Introduction to MATLAB

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Important Links

- Course Notes
- MATLAB installation instructions
- Official MATLAB help pages
- Course Feedback
- Slides: https://uomresearchit.github.io/matlab-novice/files/intro_slides.pdf

Timetable

- **10:00 — 11:15** Session 1, part 1
- **11:15 — 11:30** Break
- **11:30 — 12:30** Session 1, part 2
- **12:30 — 13:30** Lunch
- **13:30 — 14:45** Session 2, part 1
- **14:45 — 15:30** Break
- **15:30 — 16:30** Session 2, part 2

Outline

- Investigating medical data sets throughout the day - reaction of patients to a new drug to treat arthritis.
- Start with one data set, then move to dealing with multiple data sets.
- Variables and arrays
- Plotting data
- Writing scripts to repeat our analysis
- Loops and choices - analysing lots of data quickly and efficiently.
- Functions - making our code stable and re-usable.

Teaching methods

- Live coding - we will demonstrate everything live on the screen.
- Regular exercises to try out what you're learning.
- Course notes and slides available online.
- All examples and exercises included in notes.
- We're using MATLAB today, but you'll learn lots of things that are useful when working with other languages.

Getting help / asking questions

- Use sticky notes on your monitor to indicate how things are going:
- ‘Green’ if you’re okay
- ‘Orange if you need help / you’re not okay
- **You will have questions, please ask them!**
- Please interrupt with questions.
- I will also pause at the end of each section for questions.

MATLAB

- MATLAB (MATrix LABoratory) is a programming language and numerical computing environment with its own IDE (Interactive Development Environment
- [Advantage] Very good at matrix operations
- [Advantage] Large user base in science and engineering
- [Advantage] Well documented
- [Advantage] Can do a lot with it
- [Advantage] “Semi-interpreted” language - easy to use, great for prototyping and debugging
- [Disadvantage] “Semi-interpreted” language - slower than “compiled” language (eg C/C++)
- [Disadvantage] Not free to use or open source

Let’s Code!

Next steps

- Please fill in the feedback form.
- How can you use what you've learned today?
- Google and MATLAB documentation are very useful if you get stuck. I use both all the time.
- Attend one of our other courses.