



European Master in  
Building Information Modelling

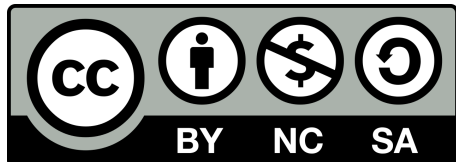
# Introduction to Python programming language

Topic 2: Fundamentals of programming

BIM A+3: Parametric Modelling in BIM

Matevž Dolenc

*Univerza v Ljubljani*

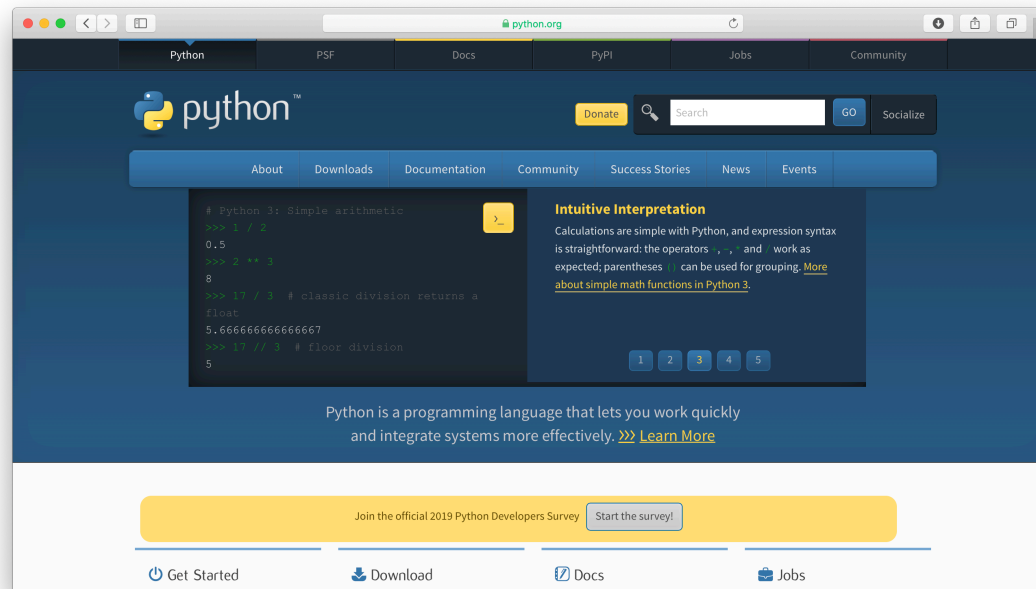


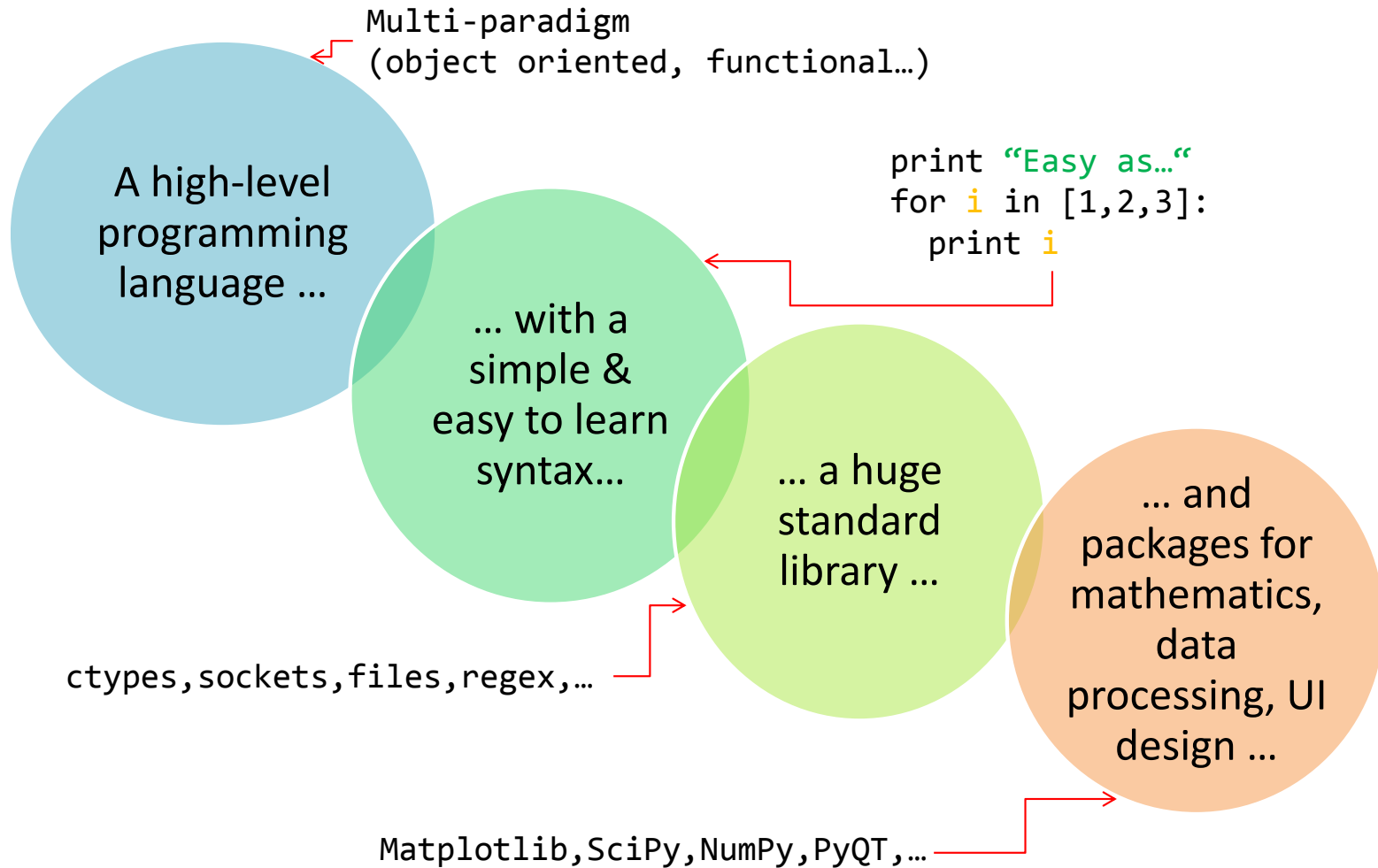
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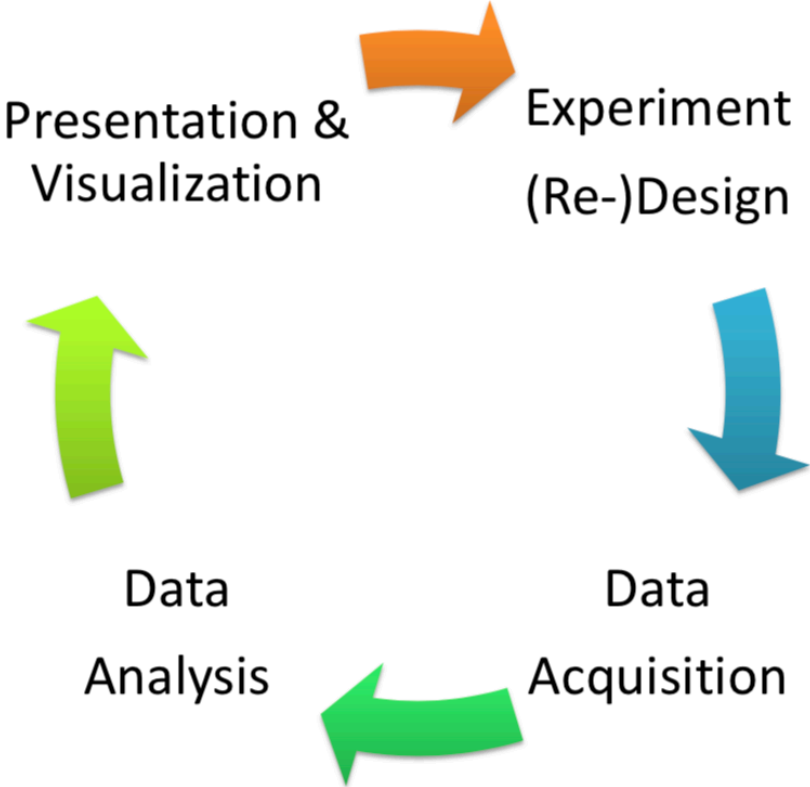
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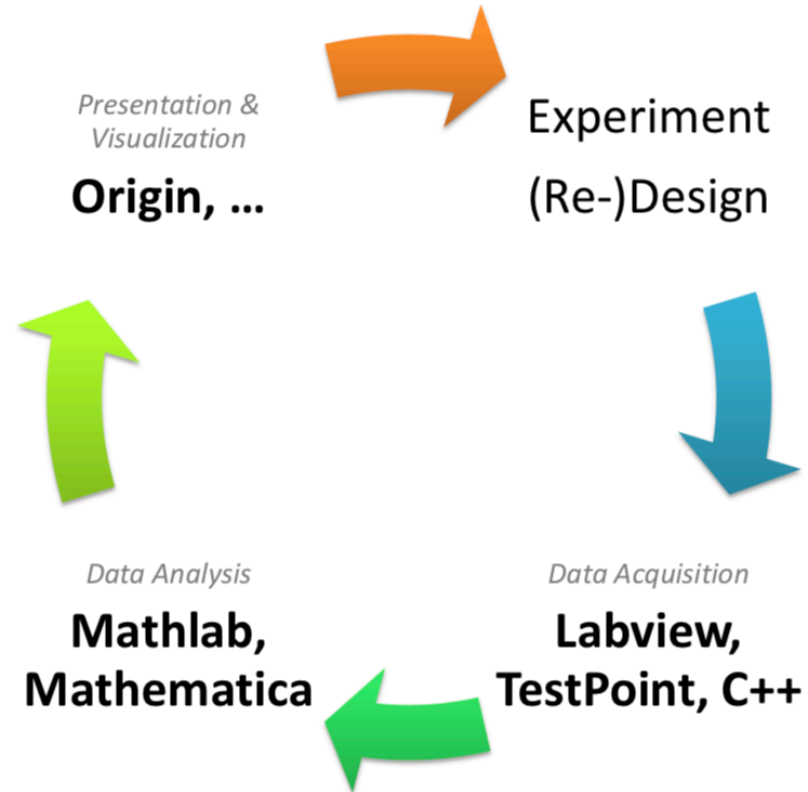
- Compiled
  - A program is executed (i.e. the source is first compiled, and the result of that compilation is expected)
  - A "program" in general, is a sequence of instructions written so that a computer can perform certain task.
  - Examples: C/C++, Fortran, Objective-C, Swift, ...
- Scripting
  - A script is interpreted
  - A "script" is code written in a scripting language. A scripting language is nothing but a type of programming language in which we can write code to control another software application.
  - Examples: Python, Ruby, Perl, ...

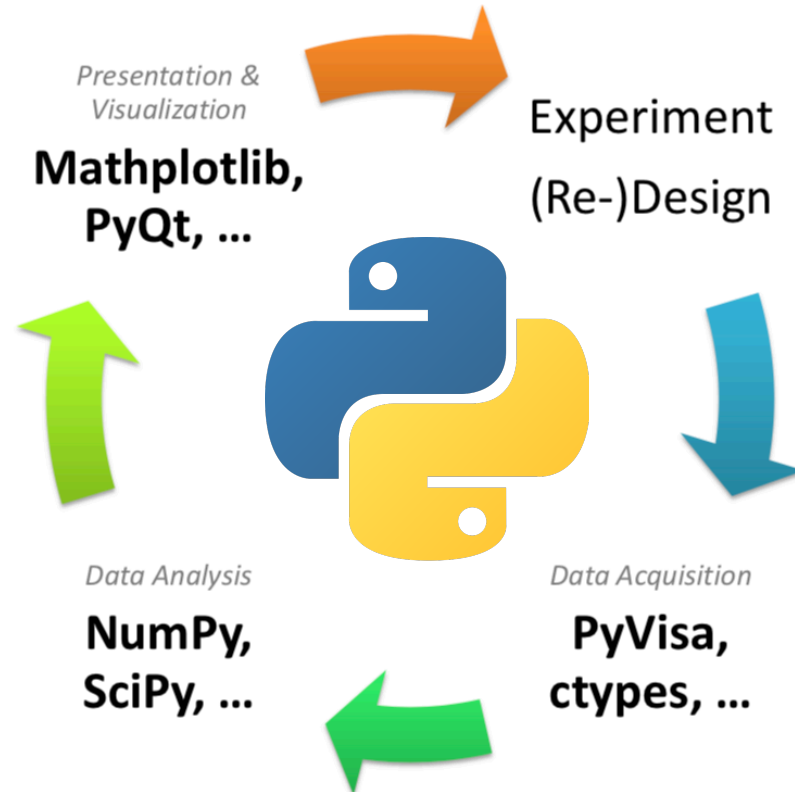
- Python is a general purpose programming language that is often applied in scripting roles.
  - So, Python is programming language as well as scripting language.
  - Python is also called as Interpreted language
- Differences between program and scripting language.
  - A program is executed (i.e. the source is first compiled, and the result of that compilation is expected)
  - A "program" in general, is a sequence of instructions written so that a computer can perform certain task.



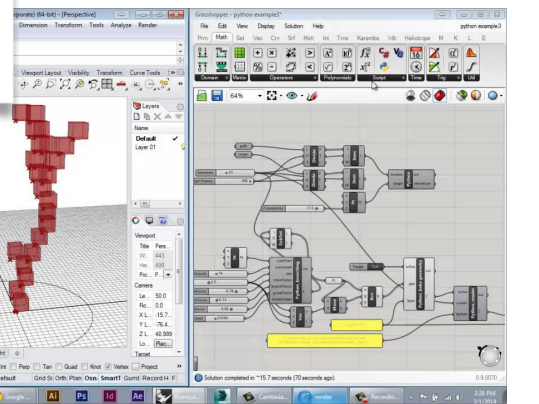
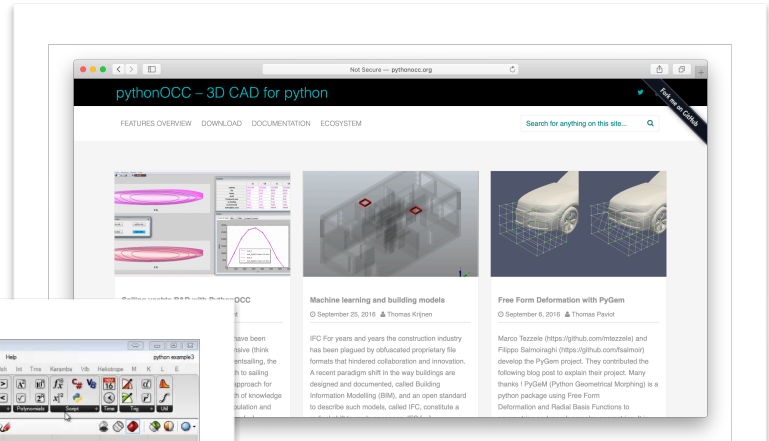
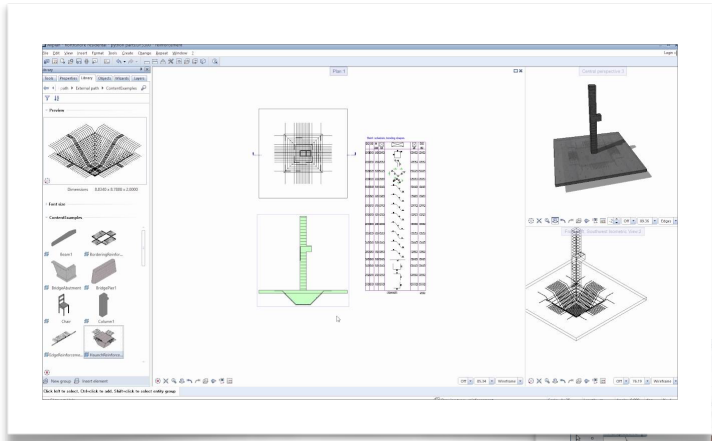






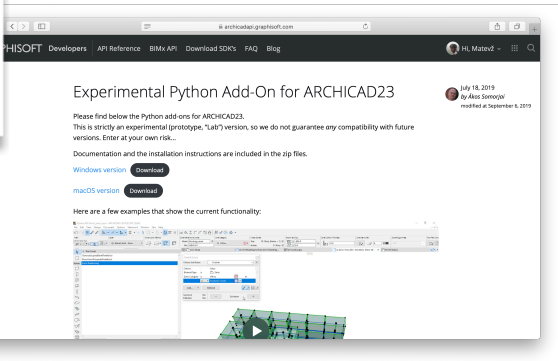
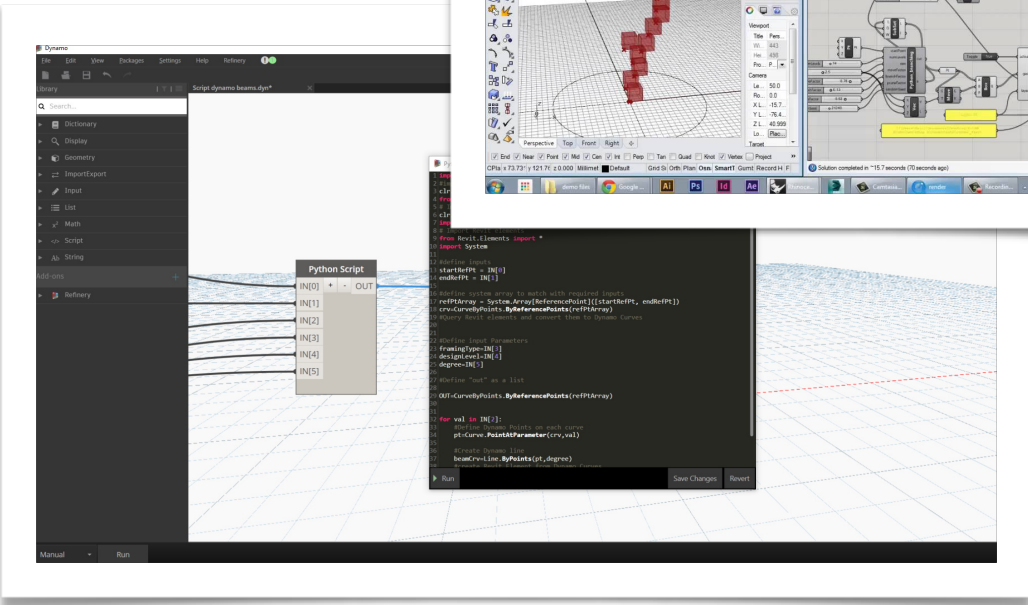




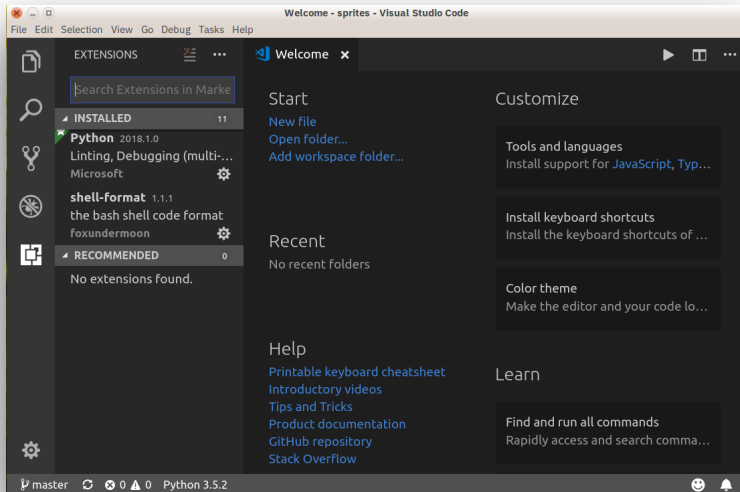


Machine learning and building models  
September 25, 2016 & Thomas Krijnen

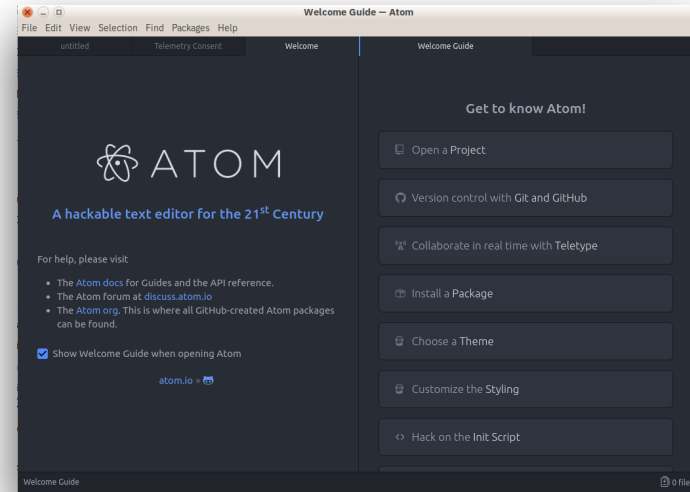
Free Form Deformation with PyGdm  
September 6, 2016 & Thomas Paoletti



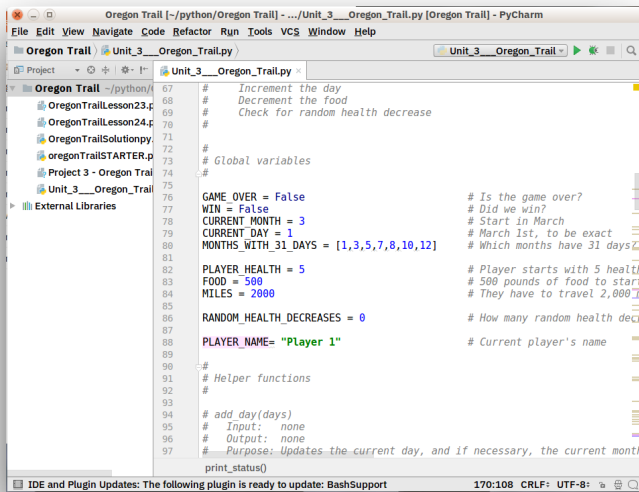
- Download and install
  - Official distribution: <https://www.python.org>
  - Anaconda (Science friendly distribution): <https://www.anaconda.com>
- Documentation
  - Python has one of the best documentation
  - Official documentation: <https://www.python.org/doc/>
- Additional resources
  - Learning Data Science: Our Favourite Python Resources: <https://hackernoon.com/learning-data-science-our-favorite-python-resources-from-free-to-not-877fca5c92f0>
  - Talk Python to Me: <https://talkpython.fm/home>



<https://code.visualstudio.com>

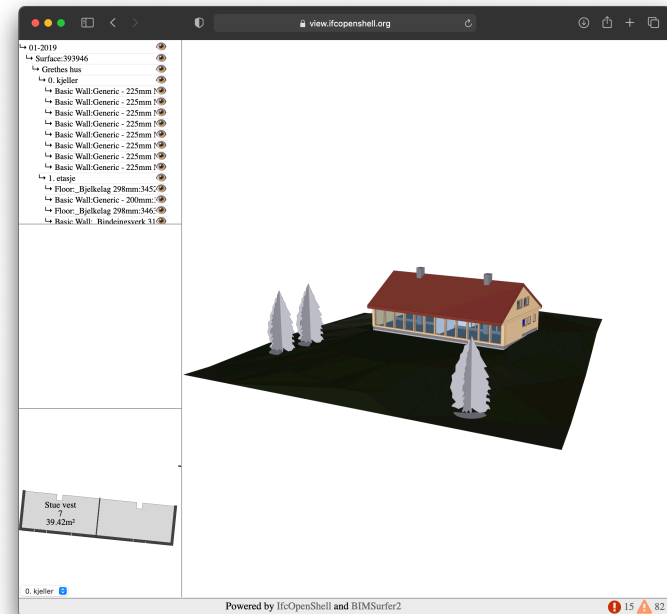
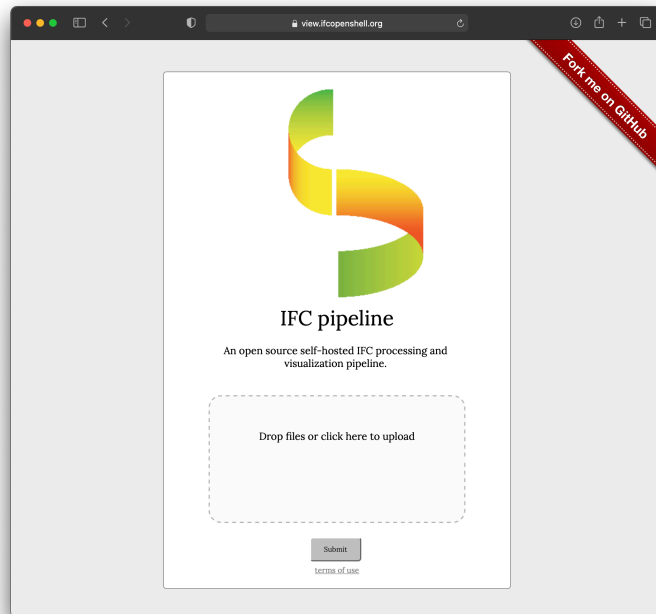


<https://atom.io>

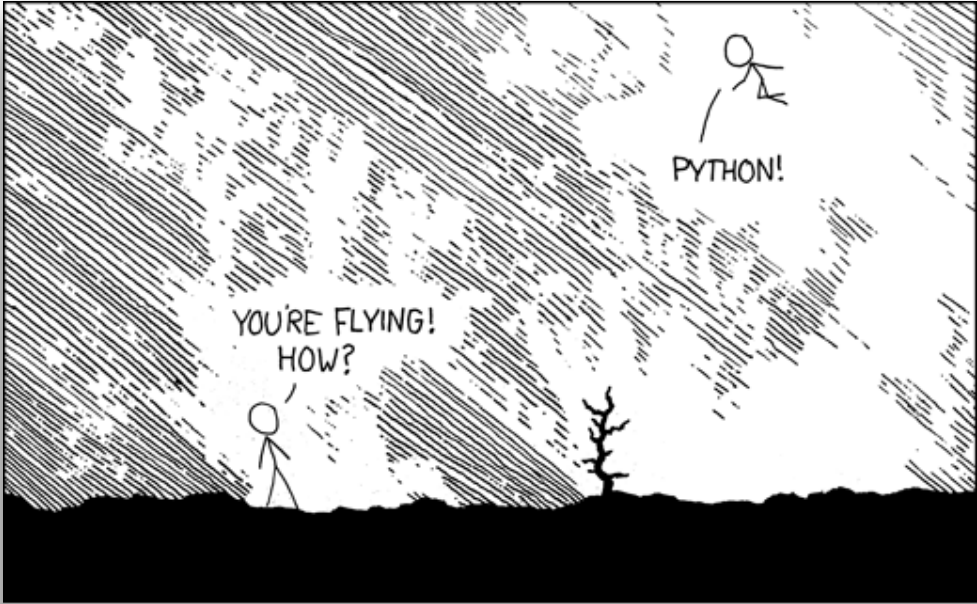


<https://www.jetbrains.com/pycharm/>

- Download and install IfcOpenShell-Python
  - <http://ifcopenshell.org>
- Read articles about IfcOpenShell
  - <http://academy.ifcopenshell.org>
- Try IFC pipeline (but do not stress the service!)
  - <https://view.ifcopenshell.org>







I LEARNED IT LAST NIGHT! EVERYTHING IS SO SIMPLE!  
HELLO WORLD IS JUST  
`print "Hello, world!"`

I DUNNO...  
DYNAMIC TYPING?  
WHITESPACE?

COME JOIN US!  
PROGRAMMING IS FUN AGAIN!  
IT'S A WHOLE NEW WORLD UP HERE!




BUT HOW ARE YOU FLYING?

I JUST TYPED  
`import antigravity`

THAT'S IT?

... I ALSO SAMPLED EVERYTHING IN THE MEDICINE CABINET FOR COMPARISON.



BUT I THINK THIS IS THE PYTHON.

<https://www.coriers.com/our-favorite-python-books-courses-and-youtube-videos/>