

# Professional Software Engineering

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Chair of Computational Modeling and Simulation

# Schedule week #1

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- » **Structure of the course**
- » Programming Paradigms
- » Introduction to Programming

**All you need to know**

# **COURSE STRUCTURE**

# Formal Aspects

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- » Location: Room 3238 (computer room) in presence, or zoom online
- » Lectures & exercises will be recorded
- » Every Thursday
- » Official lecture start: 8 am – 9:30 am CET
- » Official exercise start: 9:45 am – 11:15 am CET
- » Attendance is not mandatory, but highly recommended for beginners

# Formal Aspects

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- » 6 ECTS
- » Lecture material will be provided via Moodle
- » Work assignments
  - There will be 6 assignments, each assignment will be rated with 10 points if passed, else 0
  - The 4 highest assignment scores will contribute to the overall grade
- » Exam
  - Written exam at the end of the semester (no aids allowed)
- » Module grade
  - 60% from exam points and 40% from assignments
  - Minimum of 40 points & exam participation necessary to pass the course

# Important Dates

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- |                                  |                     |
|----------------------------------|---------------------|
| » First assignment (individual): | 28th Oct – 11th Nov |
| » Second assignment*:            | 11th Nov – 25nd Nov |
| » Third assignment*:             | 25nd Nov – 09th Dec |
| » Fourth assignment*:            | 09th Dec – 23th Dec |
| » Fifth assignment*:             | 13th Jan – 27th Jan |
| » Sixth assignment*:             | 27th Jan – 10th Feb |
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- » Written exam: 03.03.2023, 14:15 – 15:15, Room 2770

*\*As groups or individual*

**All dates are still preliminary!**

# Course Objectives

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You will learn how to ...

- » ... run common programming concepts
- » ... use test-driven methods for development
- » ... connect your code to a database
- » ... develop software in a team

 Introductory lecture into programming and software development

# Getting Help!

- **Internet:**
  - **Stack Overflow**
  - **msdn.microsoft.com**
  - **codeplex**
- **Personal**
  - **Forum (Moodle)**
  - **Email**
  - **Personal**



I'LL OFTEN ENCOURAGE RELATIVES TO TRY TO SOLVE  
COMPUTER PROBLEMS THEMSELVES BY TRIAL AND ERROR.  
HOWEVER, I'VE LEARNED AN IMPORTANT LESSON: IF THEY  
SAY THEY'VE SOLVED THEIR PROBLEM, *NEVER* ASK HOW.

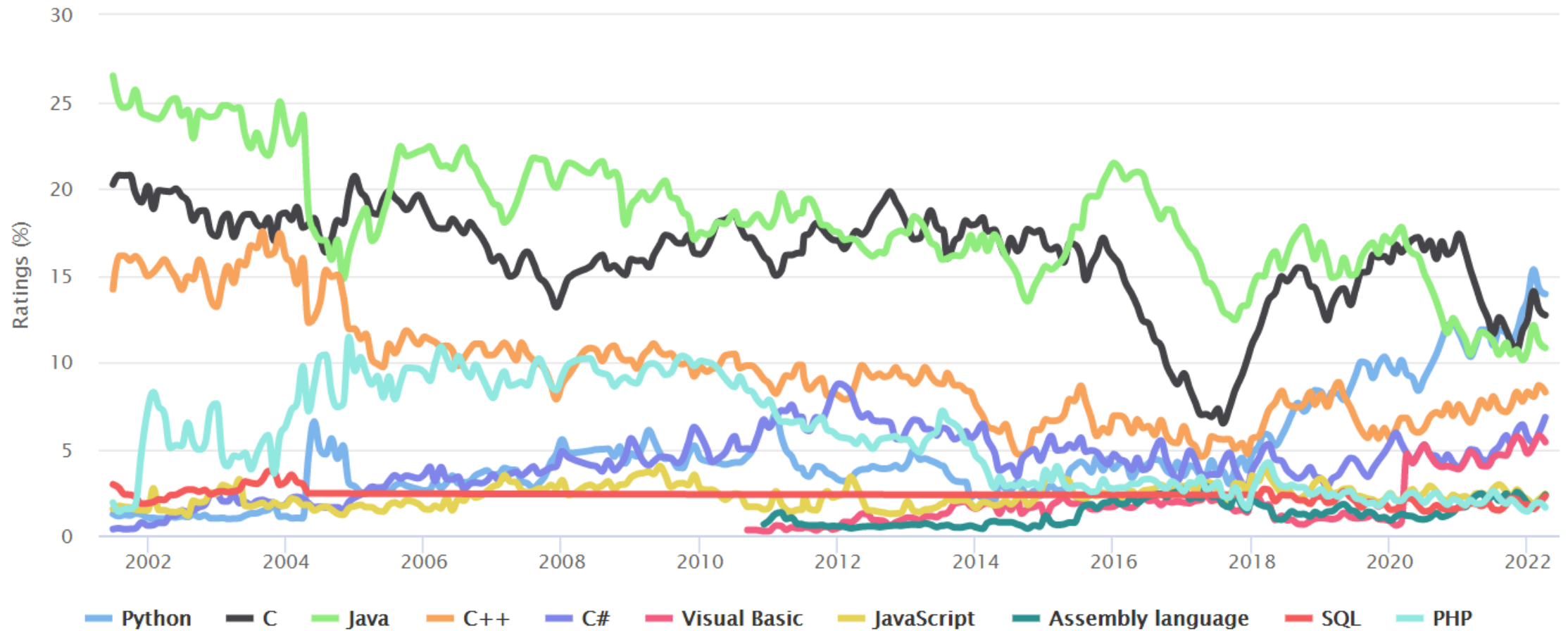


# Programming Paradigms and Languages

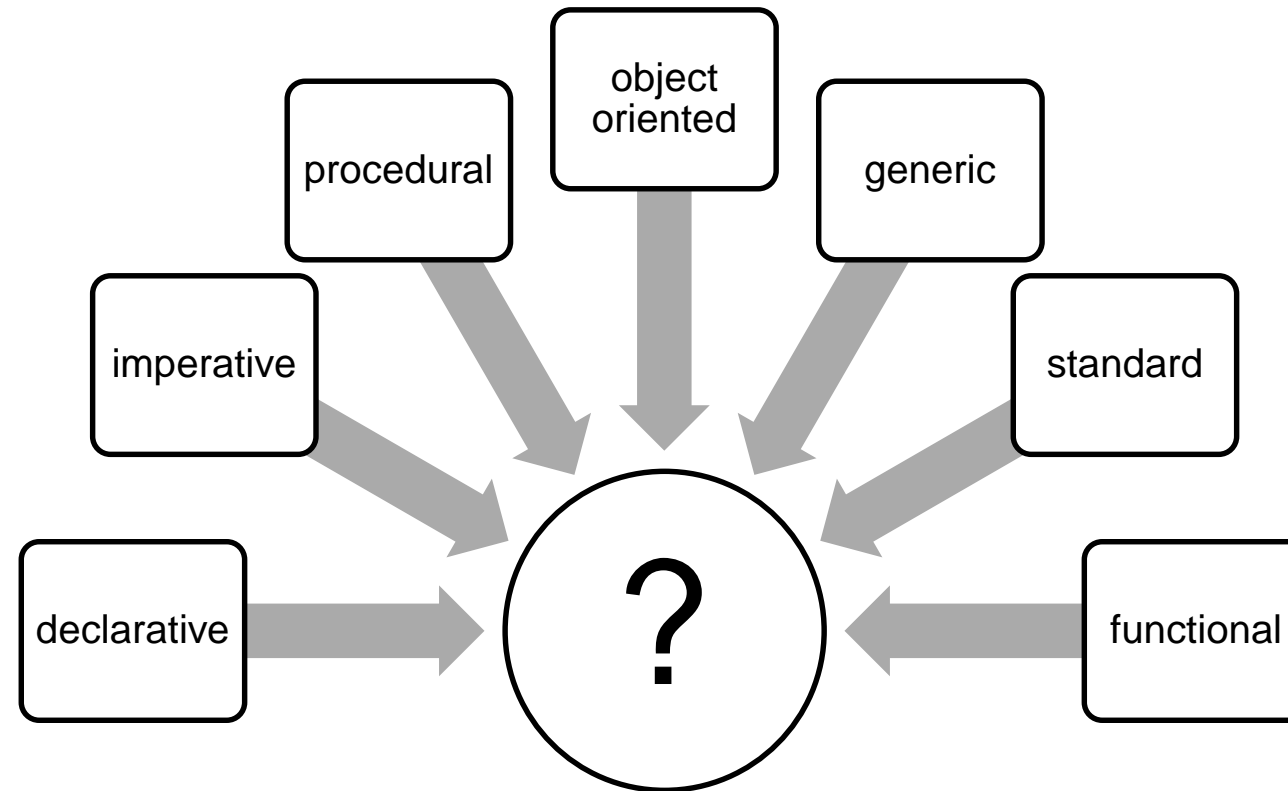
# **THE RIGHT TOOL FOR THE RIGHT JOB**

## TIOBE Programming Community Index

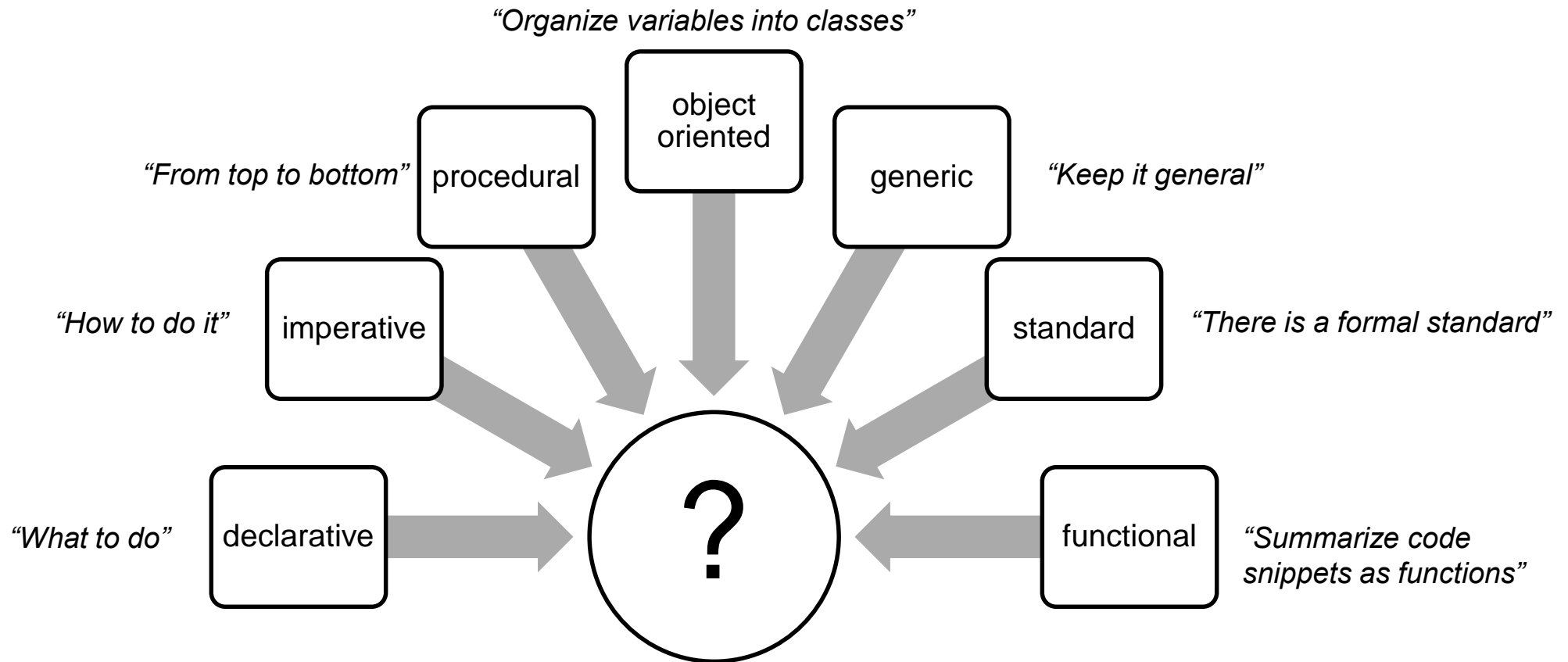
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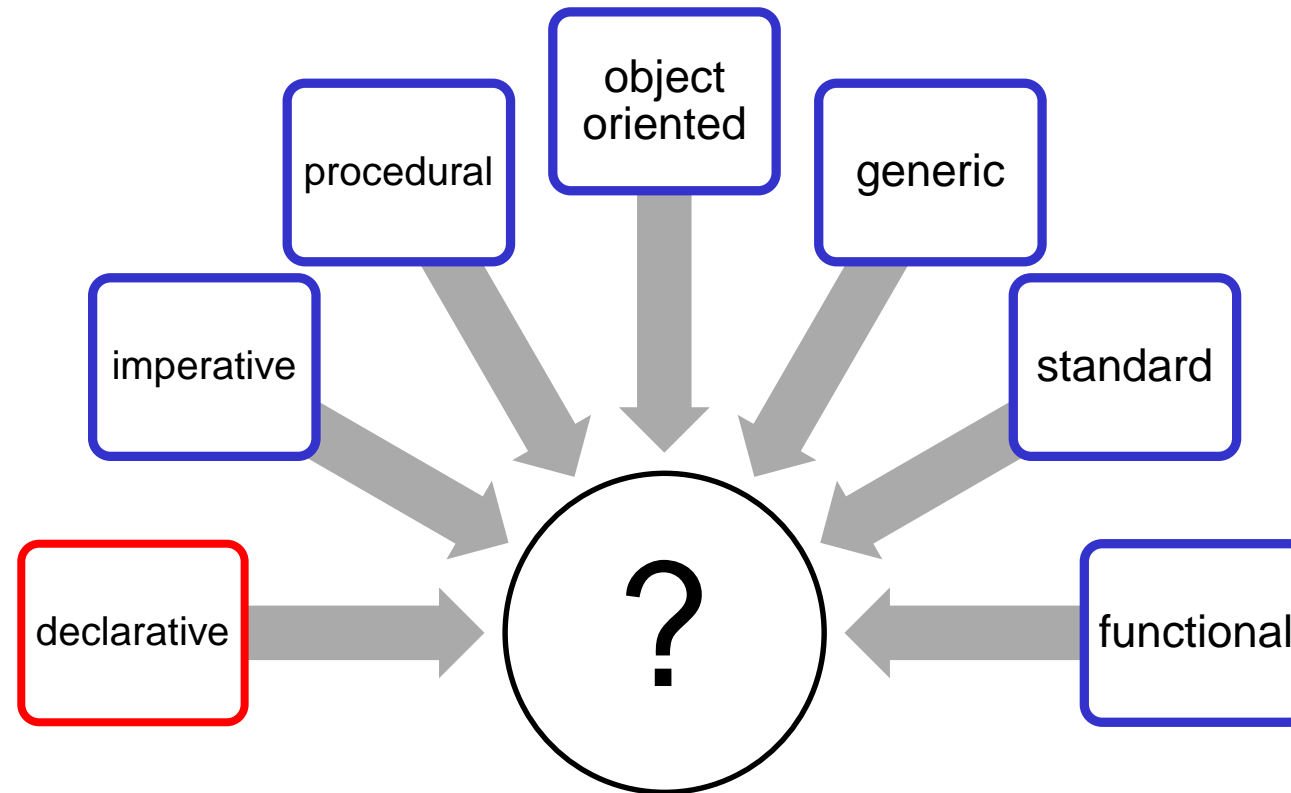
# Programming paradigms



# Programming paradigms



# Programming paradigms



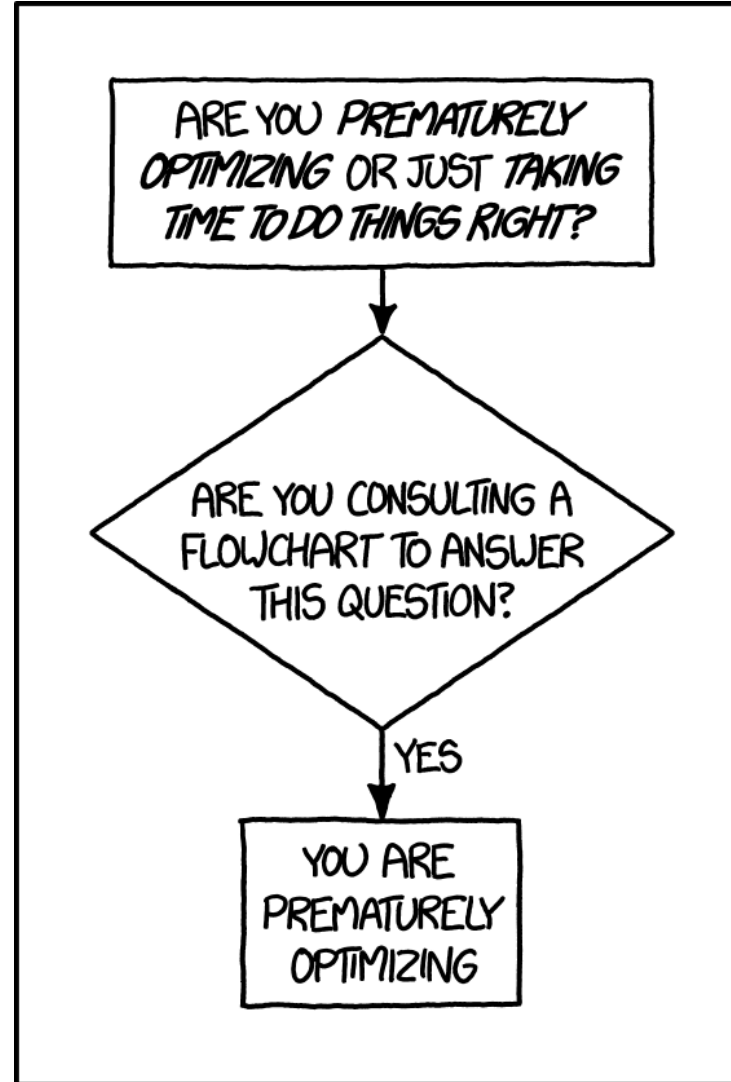
Why C#? Everything but declarative...

# Applications of popular languages...

Language	Applications
<b>C</b>	Application, system, <sup>[15]</sup> general purpose, low-level operations
<b>C++</b>	Application, system
<b>C#</b>	Application, RAD, business, client-side, general, server-side, web, <a href="#">game programming</a>
<b>Fortran</b>	Application, numerical computing
<b>Java</b>	Application, business, client-side, general, mobile development, server-side, web
<b>JavaScript</b>	Client-side, server-side, web
<b>MATLAB</b>	Highly domain-specific, numerical computing
<b>Python</b>	Application, general, web, scripting, artificial intelligence, scientific computing
<b>PHP</b>	Server-side, web application, web

⇒ Different purpose, different programming language...

from [https://en.wikipedia.org/wiki/Comparison\\_of\\_programming\\_languages](https://en.wikipedia.org/wiki/Comparison_of_programming_languages)



# Survey

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Please fill out the survey from Moodle if you haven't done so already!

➡ <https://www.surveymonkey.de/r/6B2JMNW>

Login your local machines and start Visual Studio



# Thank you!