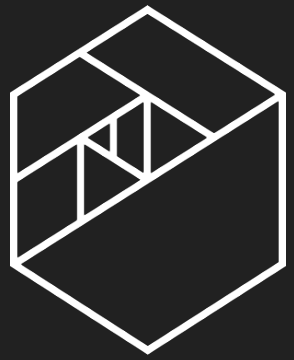
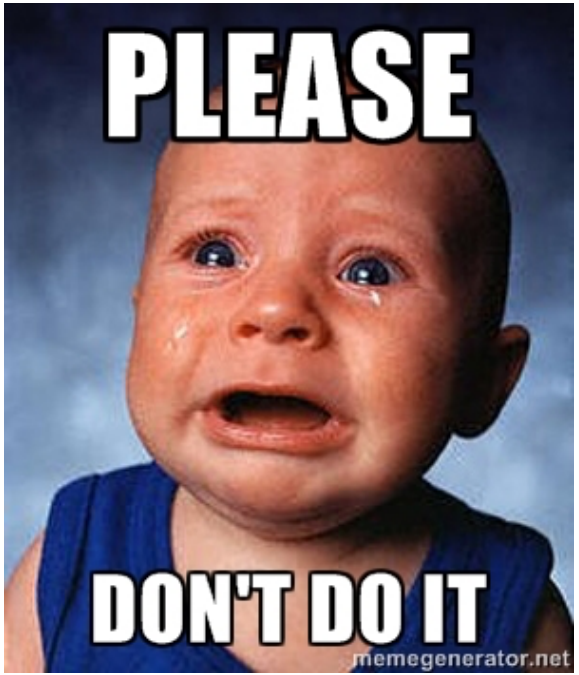


Design Thinking:
The Iterative Design Process

ONE APPROACH TO DATA SCIENCE

1. Start with some data
2. Figure out what problems you can solve with the data
3. Do analysis
4. Present the results



A BETTER APPROACH

1. Start with the **End User**
2. **Brainstorm** ideas based on what problems the end user is facing and possible ways to help address their problem
3. Prototype some of these ideas to create a **Minimum Viable Product (MVP)**
4. **Iterate**

THINGS TO REMEMBER

1. Start w/ End User

Human-centered design and empathy

Focus on the end user and goal instead of on modeling

2. Brainstorm

Brainstorm ideas before you even touch the data!

Keep your time - resources - scope constraints in mind

3. MVP and Iterate

Always start simple

Create a simple, working solution before moving forward

Ask for feedback

Minimum Viable Product (MVP)

METIS

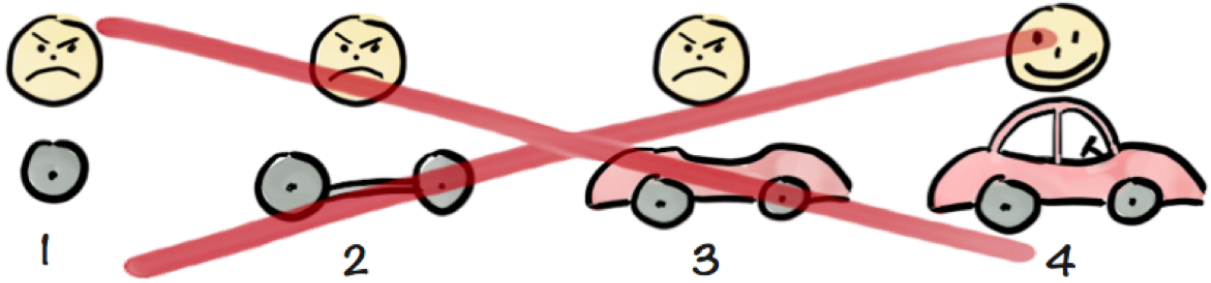
WHAT MAKES A GOOD MVP?

Minimum: Could something simpler / quicker accomplish a similar outcome?

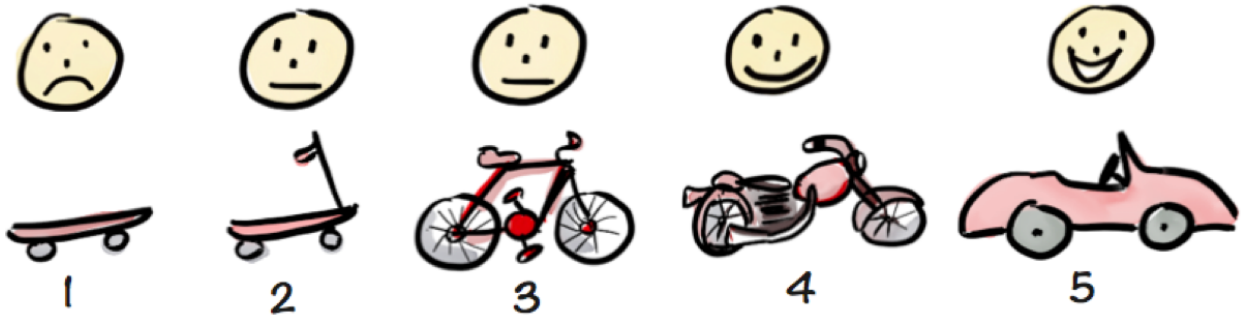
Viable: Does the MVP work (more details on next slide)?

Product: Does the MVP address a need of the audience / add value?

Not like this....



Like this!



Henrik Kniberg

PRINCIPLES OF GOOD DESIGN

- **Define your Minimum Viable Product** before beginning to work on anything.
- Build each step (data cleaning, exploration, plotting) like you're **planning to iterate it**.
  - Comments and documentation
  - Clear thought process
  - Functional > Perfect
- Use later steps (like building a model) to **inform decisions on earlier steps** (like data scraping)

GROUP EXERCISE

Break out into your project groups.

Discussion points:

- What have you learned from this presentation?
- What will you do differently as a group today?