

Introduction to programming

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Introduction to programming

- ▶ What?
- ▶ Why?
- ▶ Who?
- ▶ How?

What?

- ▶ Data analysis through coding - “data science”.
- ▶ Simple programming with Python and standard Python libraries.
- ▶ Loading data.
- ▶ Selecting and exploring data.
- ▶ Plotting data.
- ▶ Simulation and basic statistical inference.

Why?

- ▶ Programming has become a basic skill for research.
- ▶ Code makes data analysis more:
 - ▶ Powerful;
 - ▶ Shareable;
 - ▶ Reproducible;
- ▶ Code makes it easier to understand statistics.

Who?

- ▶ Anyone
- ▶ You need have no experience with programming.
- ▶ Very little mathematics.

How?

- ▶ Winter term.
- ▶ Monday 2-3pm : lecture / workshop - mixture of talk and work.
- ▶ Thursday 10-10am : lecture / workshop - ditto.
- ▶ Working on your laptop (or a class laptop).
- ▶ Coding a web browser (Jupyter notebooks).
- ▶ Assessments:
 - ▶ 4 x 5% homework assessments; template analyses to fill in.
 - ▶ 1 x 80% structured data analysis; several template notebooks with hints.

Examples at: <https://github.com/matthew-brett/dsfe>

Questions?