Abstract Data Types and Interfaces

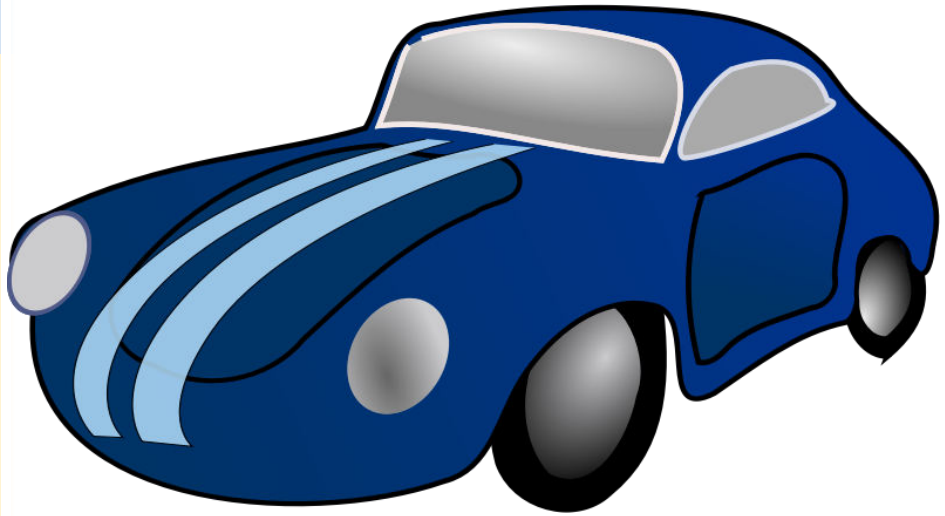
By the end of this video you will be able to…

- Explain the idea of abstraction and why it is important
- Give an example of abstraction in the real world and in Java
- Describe the difference between an Abstract Data Type (ADT) and a Data Structure

Key CS Idea: Abstraction

Hiding irrelevant details to focus on the essential features needed to understand and use a thing

Abstraction example: car brakes

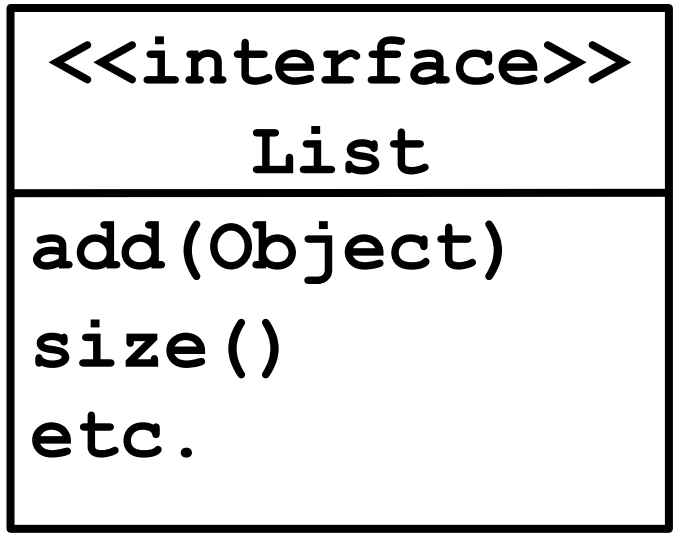


Behavior specified

Abstraction Barrier
sets the rules of interaction

Implementation specified

Data Abstraction

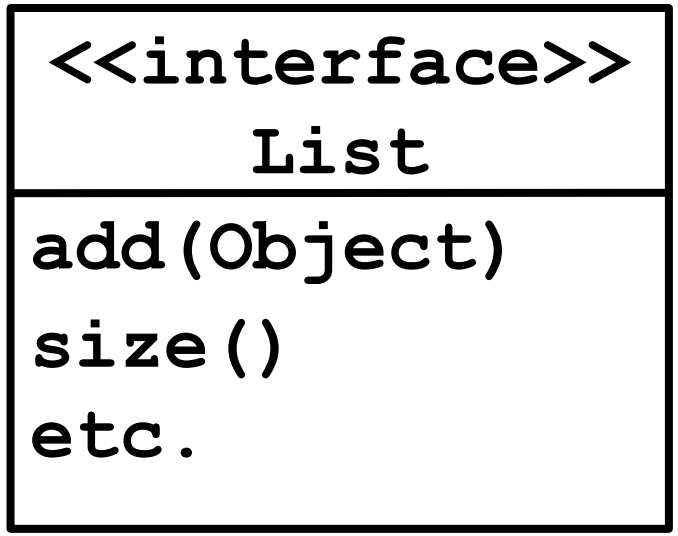


Abstract Data Type (ADT)
No implementation

Abstraction Barrier
sets the rules of interaction

Data Structure
Specific implementation

Two sides of abstraction



User of libraries

Abstraction Barrier
sets the rules of interaction

Library developer