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| **Week 1 Lecture 1** |  | **29/3/2021** |

# General info

* Noud van Giersbergen
* Grade
  + - Final exam – 60%
    - Computer assignments – 20% x 2
* Attendance is mandatory!

# Materials

* Lecture slides
* Videos on Canvas
* Books
* Computer labs
  + - Mostly on Wed and Fri
    - This week Tue and Thu

# Motivations PNA

* **Algorithms are everywhere**
* **Many applications of optimization in economics**
  + - Min costs
    - Max revenues etc
    - Finding roots of f’(x) = 0
* **Applications of matrices in econometrics**
  + - Solving sys. of equations
    - OLS
* **Applications of integration**
  + - Find probabilities P(a =< X =< b)
* **Simulations** 
  + - Statistical properties of statistical quantities (estimators or test statistics)

# Software

* R
* RStudio

# Why R?

Control flow

* Order in which commands are executed in a program

If-else

# Tomorrow

* Exercises in the book – optional
* Attendance mandatory!