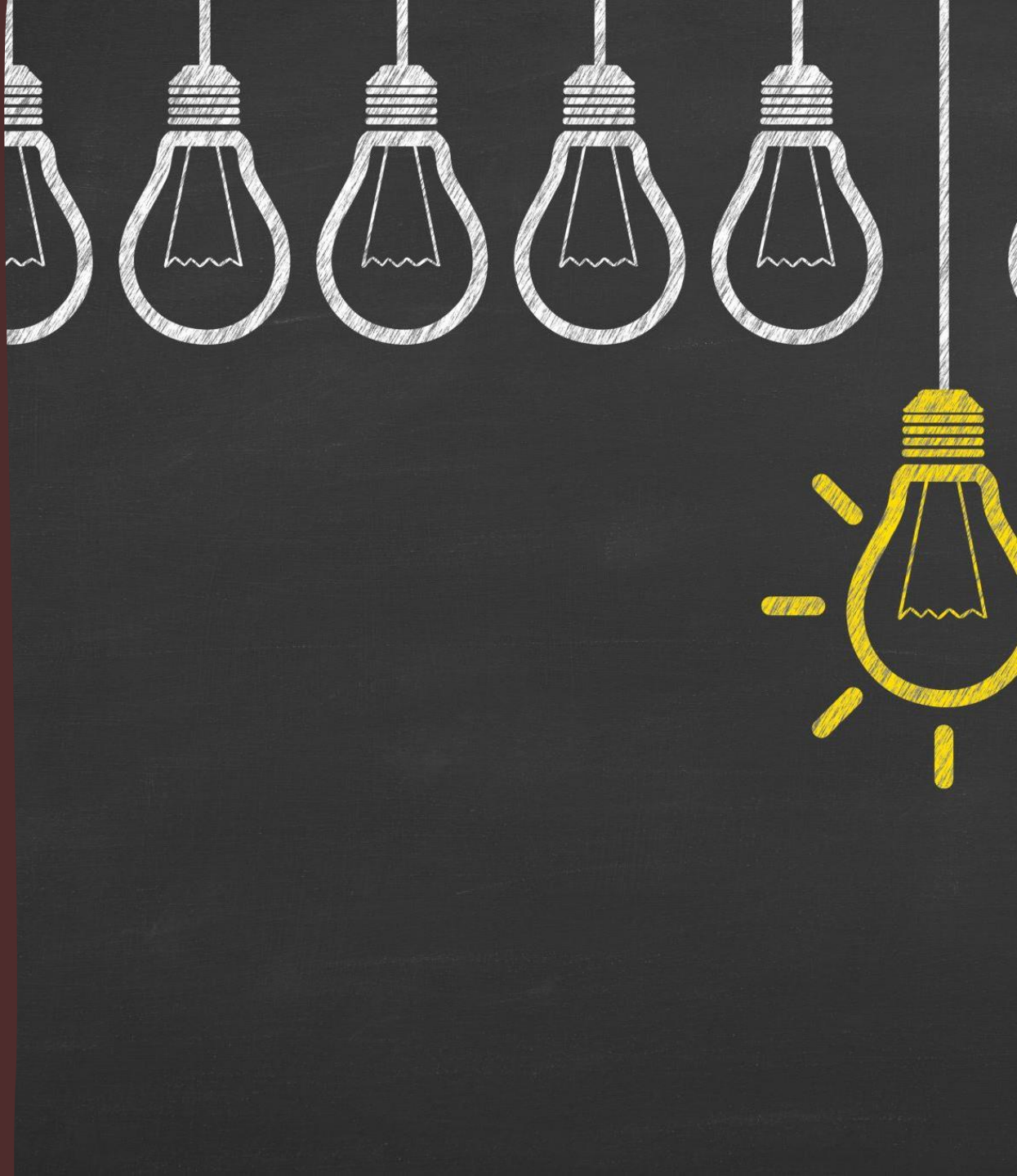
Computational Thinking

Pattern Recognition



Pattern Recognition

- Looks for common or repeating patterns in
  - Data
  - Functionality

Patterns in Data

1

Looks for data which is common among several things

2

Factors this out into a new piece of information which individual things can reference

Example – A Cheque

- NAME OF PAYEE

DATE

AMOUNT

ACCOUNT NUMBER

Example – A Bank Deposit

DATE

AMOUNT

ACCOUNT

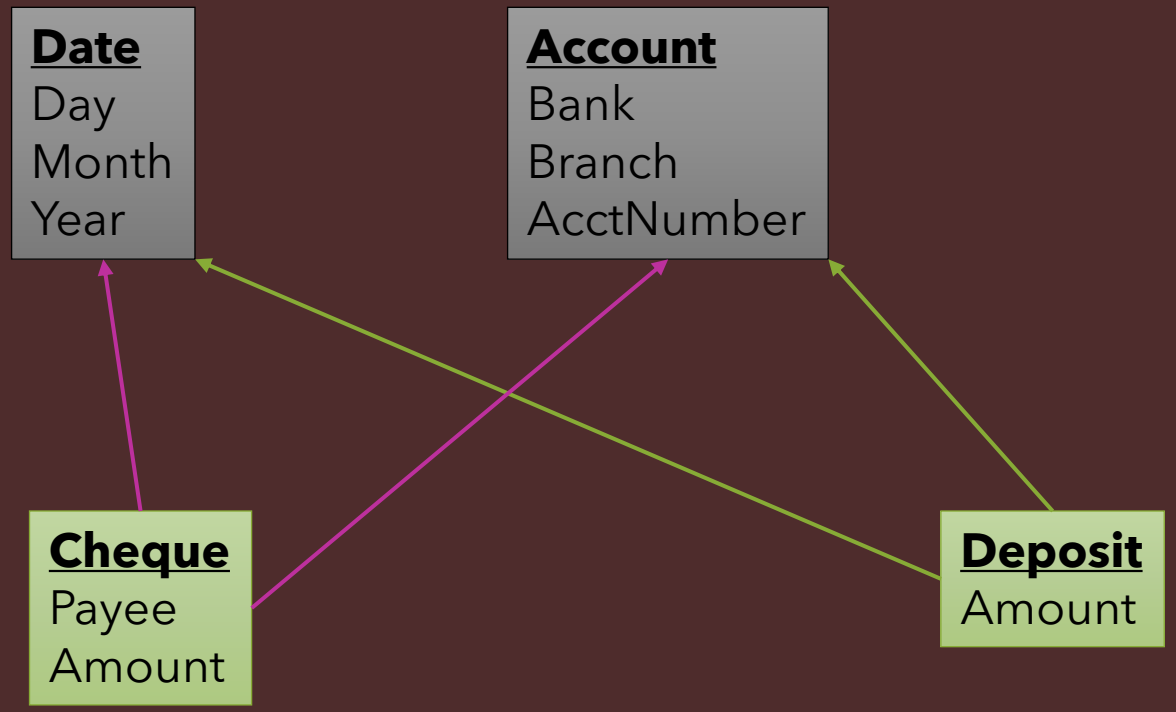
What is Common?

DATE – A COMBINATION OF A DAY, MONTH, AND YEAR

AMOUNT – A SIMPLE NUMBER

ACCOUNT – A BANK IDENTIFIER, BRANCH ID, AND ACCOUNT NUMBER

Factor out Complex Common Parts



Patterns in Functionality

Look for the same operations performed in different places

Factor out the repeating operations

Example – Weather & Expenses

You want to find the hottest day from a set of daily temperatures

You want to find your most expensive restaurant meal from a list of bills

The Commonality

Both these processes require that you find the maximum of a series of values

Factor out the Commonality