

# Enable object serialization

- Campaign-scale software will need to turn a description of your simulation into bytes, either to document how it was run or to be able to launch multiple
  - if we're using your CLI to launch, then your input files might work
  - if we're using some object component of yours, then we need it to be serializable
- Consider two types of objects:
  - Data objects: The data you're working with. Each object has a predetermined pattern, and there may be many instances of them.
  - Simulation objects: The objects that describe your simulation. These are varied in contents, but there are fewer of them.
- Both of these should be serializable

# Serialization is hard

- Duplication of data: if you have a hierarchical structure, how can you avoid saving duplicate objects?
  - Store as reference; requires unique ID!
- When you recreate an object, how “equal” to the old object is it?
  - Does it satisfy `new == old`?
  - What about `container.new is container.old`?
- If you create equivalent (not same in memory), do you save duplicates?

