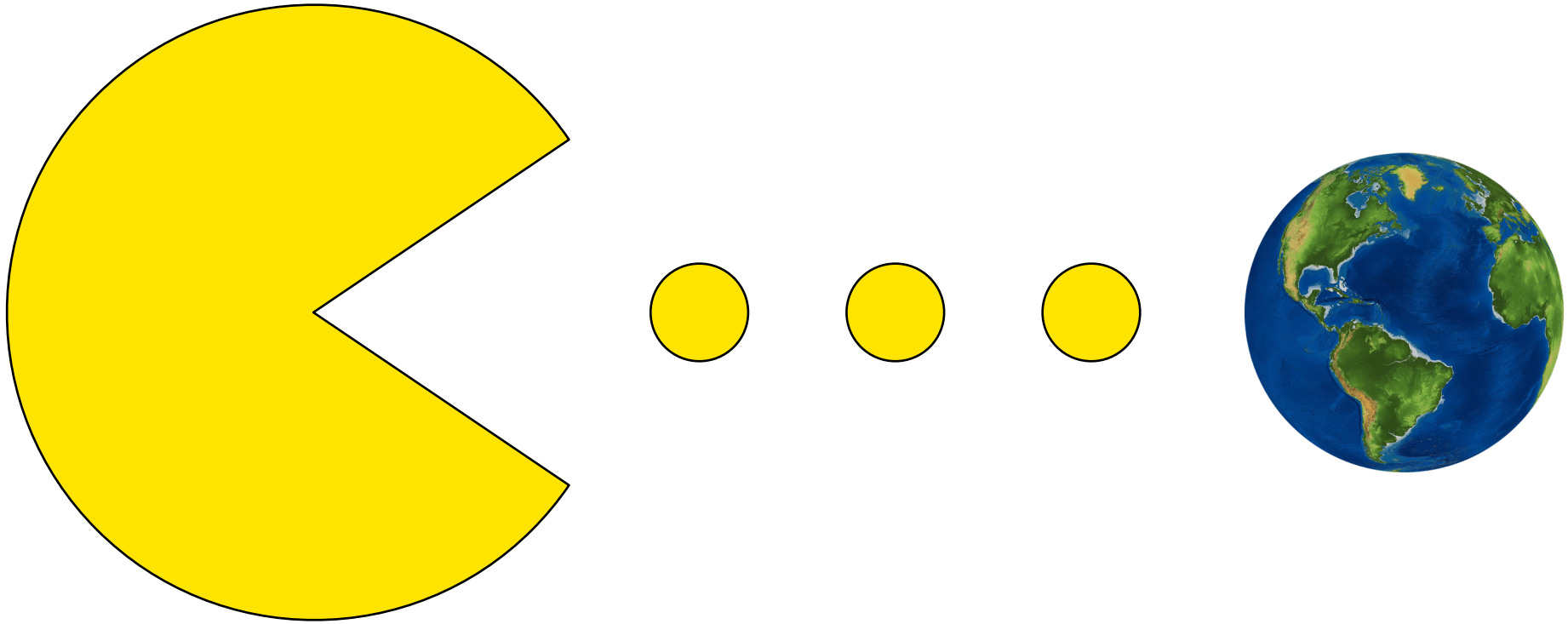
Informatik 1 - Introduction

Prof. Harald Gall

University of Zurich, Department of Informatics

“Software is Eating the World!”

Marc Andreessen, Cofounder of Netscape, 2011



https://pixabay.com/en/world-earth-planet-globe-map-1301744/

What can computers accomplish?

- Driving autonomous cars
- Defeating humans at chess and go
- Searching the World Wide Web
- Rendering photorealistic pictures
- Finding the shortest route from home to work
- ...

How can computers achieve that?

- A computer performs calculations and remembers the results
- Computers can do that at an incredible scale and speed
  - 200 petaflops (10^15): IBM and Nvidia's Summit can do 200'000 trillion calculations per second ("millions of times faster than a high-end desktop computer")
  - 120 petabytes, (= 120 million gigabytes) of storage (= 200'000 hard drives)
- But, computers only follow instructions that were encoded by humans
- In this lecture, you will learn how to do that!

Goals of the Lecture

At the end of the course, you will be able to...

- analyze problems that you want to solve with software
- design programs and algorithms
- read and write basic programs
- explain the foundational concepts of hard- and software

No programming experience? Don’t worry!

- Informatics 1
- Introduction to Programming
- “No” Prior Knowledge is required or expected

Course Organization

Organization

Lecturers	Prof. Dr. Harald Gall, Dr. Sebastian Proksch
Course Assistants	Adelina Ciurumelea, Giovanni Grano
Teaching Assistants	Alexander Hofmann, Matthias Felix
Lecture Schedule	Tuesday 12:15 - 13:45
ECTS credits	6
General Questions	OLAT Forum
Personal Questions	info1@lists.ifi.uzh.ch
Registration	1. UZH Module Booking 2. Registration for the Lab Session through OLAT

Tutors

- Thomas Huber
- Claudio Brasser
- Ivo Aeschlimann
- Yves Rutishauser
- Clara-Maria Barth
- Christian Birchler
- Noah Chavannes
- Michael Blum
- Jeremy Kubrak
- Getoar Gallopeni
- Marc Zwimpfer
- Johann Schwabe

Course Links

- **Website**: http://seal.ifi.uzh.ch » Teaching » Courses » Info 1
- **OLAT** (AINF1166 Informatik I): https://lms.uzh.ch/url/RepositoryEntry/16444784786
- **edX Online Course**, offered by MIT: https://www.edx.org/course/introduction-computer-science-mitx-6-00-1x-11
- Official **Python documentation**: https://docs.python.org/3/
- **Book**: Introduction to Computation and Programming Using Python (http://amzn.to/2v5OCXP)

Course Structure

- Weekly Lecture
- Weekly Assignments
  - Home Exercises
  - Lab Sessions
- Exams
  - Midterm Exam
  - Final Exam
- Bonus System

Weekly Assignments

- Home Exercise
  - Exercises are published every Monday
  - Submit them before the lecture in the following week
- Lab session
  - Meet with your tutor
  - Discuss submitted assignment during lab sessions

Exams

- Midterm
  (final exam for students enrolled in “Data-oriented Programming”)
- Final Exam

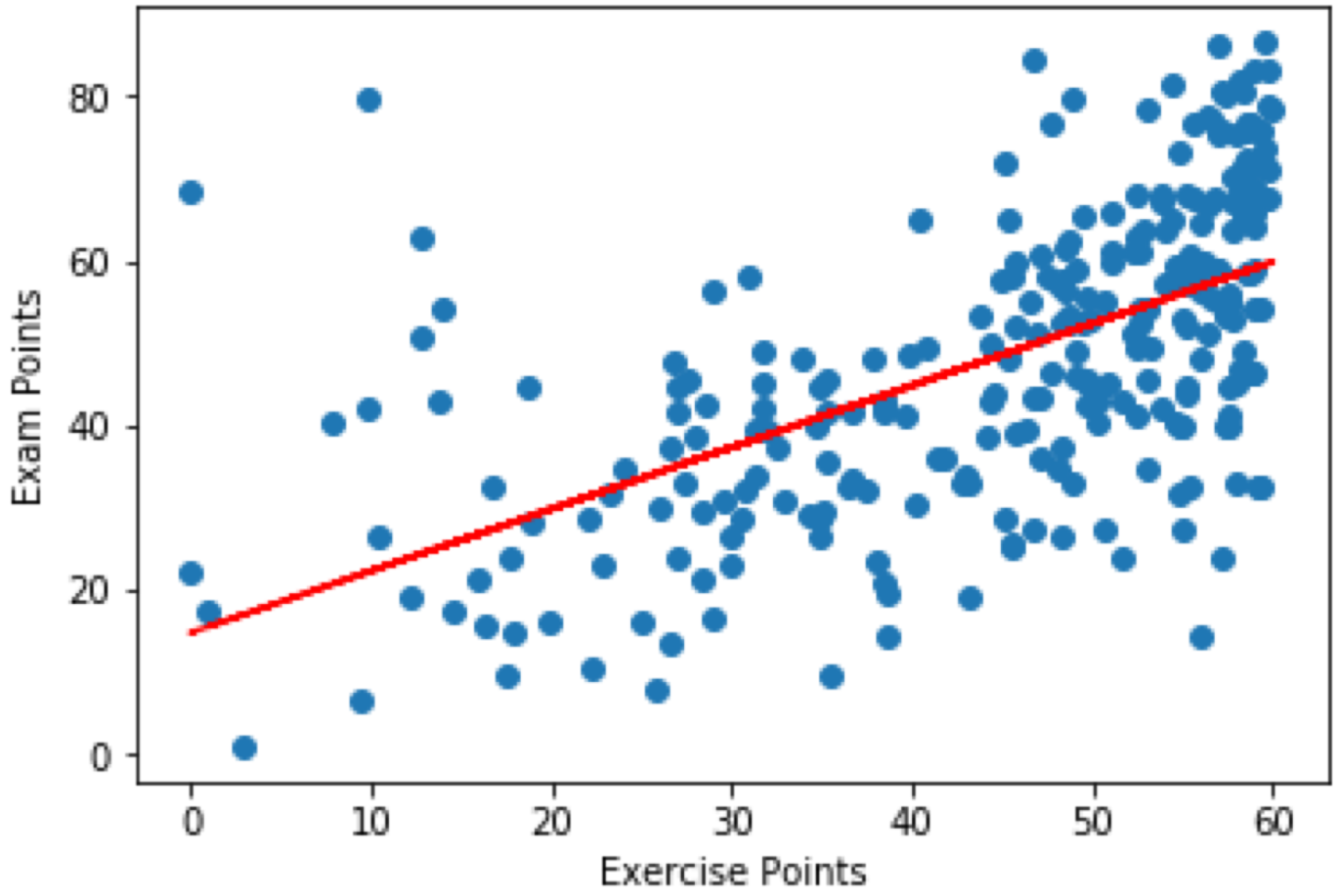
Grading

- Your grade is primarily determined by your final exam
- Students that pass the final exam, can further improve their grade in a bonus system
  - Did you pass the midterm? +0.25 for final grade
  - Did you reach >= 75% points over all assignments? +0.25 for final grade
- The bonus cannot help you to pass the final exam though!

Tips

- Programming is fun, but it takes time to master it.
- Do not give up when it does not “make click” right away.
- Make sure that you
  - study the available material before the lecture
  - look for additional material, if necessary
  - ask questions during the lecture and weekly exercises
  - don’t just read code! Write it yourself to get more familiar with Python and its functions, your IDE, and get a better feeling for how to approach coding tasks!
- Practice makes perfect, so practice, practice, practice!

Take the exercises seriously!



Last year, we found a clear correlation between the points reached in the exercise and the points reached in the final.

Until Next Time

- Registration (!!!)
  - book the module (Modulbuchung)
  - enroll in our OLAT course
  - select a lab session in OLAT
- Work on the first assignment
- Enroll to the online course on edX (Highly recommended!)
- Go to the lab session next week to get started