

TSKS33 Hands-On Sessions: Getting Started

Fall 2023

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Setting up

To prepare for the hands-on sessions in the computer lab,

1. From the command line, run

```
module add courses/TSKS33  
module initadd courses/TSKS33
```

It is sufficient to do this step once, at the start of the course.

2. Go to your home directory. First clean up:

```
rm -rf TSKS33-sandbox
```

Then copy the TSKS33 sandbox directory into your home directory:

```
cp -r /courses/tsks33/ht2023/TSKS33-sandbox .
```

(Note the period, “.”, at the end!) This is the directory you will work on in all the labs.

If you want to start over the labs, for some reason (for example if you inadvertently deleted or modified some files), or if the instructor has made updates to the labs, redo the last step (`cp -r . . .`).

Where to Find Files

The data files required for the labs are stored in the directory `/courses/tsks33/ht2023/data`. As some of the files are very large, copying them to the home directory is discouraged.

Some useful Python scripts are located at `/courses/tsks33/ht2023/common-functions`.

Running the Software

The initialization under “Setting up” above makes sure all required software is available.

- To start Gephi in the computer labs, run

```
gephi
```

from the command line.

- We use Python version 3.8.

- From the command line, simply run:

```
python3 xxx.py
```

- For those who prefer the VS Code IDE, start it as follows:

- * Run the command code from the command line.

- * In VS Code, go to the menu “Open Folder” and choose the `TSKS33-sandbox` directory (*not* a subdirectory in it). Make sure that after this step, the `.vscode` folder and all the session folders are opened in the VS Code explorer.

- * The correct Python interpreter should now be chosen and you can run and debug your code in VS Code.

- For those who prefer the Spyder IDE, start it as follows (from anywhere in the directory structure):

```
spyder
```

Troubleshooting

- The way LiU’s system is configured, the directory `/courses/TSKS33/` is not always visible in the file browser or via autocomplete (Tab) on the command line. To reach the directory from the command line, write

```
cd /courses/TSKS33
```

- Occasional problems to re-start the Gephi and Mozilla Firefox after a crash in the computer labs have occurred in the past. In case of problems, run in the home directory:

```
rm -rf .gephi
rm -rf .mozilla
```

If this does not help, run

```
rm -rf .modules
rm -rf .local/lib
rm -rf .cache
```

and redo all steps listed above under “Setting up”.

- If you have trouble with the Python interpreter in VS Code, try Ctrl+Shift+P and then choosing the “Python: Clear Workspace Interpreter Setting”.
- For support on LiU’s computer system, call 013-282828 or write to helpdesk@liu.se.

Running the labs via remote login from a computer at home

One can run the labs via remote login, although it requires a very fast and reliable Internet connection.

From a Linux command line, run

```
ssh -X LiU-ID@ssh.edu.liu.se
```

to enter the same environment as in the computer labs.

You can also use Thinlinc for graphical remote login, see

<https://www.student.liu.se/itsupport/fjarrinloggning?l=en>

for more information. Thinlinc clients exist for Windows, Mac and Linux.

Running the labs locally on a Linux computer at home

It is perfectly possible to solve all lab problems on a personal laptop or home PC running a modern Linux distribution.

The programs have been tested on Ubuntu 20.04 with Python 3.8.10 and the following Python packages installed:

```
numpy==1.22.4, scipy==1.9.1, snap-stanford==6.0.0,  
scikit-learn==0.24.2, pandas==1.3.3, matplotlib==3.4.3
```

Note that these exact versions have to be used, as there are compatibility problems with other versions. The SNAP libraries are currently unavailable for Python 3.10 (the default Python version supplied in Ubuntu 22.04).

Use `scp` to copy the entire directory `/courses/TSKS33/ht2023` to your computer:

```
scp -r LiU-ID@ssh.edu.liu.se:/courses/TSKS33/ht2023/* .
```

Either create the directory `/courses/TSKS33` on your computer (requires root access) or modify path names in all programs as appropriate (replace `/courses/TSKS33/ht2023` with the directory to which you have copied files).

If you are running the labs in VS Code on a local computer, remove the hidden directory `.vscode` from `TSKS33-sandbox`.

Running the labs locally on a Mac or Windows computer at home

The software required for the labs has been developed on Ubuntu Linux. We unfortunately can not offer support for Windows or Mac, although in principle working with these operating systems also should work.