

Programming Essentials

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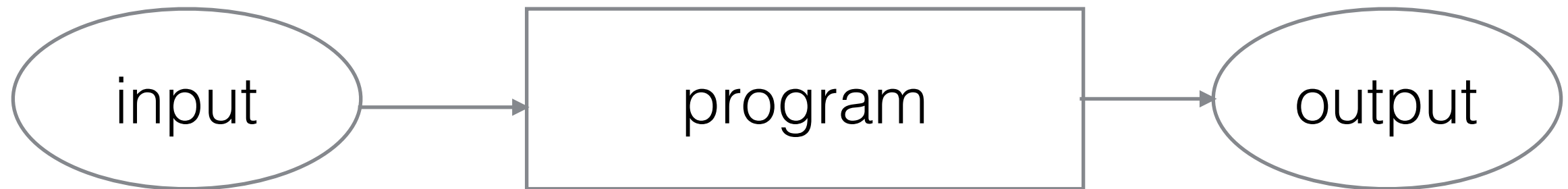
Petr Pošík, <http://labe.felk.cvut.cz/~posik/>
<https://cw.fel.cvut.cz/wiki/courses/be5b33prg/start>



The Way of Program

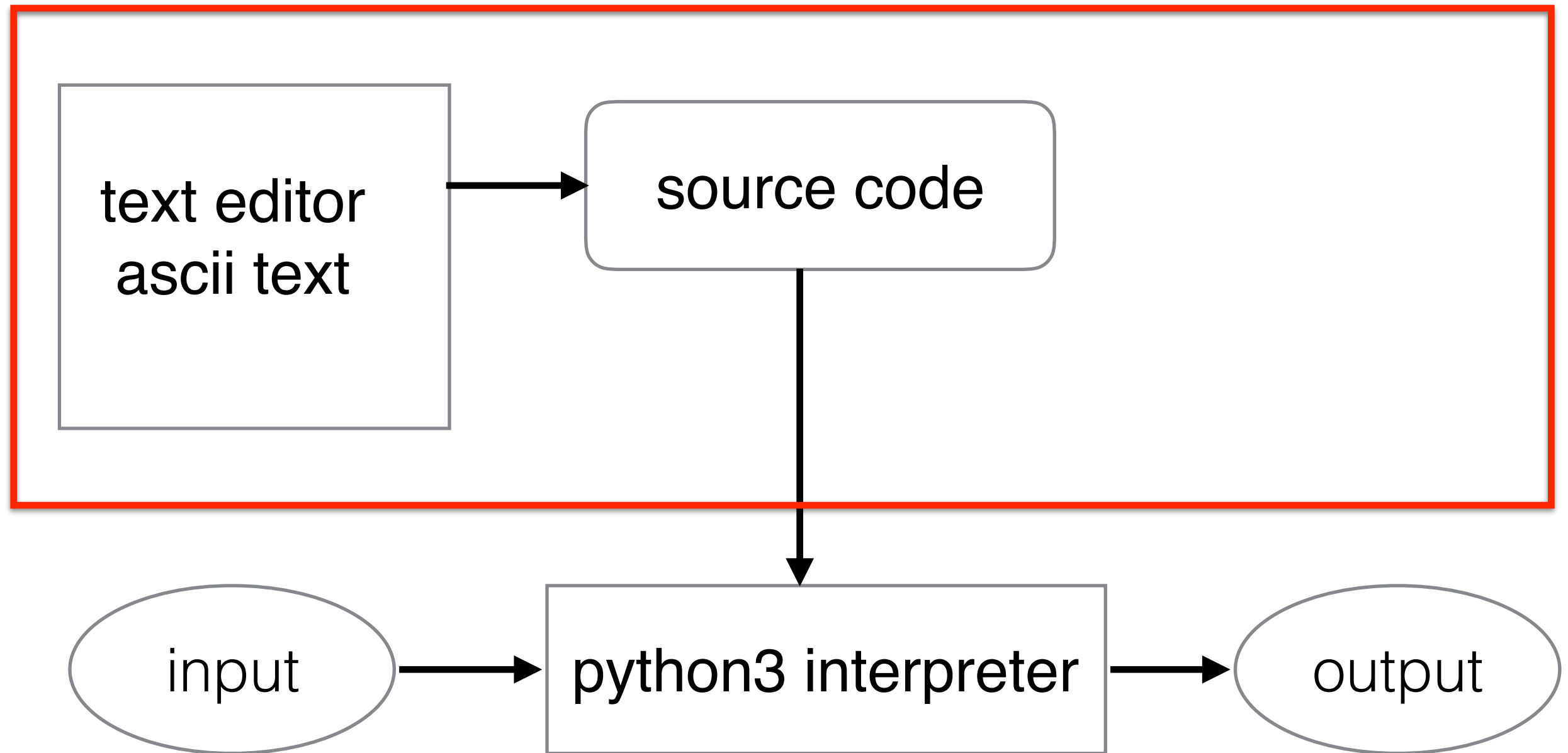
- think like a computer scientist
- combines mathematics, engineering, and natural science
- **problem solving!**
 - formulate problems
 - think about solutions
 - express (implement) solutions clearly and accurately

what a program does



- sorting
- finding
- analyzing
- computing
- connecting

what is a (our) program? (closer look)



Python, what?

Integrated Development Environment, IDE



Python program, code,
expressions

Python interpreter

Operating System
MS Win, Mac OSX, Linux

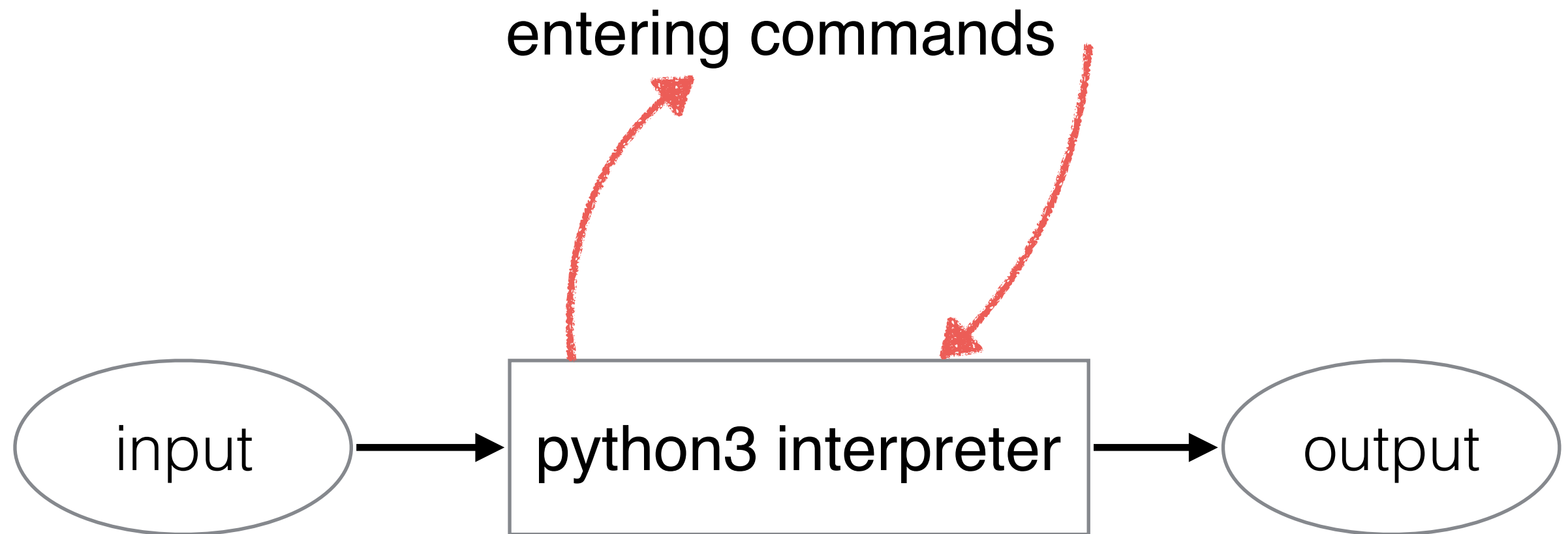
computer - hw



Why Python?

- handy for engineers (rapid prototyping)
- easy for beginners
- but strong for big apps - (<https://www.tensorflow.org>, <https://www.scipy.org>, <http://scikit-learn.org/stable/>, <http://playground.arduino.cc/Interfacing/Python>, ...)
- Python is often used to command other programs (https://www.blender.org/manual/editors/python_console.html, ...)
- available for many platforms/operating systems

Python Interpreter - immediate mode



Debugging

- syntax errors
- runtime errors
- semantic errors

Reading

- chapter 1 and 2 from the Book, i.e.
- <http://openbookproject.net/thinkcs/python/english3e/>
- try at least some of the excercises at the end of each chapter

Course Admin

- lectures, computer labs,
- homeworks (50%)
- programming tests during the term (20%)
- final exam - programming (30%)
- extra: activity, finding bugs, errors, ... (10%)