

# Make for statistics

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# Makefile intro

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**"Make is a software build automation tool that automatically builds executable programs ... from source code by reading files called [Makefiles](#) which specify how to derive the target program." (Wikipedia)**

While Makefiles were originally designed for compiling C code, they can also be used to automate common tasks involving running sets of commands.



# Goals

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- **Demonstrate how I use Makefiles to automate analytic workflows**
- **Explain how engineers & other technical professions use them**
- **Seed some thoughts on how you might use them too**

# Why Makefiles?

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- **Portable**
- **Familiar**
- **Self-documenting**
- **Source controlled**
- **Facilitates reproducibility <<<**

# Anatomy of a Makefile

**Phony target list**

**Default target**

**Phony target**

**Target**

**Target**

```
.PHONY : all regression plot clean
```

```
all: plot regression
```

```
clean:
```

```
    rm -f plot.png test.log data.csv
```

```
regression: data.csv Dependency
```

```
    Rscript regression.R data.csv
```

```
plot.png: data.csv generate_plot.R
```

```
    Rscript generate_plot.R data.csv
```

```
data.csv:
```

```
    Rscript scrape_data.R data.csv
```

# Demo: R Makefile

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[github.com/jonathanmcmahon/make-for-statistics](https://github.com/jonathanmcmahon/make-for-statistics)



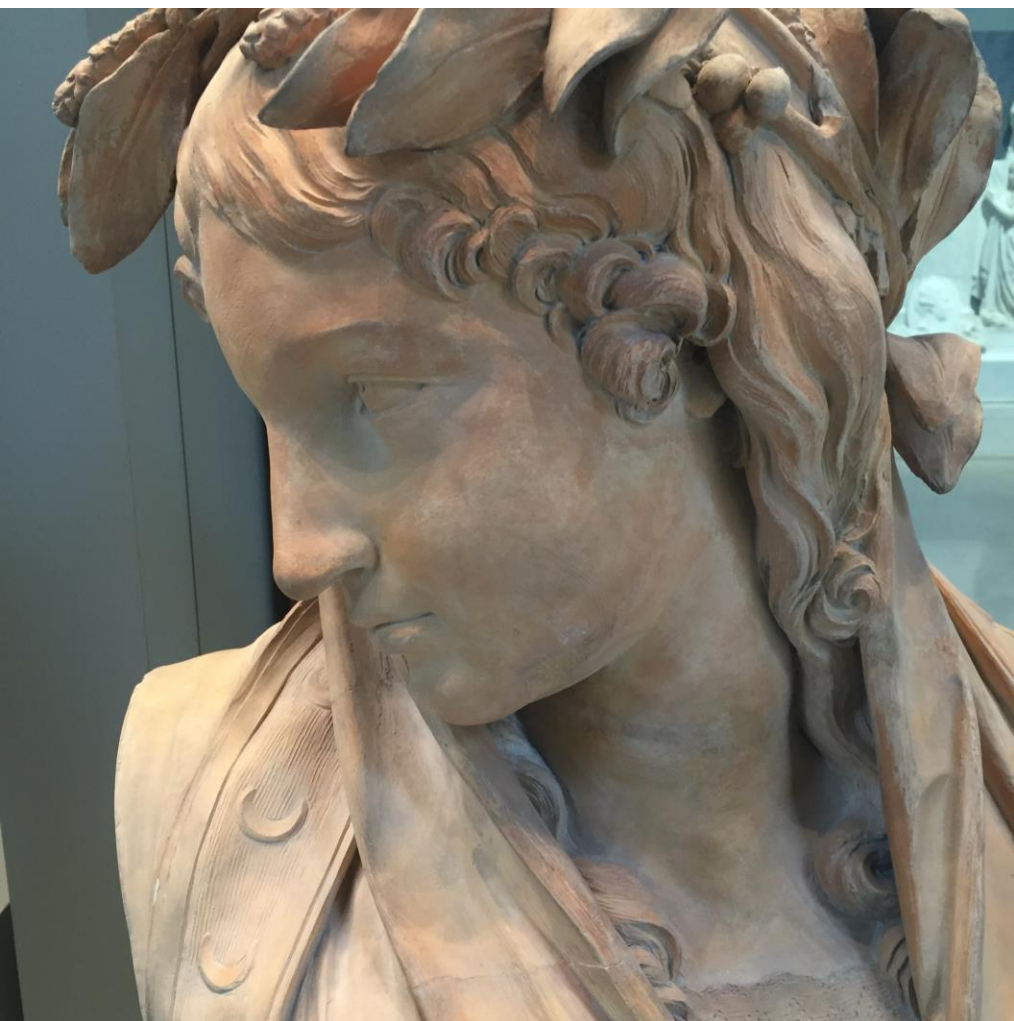


# Demo: API Project

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[github.com/jonathanmcmahon/python-dev-env](https://github.com/jonathanmcmahon/python-dev-env)





# thank you

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If you have any other thoughts or questions,  
you can reach me at:

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# References

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<https://github.com/jonathanmcmahon/make-for-statistics>

<https://github.com/jonathanmcmahon/python-dev-env>

<https://www.gnu.org/software/make/manual/make.html#toc-Writing-Makefiles>

[https://en.wikipedia.org/wiki/Make\\_\(software\)](https://en.wikipedia.org/wiki/Make_(software))

<https://github.com/paulRbr/ansible-makefile>