Programming in C

Dr. Neill Campbell
Neill.Campbell@bristol.ac.uk

University of Bristol

June 16, 2021

Table of Contents

About the Course

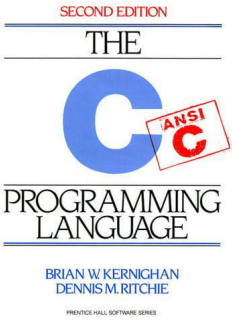
These course notes were originally based on:

C By Dissection (3rd edition)
Al Kelley and Ira Pohl

because I liked arrays being taught late(r). I've since changed my mind a little & have re-jigged the notes quite heavily for this year.

Resources

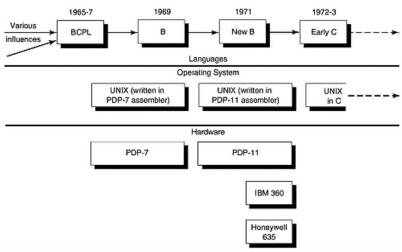
- Free : `https://en.wikibooks.org/wiki/C_Programming`
- A list of more : `https://www.linuxlinks.com/excellent-free-books-learn-c/`
- Whatever you use, make sure it's **ANSI C** or **C99** that's being taught, not something else e.g. C11 or C++.
- If you fall in love with C and know you're going to use it for the rest of your life, the reference 'bible' is K&R 2nd edition. It's not a textbook for those new to programming, though.



Computer Science Ethos

- Talk to your friends, ask for help, work together.
- Never pass off another persons work as your own.
- Do not pass work to others - either on paper or electronically - even after the submission deadline.
- If someone takes your code and submits it, we need to investigate where it originated - all students involved will be part of this.
- Don't place your code on publicly accessible sites e.g. github - other students may have extensions etc.

History of C



From **Deep C Secrets** by *Peter Van Der Linden*

- BCPL - Martin Richards
- B - Ken Thomson 1970
- Both of above are *typeless*.
- C - Dennis Ritchie 1972 designed for (& implemented on) a UNIX system.
- K&R C (Kernighan and Ritchie) 1978
- ANSI C
- C99 (COMSM1201)
- C++ - Object Oriented Programming (OOP)
- Java (Subset of C++, WWW enabled).

Why C ?

- One of the most commonly used programming languages according to `https://www.tiobe.com/tiobe-index/` - usually in 1^{st} or 2^{nd} place.
- Low-level (c.f. Java)
- Doesn't hide nitty-gritty
- Fast ?
- Large parts common to Java

Programming and Software Engineering

- Was traditionally Lectured 2(or 3) hours a week for weeks 1-12
- With COVID-19 I'll post the equivalent online, broken into manageable chunks
- Programming (C), data structures, algorithms - searching, sorting, string processing, trees etc.

Assessment

- Weekly (unmarked) exercises that, if completed, should ensure you are able to pass the unit.
- Approximately three/four assignments and one lab test.
- One major project due in early TB2 (35%).
- Hard to gauge timings, so don't make any plans in advance - I'll change it if we're going too fast.

Table of Contents

Table of Contents

Table of Contents

Table of Contents