

The learning problem - Outline

- Example of machine learning
- Components of learning
- A simple model
- Types of learning
- Puzzle

Basic premise of learning

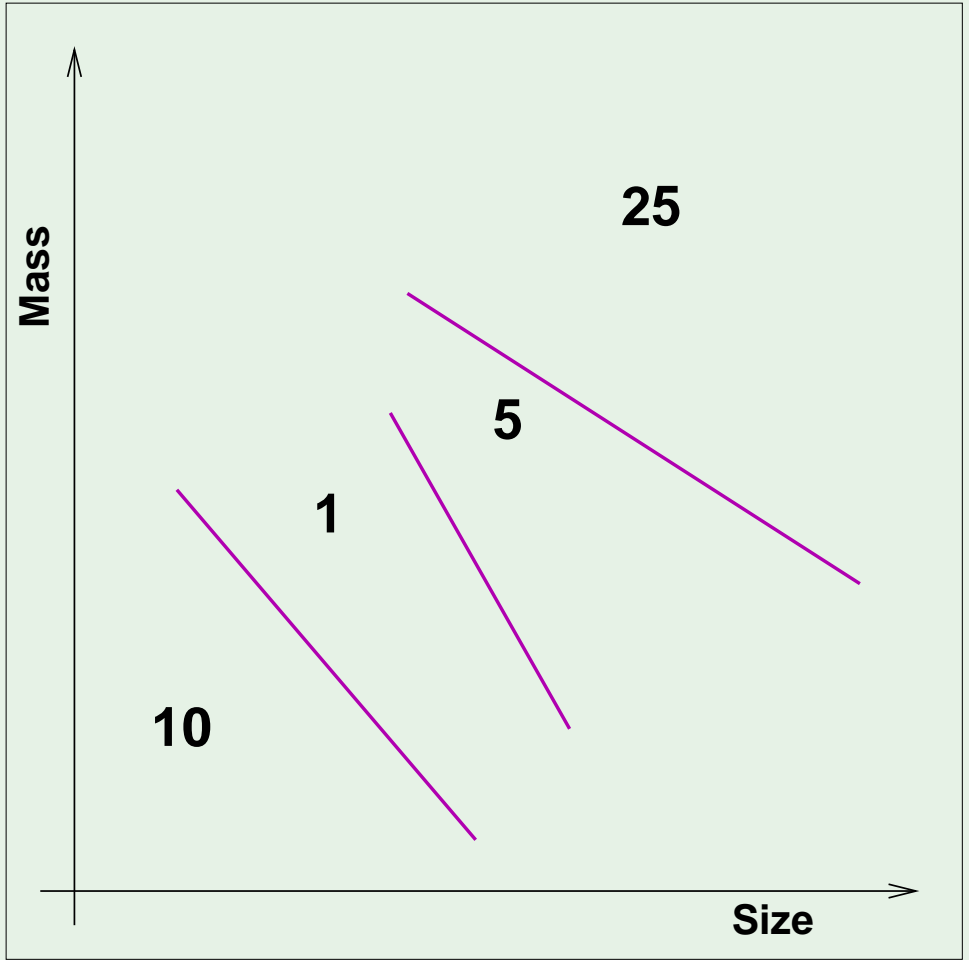
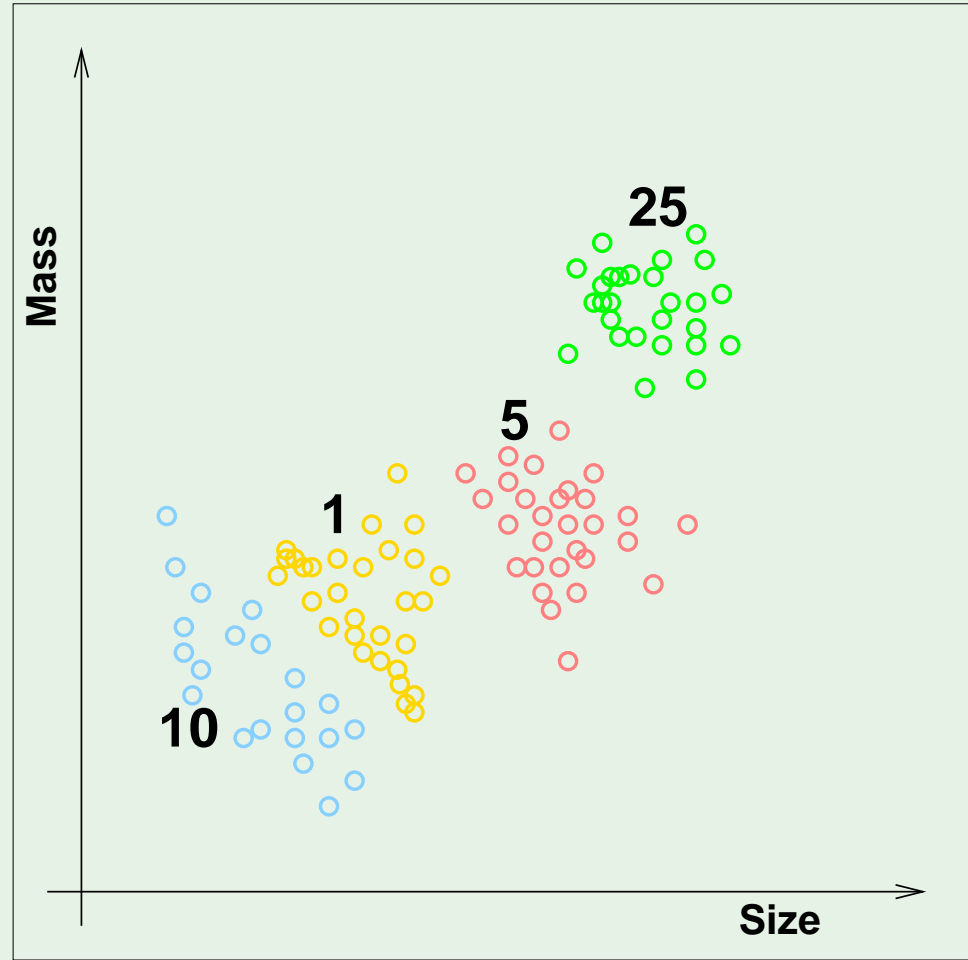
“using a set of observations to uncover an underlying process”

broad premise \implies many variations

- Supervised Learning
- Unsupervised Learning
- Reinforcement Learning

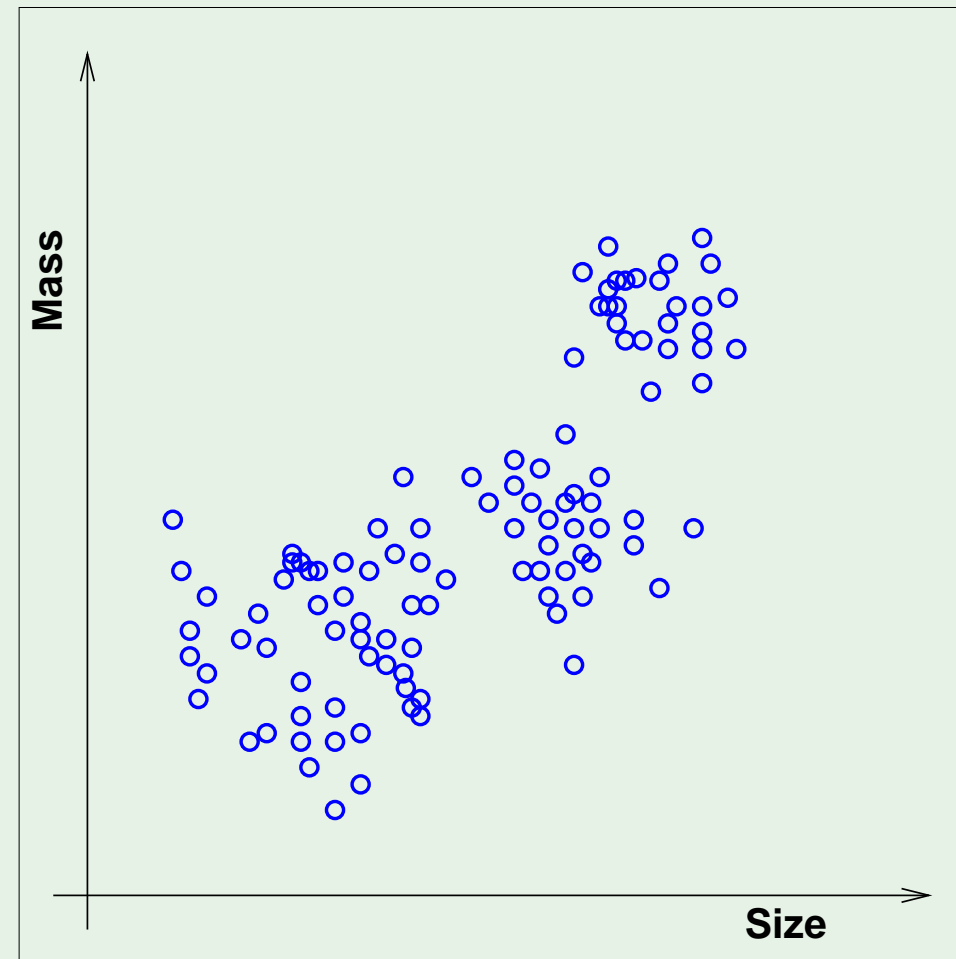
Supervised learning

Example from vending machines – coin recognition



Unsupervised learning

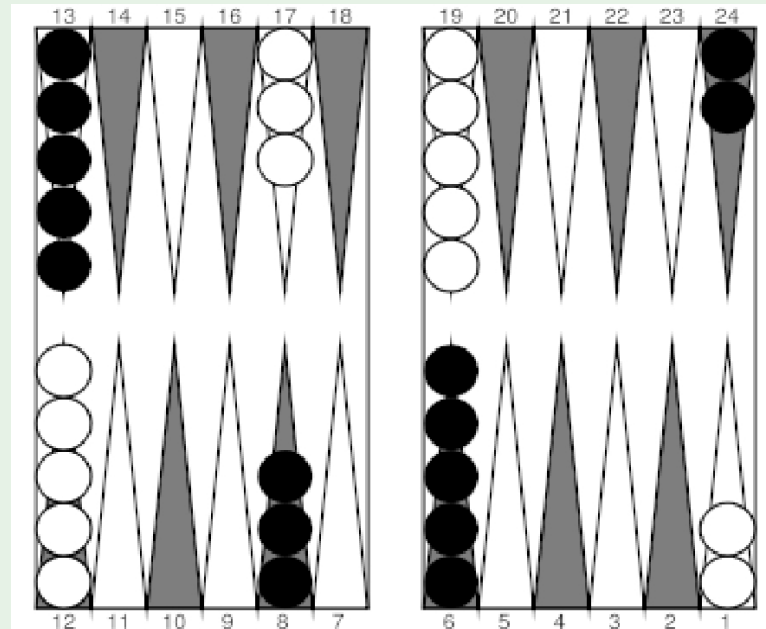
Instead of (input, correct output), we get (input, ?)



Reinforcement learning

Instead of (input, correct output),

we get (input, *some* output, grade for this output)



The world champion was a neural network!