Øving 2

TTM4185 Sikkerhet og robusthet i IKT system

Installasjonguide og info

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Contents

1 Information about the assignment

This assignment is based on the graph theory part of the course. The assignment is to be done in jupyter notebooks using a custom python library. The file Oving2.ipynb is to be delivered when filled out. Download the file Oving2.zip and extract it. This folder contains the files neccesary to complete the assignment.
The assignment is supposed to be delivered on Blackboard by both candidates, if you work in pairs.

1.1 How to deliver

This assignment should be delivered as a PDF. The easies way to convert to PDF was fount to be first to convert to html and then use a html to PDF converter.

1. First export the notebook to html using *File*
2. *Download as*
3. *HTML (html)*
4. Then use the webpage https://html2pdf.com/ to convert to pdf. Upload the html file and download as pdf.
5. Remember to check the file is correct before delivering.

2 Installing python and pip

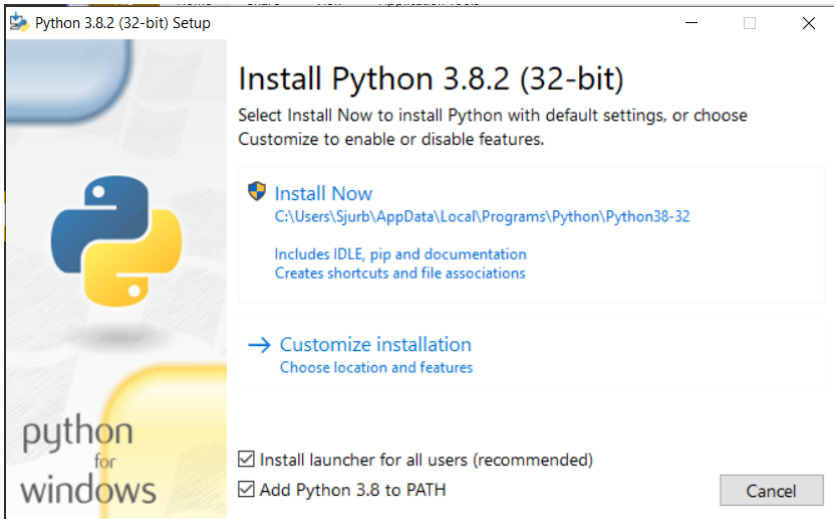
2.1 Windows

2.1.1 Step 1: Download the Python 3 Installer

1. Open a browser window and navigate to the Download page for Windows at python.org.
2. Underneath the heading at the top that says Python Releases for Windows, click on the link for the Latest Python 3 Release - Python 3.x.x.
3. Scroll to the bottom and select either Windows x86-64 executable installer for 64-bit or Windows x86 executable installer for 32-bit. (See below.)

2.1.2 Step 2: Run the Installer

Once you have chosen and downloaded an installer, simply run it by double-clicking on the downloaded file. A dialog should appear that looks something like this:



Important: You want to be sure to check the box that says **Add Python 3.x to PATH** as shown to ensure that the interpreter will be placed in your execution path.
Then just click Install Now. That should be all there is to it. A few minutes later you should have a working Python 3 installation on your system.

2.2 Linux

There is a very good chance your Linux distribution has Python installed already, but it probably won't be the latest version, and it may be Python 2 instead of Python 3.
To find out what version(s) you have, open a terminal window and try the following command:

```
$ python3 --version
Python 3.6.5
$ python3 -m pip --version
pip 20.0.2
```

Any python version >= 3.5 will work for this assignment.
If python is already installed, skip to section 3.
If not, python can be installed using the following commands.

```
$ sudo apt update
$ sudo apt install python3.6
```

2.3 macOS / Mac OS X

While current versions of macOS (previously known as "Mac OS X") include a version of Python 2, it is likely out of date by a few months. Also, this tutorial series uses Python 3, so let's get you upgraded to that.

2.3.1 Step 1: Install Homebrew (Part 1)

To get started, you first want to install Homebrew:

1. Open a browser and navigate to http://brew.sh/. After the page has finished loading, select the Homebrew bootstrap code under "Install Homebrew". Then hit Cmd+C to copy it to the clipboard. Make sure you've captured the text of the complete command because otherwise the installation will fail.

2. Now you need to open a Terminal.app window, paste the Homebrew bootstrap code, and then hit Enter. This will begin the Homebrew installation.

3. If you're doing this on a fresh install of macOS, you may get a pop up alert asking you to install Apple's "command line developer tools". You'll need those to continue with the installation, so please confirm the dialog box by clicking on "Install".

At this point, you're likely waiting for the command line developer tools to finish installing, and that's going to take a few minutes. Time to grab a coffee or tea!

2.3.2 Step 2: Install Homebrew (Part 2)

You can continue installing Homebrew and then Python after the command line developer tools installation is complete:

1. Confirm the "The software was installed" dialog from the developer tools installer.

2. Back in the terminal, hit Enter to continue with the Homebrew installation.

3. Homebrew asks you to enter your password so it can finalize the installation. Enter your user account password and hit Enter to continue.

4. Depending on your internet connection, Homebrew will take a few minutes to download its required files. Once the installation is complete, you'll end up back at the command prompt in your terminal window.

Whew! Now that the Homebrew package manager is set up, let's continue on with installing Python 3 on your system.

2.3.3 Step 3: Install Python

```
$ brew install python3
```

Note: When you copy this command, be sure you don't include the $ character at the beginning. That's just an indicator that this is a console command.
This will download and install the latest version of Python. After the Homebrew brew install command finishes, Python 3 should be installed on your system.
You can make sure everything went correctly by testing if Python can be accessed from the terminal:

1. Open the terminal by launching Terminal.app.

2. Type pip3 and hit Enter.

3. You should see the help text from Python's "Pip" package manager. If you get an error message running pip3, go through the Python install steps again to make sure you have a working Python installation.

Assuming everything went well and you saw the output from Pip in your command prompt window... congratulations! You just installed Python on your system, and you're all set to continue with the next section in this tutorial.

3 Installing requirements

Short version: cd to the directory and type pip install -r /path/to/requirements.txt
Next up we are going to install the required packages to be used in the python project. The process is the same regardless of your OS.

1. Open a terminal.
2. Navigate to the folder of the project folder. If you are unsure about how to navigate the terminal please see the link for mac/ linux here and this link for windows.
3. Use the commant

```
$ pip3 install -r requirements.txt
```

The python modules needed for the project will then be installed.

4 Opening Jupyter notebooks

Open a terminal and navigate to the project folder. Type the following command:

```
$ python3 -m notebook
```

Now open the file Introduction.ipynb to get an introduction to the graph drawing tools.
When you are ready to begin the assignment open *Oving3.ipynb*