Brief History of Programming Languages


First high-level languages
Computers powerful enough to compile programs

Prototypes for each of the language paradigms (imperative, functional, logic)

Focus on programming large-scale systems

Internet Era
IDE’s, garbage collection, scripting languages

Parallel (e.g. taking advantage of multi-cores)

Fortran (FORmula TRANslator)
Lisp (LISt Processor)
ALGOL (ALGOritmic Language)
BASIC
C
C++
Smalltalk
Pascal
Ada
Matlab
R
Python
PHP
Javascript
Ada 95
Visual Basic
Java
Julia
Swift

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Prolog


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Internet Era
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Parallel (e.g. taking advantage of multicores)
• New languages are developed to accomplish specific tasks or to take advantage of new computing power or technologies

• Over your career, you will likely need to learn many languages (some old, some new)

• Learning new languages is faster if you understand the principles behind them (what is common, what the technical terms are, how they can be formally defined)

• C is here to stay, is close to the hardware (which means it can be super efficient), so it is important to learn it
What do we do in CS333?

Generally speaking, we do two things in CS333

- **Learn C** language

- **Inspect the fundamentals** of programming languages
  - Use **C Lite** (a lite version of C) to study the theoretical problems
  - Use **C/Java/Python** for the practical problems

Ultimate goal: know how to **learn a new programming language easily** and **write more efficient programs**
Coursework & Evaluation

Weekly Projects: **45%**

- **Eight projects:** five of them are bi-weekly projects, and the rest three are weekly projects.

- Assigned usually on Wednesdays, and the usual deadline is the following Thursday midnight *(for weekly projects)* or midnight of the second Thursday after the project is assigned *(for bi-weekly projects).*

- Every project has **two parts:** C language part (individual work) and the selected language part (can collaborate with a partner from project 2)

- **Late submission** will receive a **maximum score of 26/30**.

- **One four-day extension** for you to use at your discretion over the semester (except the final project)

- Submit your source code and README file to [filer.colby.edu](http://filer.colby.edu) and your write-up on Wiki
Weekly homework assignments: 10%

- Assigned usually every Wednesday, and the deadline is the following *Friday at the beginning of the class*.

- **Hard deadline**. We discuss the solution in Friday's class, so late submission will not be accepted.

- **Graded in a binary fashion**: hand in a reasonable attempt before deadline, you get a 1, otherwise a 0.

- Email your homework to me with the subject in the format “**CS333 Spring2021 HW# — Your Name**” (e.g., CS333 Spring2021 HW1 -- Ying Li).
Coursework & Evaluation (cont.)

✦ Bi-Weekly quizzes: **15%**

- 10-15 minute in class quiz, usually *every other Friday*

- Each quiz may be made up when a prior request is made or there is a documented health issue. Please contact me immediately in the event of illness and other unforeseen circumstances, we will work out accommodations.

- The *lowest quiz grade will be dropped.*
Coursework & Evaluation (cont.)

✧ Final Exam: 20%
  • *Oral,* finish it individually; no make-ups
  • Details will be given in the last class.

✧ Participation: 10%
  • You are expected to *attend every lecture* and *actively join the class discussions*
  • If you have to miss one or more lectures for any reason, please let me know in advance. I'm happy to work with you and direct you to the lecture notes and coursework.
  • Lecture notes will be posted in the *Notes* section of the course webpage few hours after the class.
  • Don’t hesitate to *come to my office hours* or email me. I'm happy to help if you let me know your questions.
  • Participation also includes *asking for help from the TAs.*
How to Succeed

✦ **Projects:** Start working on the projects as early as possible. Ask the TAs and me for help if you need. Talk with your peers about the course concepts.

✦ **Homework:** Homework assignments help you self-check your understanding of the course contents and prepare you better for the quizzes. You are strongly encouraged to try out the homework questions before reading my homework solutions.

✦ **Quizzes:** Study for the quizzes by doing the homework assignments. The lowest quiz grade will be dropped. So, your grade won't be affected by that single underperformed quiz.

✦ **Participation:** Be active in class, asking questions and joining discussions. Come to office hours. Ask Ying or TAs for help.

✦ **Final Exam:** Learn your selected language and C language well enough during the semester to feel comfortable talking about these languages. Start working on the exam early after it's assigned.
Help Outside of Class

✦ Stephanie’s Office Hours (Davis 112)
  • Tuesday 4-5pm
  • Wednesday 1-4pm
  • Thursday 1-3pm

✦ TA Session in Davis

<table>
<thead>
<tr>
<th>Date, Time</th>
<th>TA (Email)</th>
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</thead>
<tbody>
<tr>
<td>Thursday 7:00 - 10:00 pm</td>
<td>Matthew Maring (<a href="mailto:mhmari22@colby.edu">mhmari22@colby.edu</a>)</td>
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You can find all the course information, lecture notes, assignments, videos for remote lectures, and more on the course webpage.

The entryway to the course webpage:
Go to: cs.colby.edu; Click: CS333 link