

Computation, Problem Set #3, Decomposition and Speed

OSM Lab, Justin Gardiner

Due Tuesday, July 11 at 8:00am

Do the following Exercises from the Brigham Young University Applied Mathematics and Computational Emphasis (ACME) Python labs [Humpherys and Jarvis \(2017\)](#) and from [QuantEcon.org](#).

1. **Exercises from ACME: QR Decomposition 1 lab.** Do problems 1 through 5 from [QR Decomposition 1](#) lab.
2. **Exercises from ACME: QR Decomposition 2 lab.** Do problems 1 through 6 from [QR Decomposition 2](#) lab. You will need to download the [housing.npy](#) and [ellipse.npy](#) files, which are saved in the course repository.
3. **Exercises from ACME: SVD Image Compression lab.** Do problems 1 through 5 from [SVD Image Compression](#) lab. You will need to download the [hubble.jpg](#) file, which is saved in the course repository.
4. **Exercises from ACME: Drazin Inverse lab.** Do problems 1 through 4 from [Drazin Inverse](#) lab. You will need to download the [social_network.csv](#) file, which is saved in the course repository.
5. **Exercise from QuantEcon: Need for Speed lab.** Do exercise 1 from [Need for Speed](#) lab.

References

Humpherys, Jeffrey and Tyler Jarvis, “Computational Labs for Foundations of Applied Mathematics, Volumes I and II,” 2017.