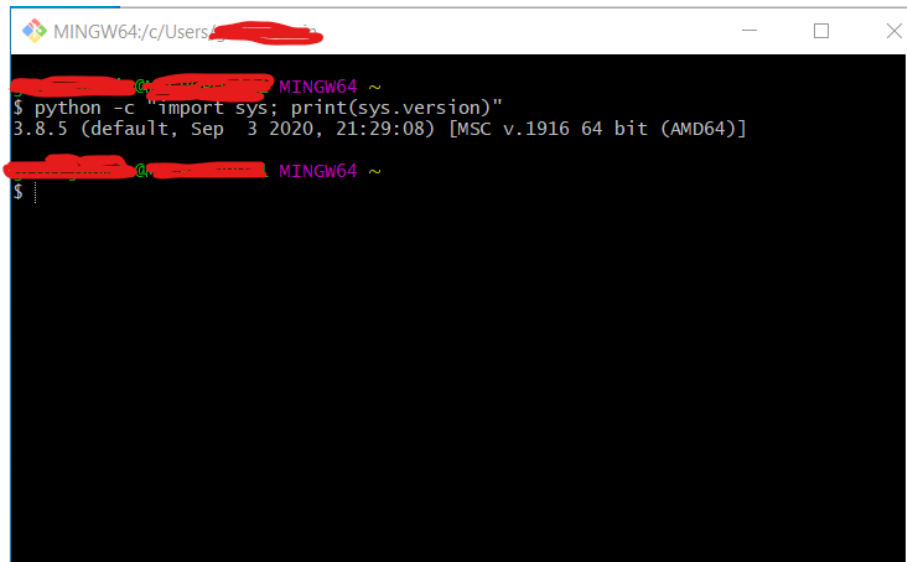
Finally, select "Add Anaconda3 to my PATH environment variable" despite the warning.



Test your python installation

In a terminal window (windows: `git-bash`), enter the command

```
$ python -c "import sys; print(sys.version)"
```

A screenshot of a MINGW64 terminal window. The title bar shows the path 'MINGW64; c/Users/[redacted]'. The terminal has a black background with white text. The prompt is '\$'. The user enters the command 'python -c "import sys; print(sys.version)"'. The output is '3.8.5 (default, Sep 3 2020, 21:29:08) [MSC v.1916 64 bit (AMD64)]'. The prompt returns to '\$'.

```
MINGW64 ~  
$ python -c "import sys; print(sys.version)"  
3.8.5 (default, Sep 3 2020, 21:29:08) [MSC v.1916 64 bit (AMD64)]  
$
```

Editor

There are several editors that allow us to edit files such as python scripts, LaTeX files etc. For this workshop the suggested editor is VS code.

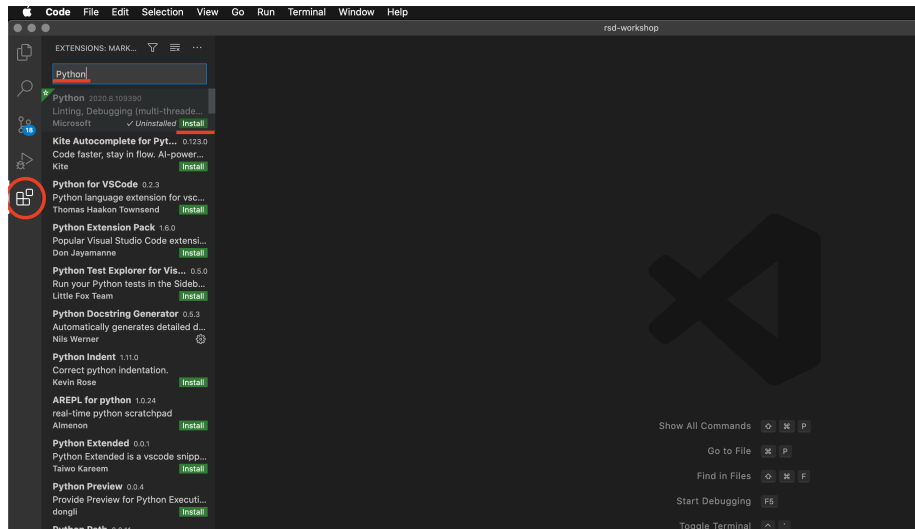
If you prefer to use a different editor skip this part.

Installation

- Go to the following link <https://code.visualstudio.com> and click download.

Install python extension for VSCode

- Open VS code.
- Bring up the Extensions view by clicking on the Extensions icon in the Activity Bar on the side of VS Code.
- There type "Python" and select and install the first hit returned from the search.




GitLab

In this workshop, we will use GitLab, a code sharing service. The GWDG offers free GitLab accounts to all MPI employees. To interact with the code on GitLab, we will use `git`, the version control system.


To login to GitLab, use this website: https://gitlab.gwdg.de/users/sign_in. **Use the tab titled "eMail-address"**, do not use the tab "Standard". Enter your email address and password into the login dialog of the eMail-address tab.

gitlab.gwdg.de/users/sign_in




GitLab

PROVIDED BY




Gesellschaft für wissenschaftliche Datenverarbeitung am Göttingen


FOR



Niedersachsen



GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN



MAX-PLANCK-GESellschaft

eMail-addressStandard

eMail-address Username

Password

☐ Remember me

Sign in

Sign in with

AcademicID

☐ Remember me

How can I use GitLab?

The following user groups can login directly to GitLab by entering their email address and password into the login dialog of the eMail-address tab

- Students and employees of the all Universities in Niedersachsen
- Employees of the Max Planck Society who work at institutes connected to GWDG Identity Management

Please do not use the Standard tab to login.

Check list

- ☐ Python
- ☐ Git
- ☐ VS code (or any other editor)
- ☐ GitLab