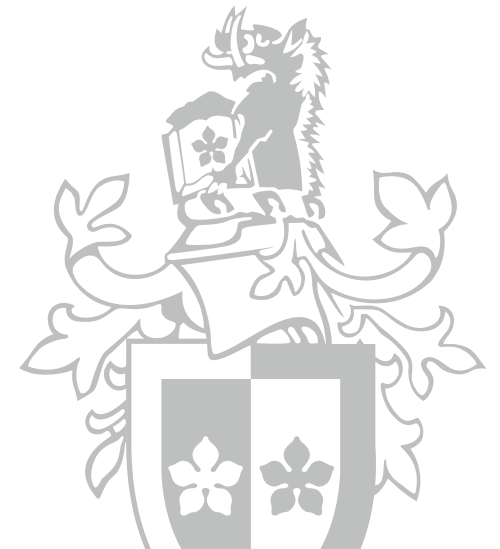


Object Collaborations

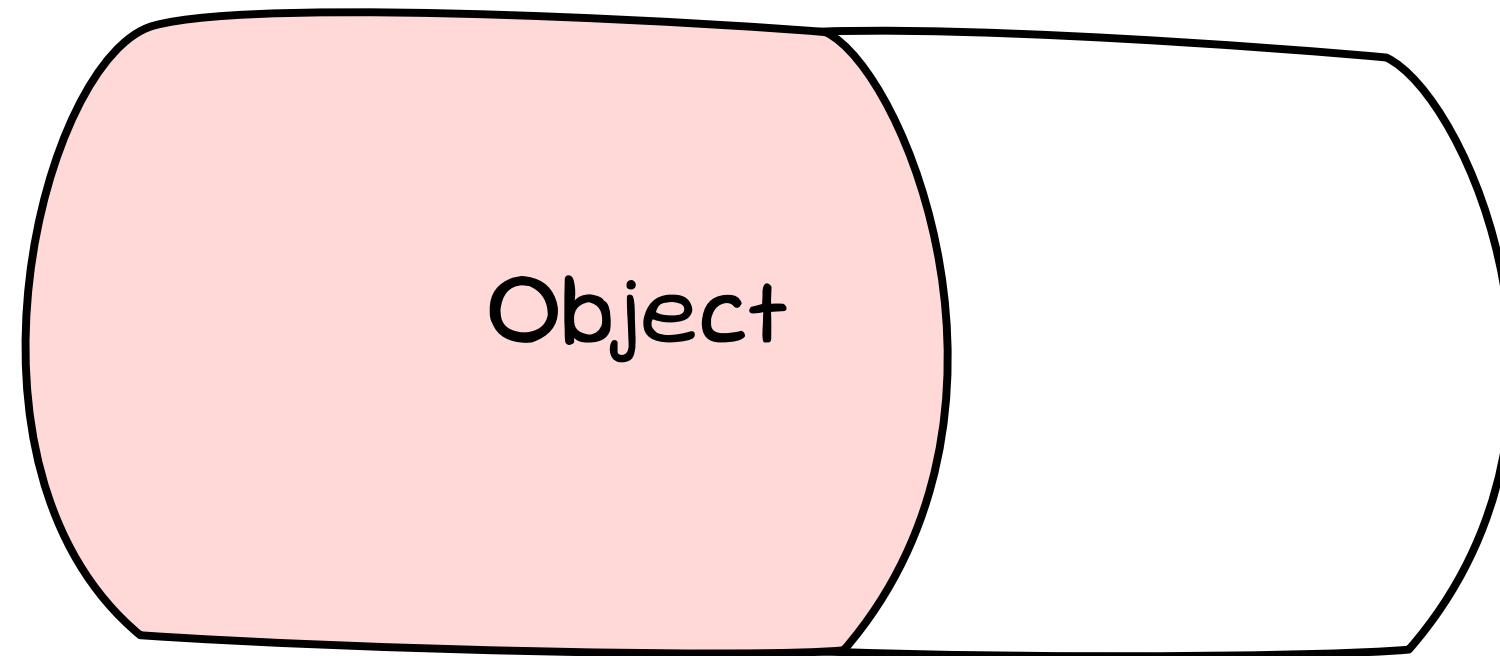
Charlotte Pierce



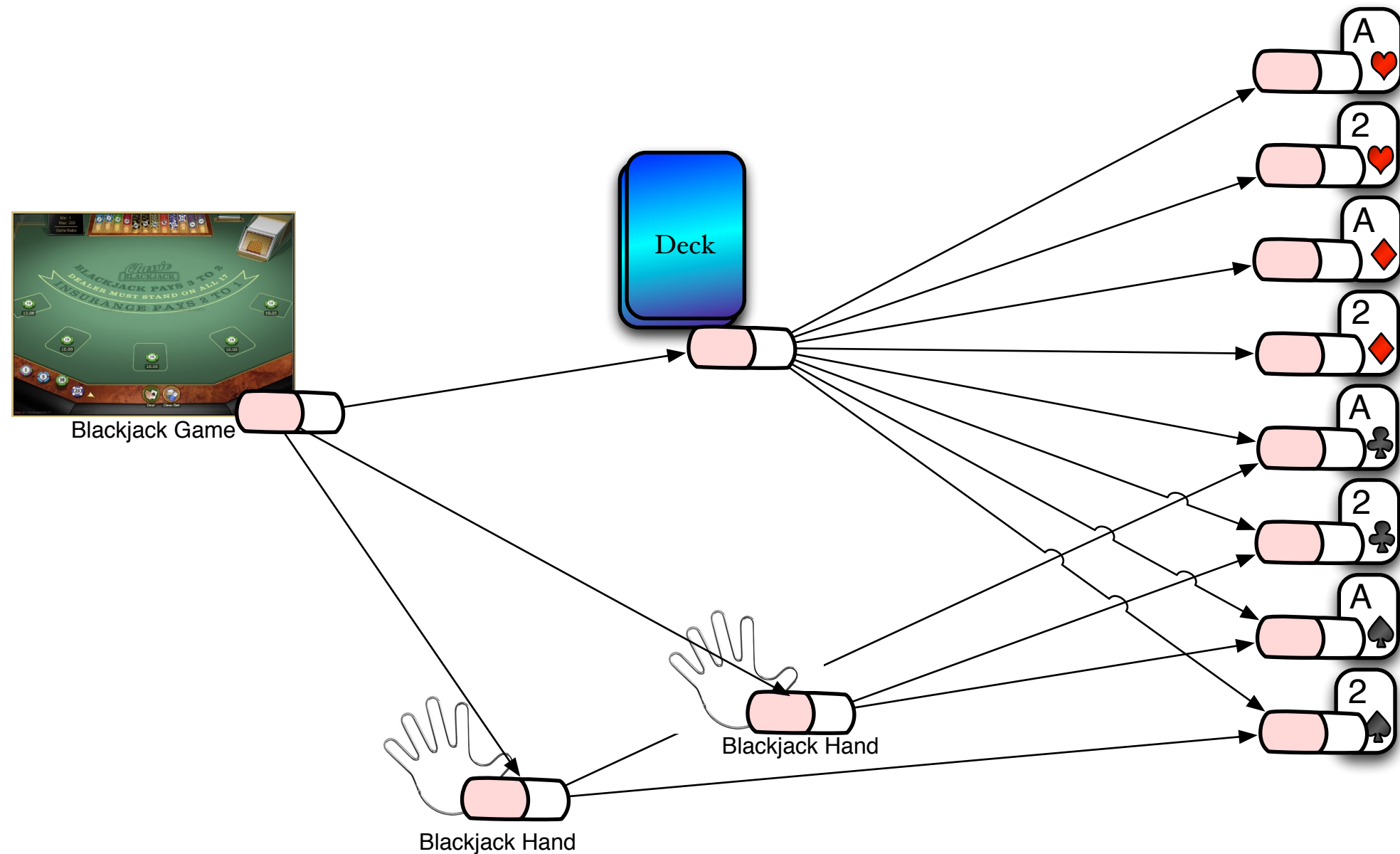
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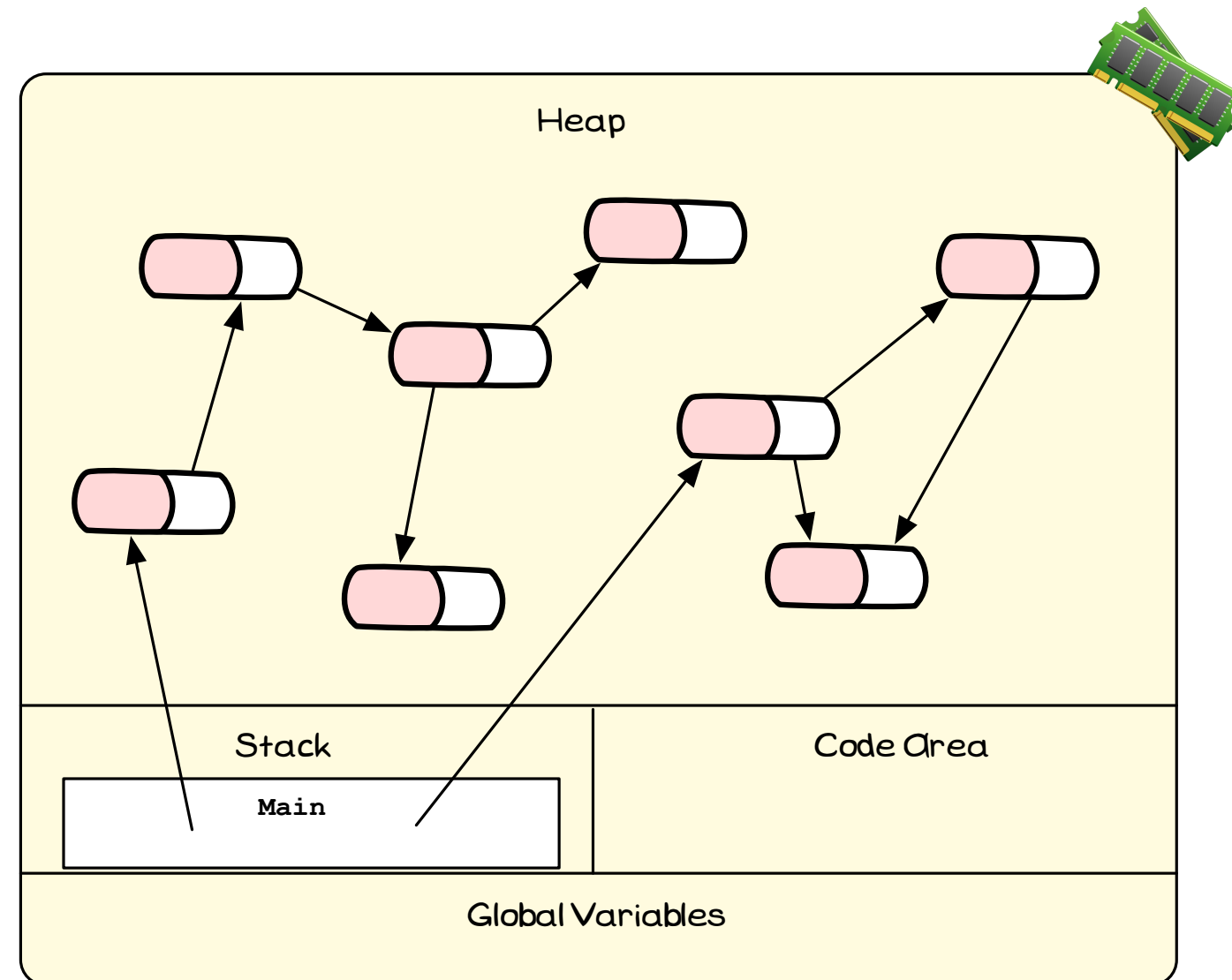
Object oriented programs are
designed around the idea of objects



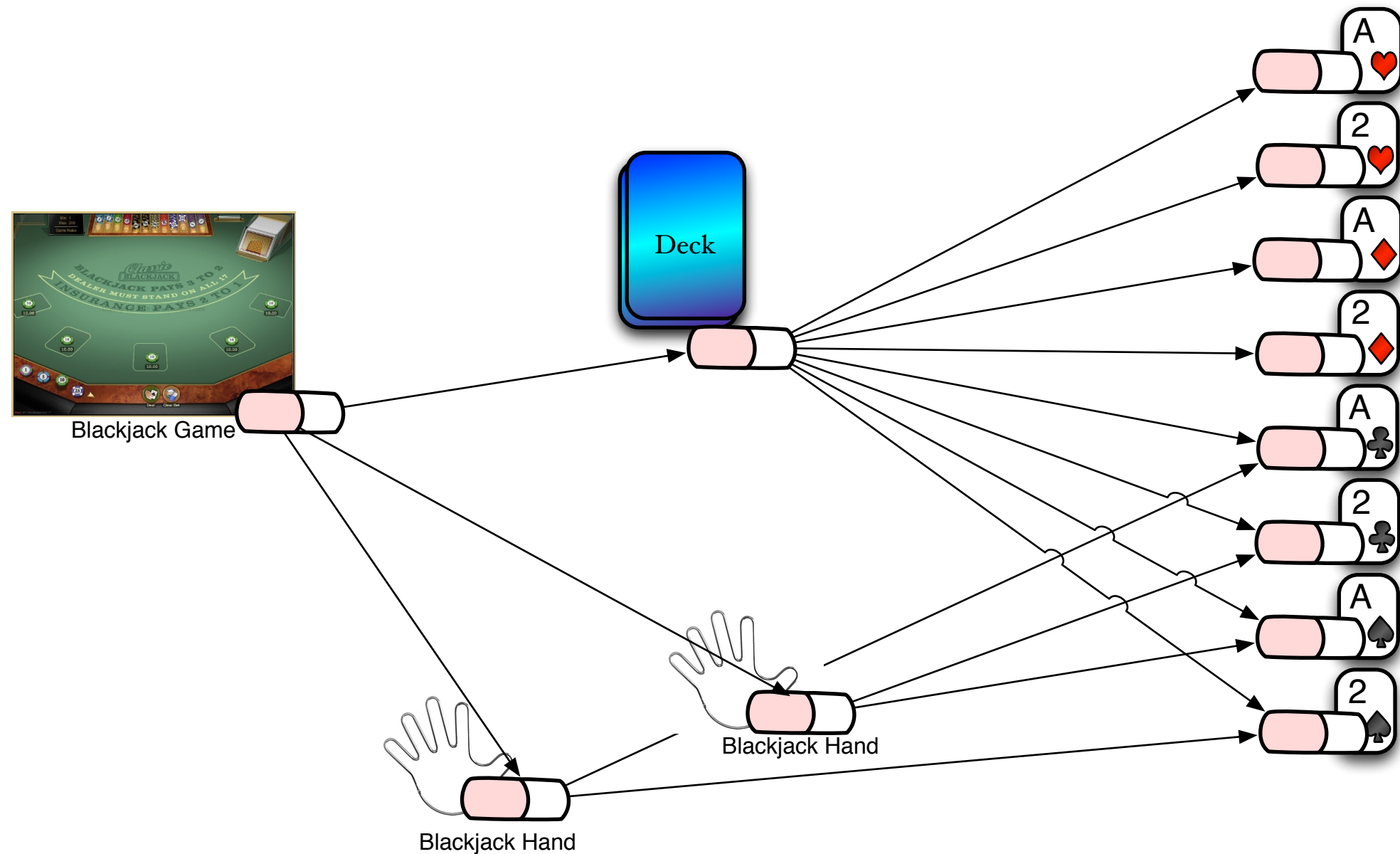
Developers use objects to create useful components for use in their software



Object oriented programs usually contain many objects of different kinds



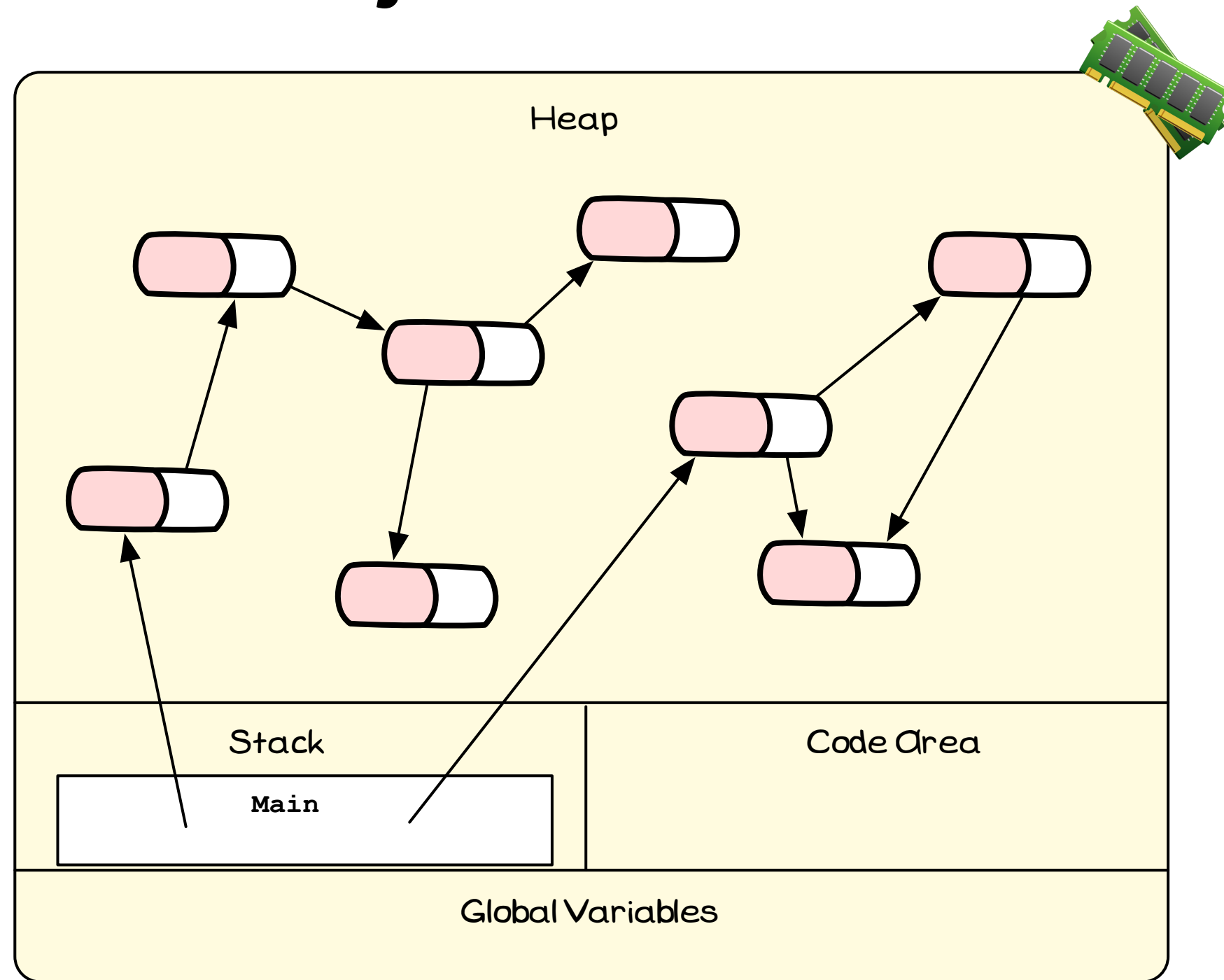
To work effectively objects will need to interact to achieve program goals



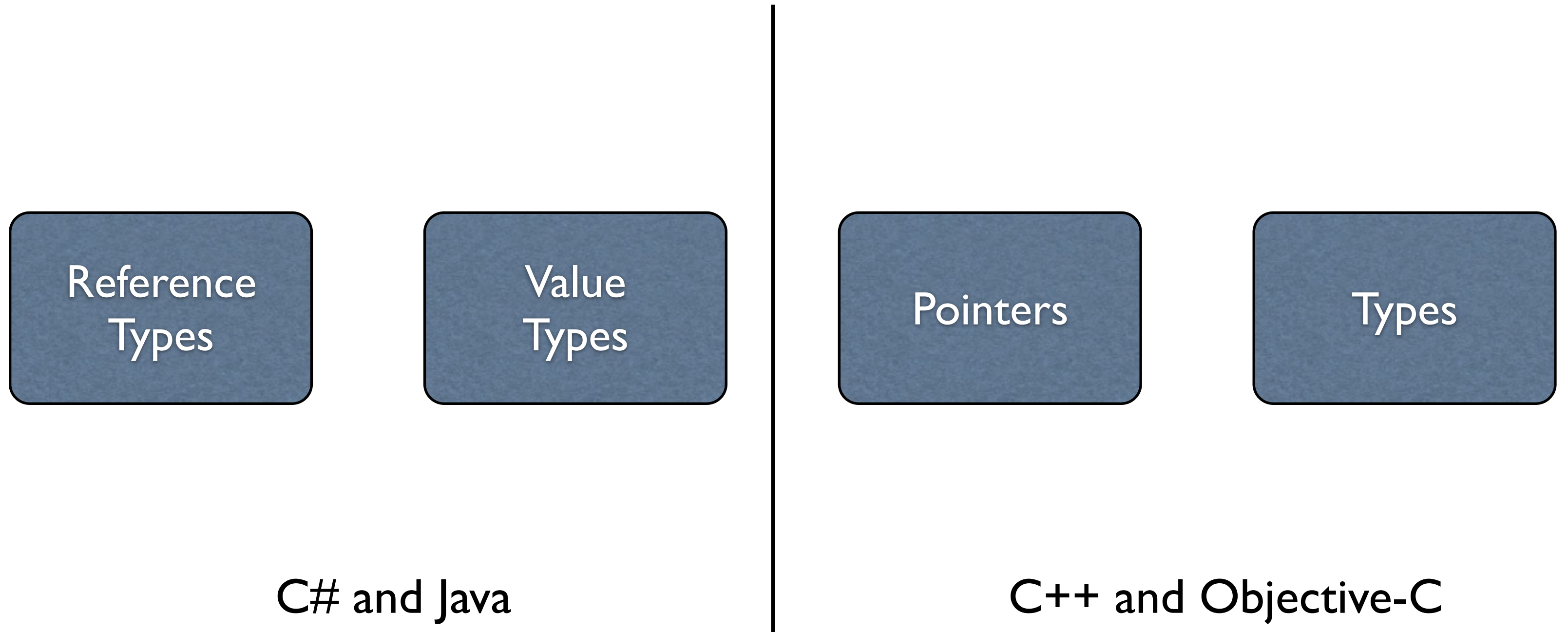
Use object relationships to
enhance the power of your object
oriented programs

See how pointers/references
allows the creation of flexible
networks of objects

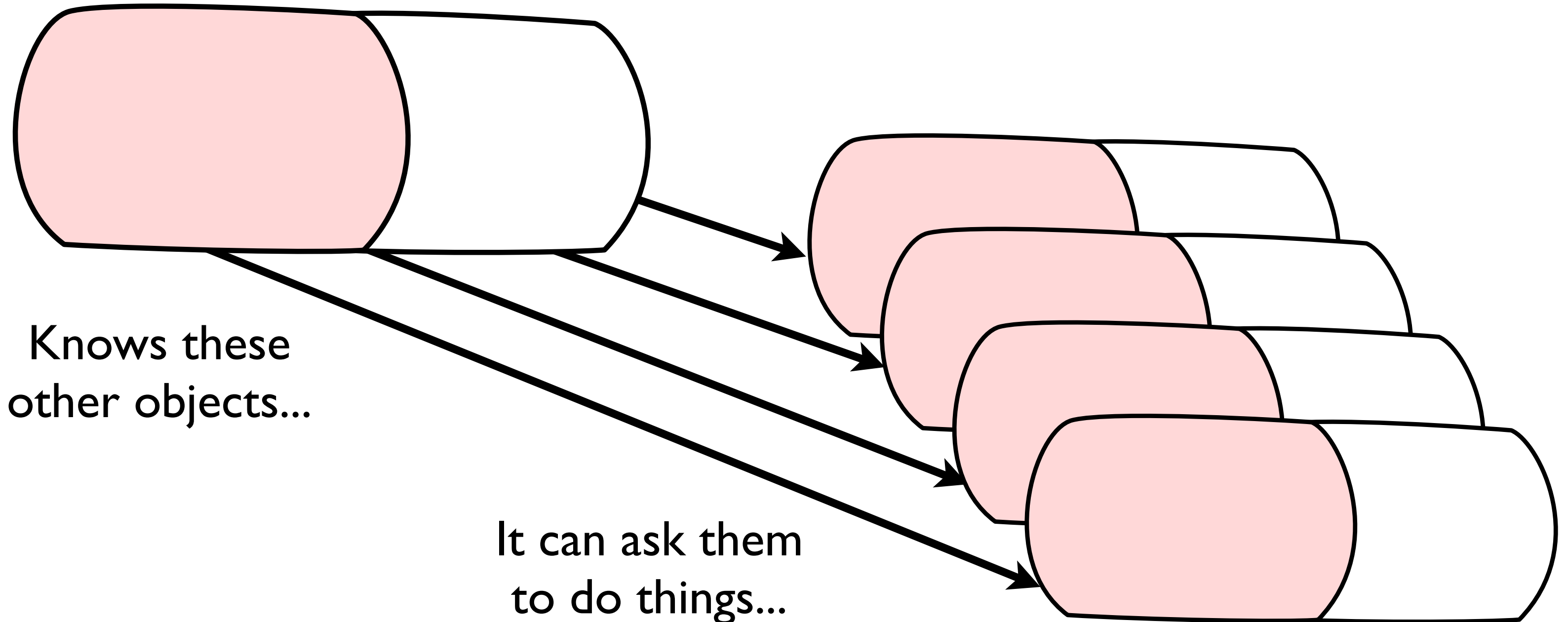
At runtime objects exist on the heap



Languages use some form of pointer to refer to objects...



Pointers allow flexible relationships between objects



Activity - Design a Deck class

Design interactions between the
objects in your solution

There are three main kinds of relationships

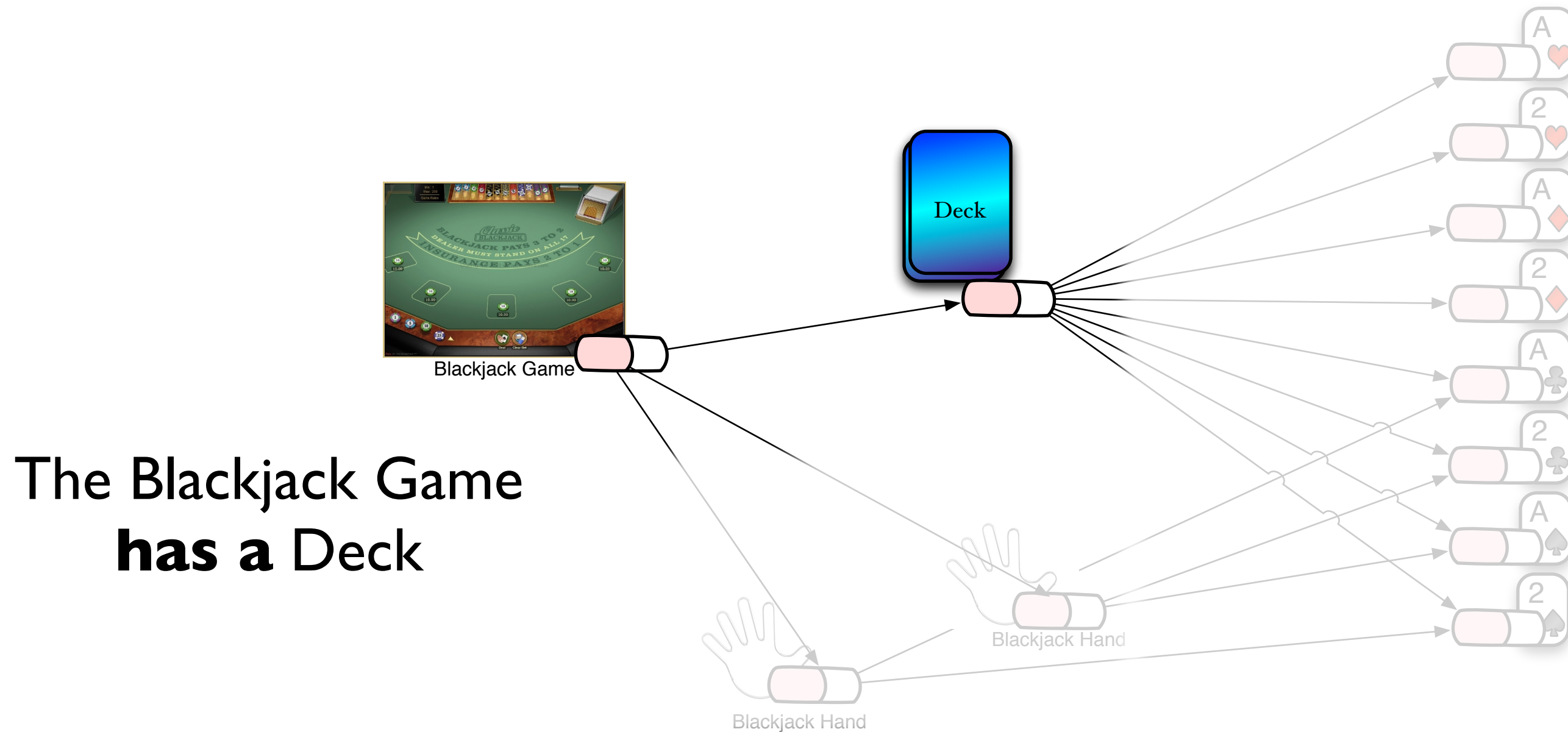


Association

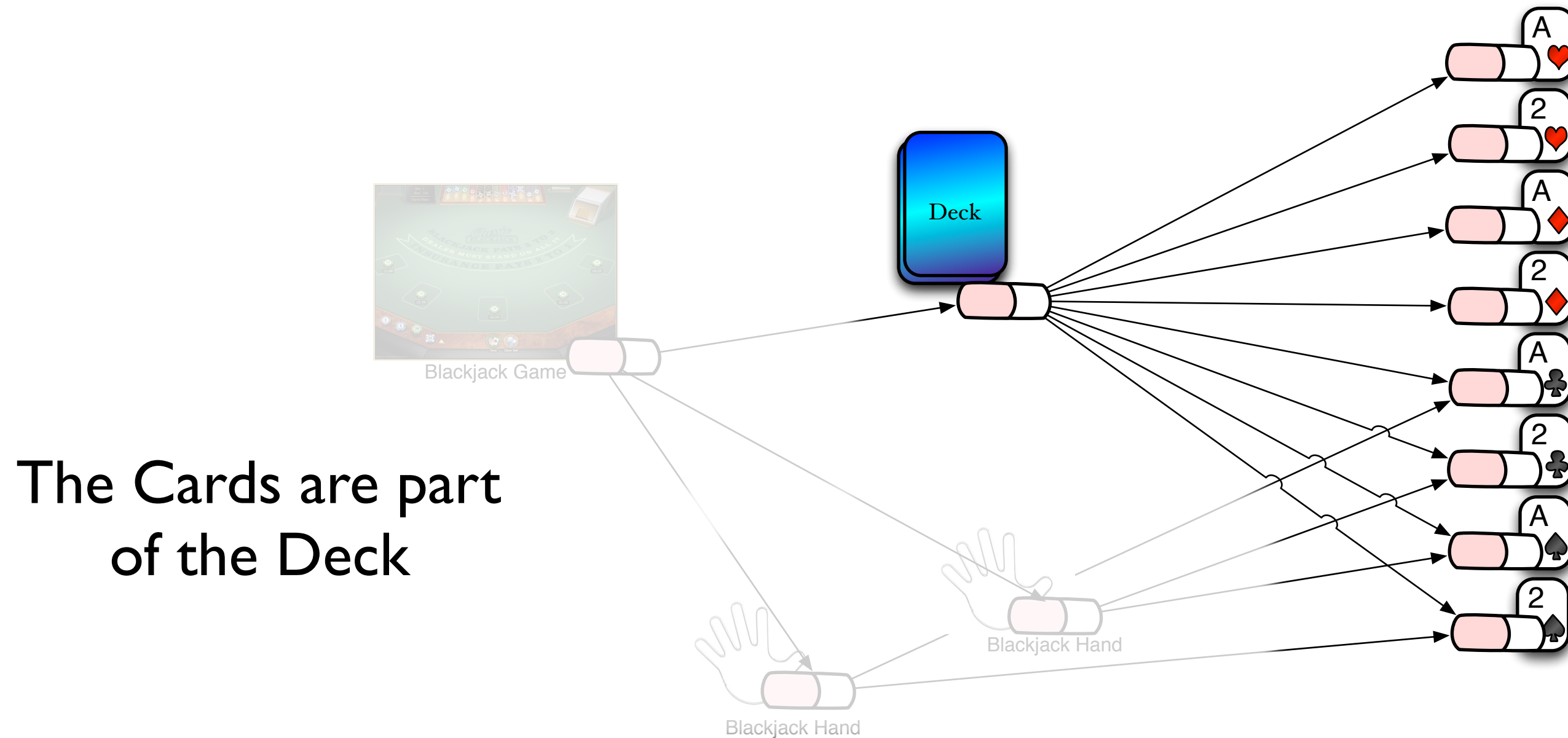
Aggregation

Dependence

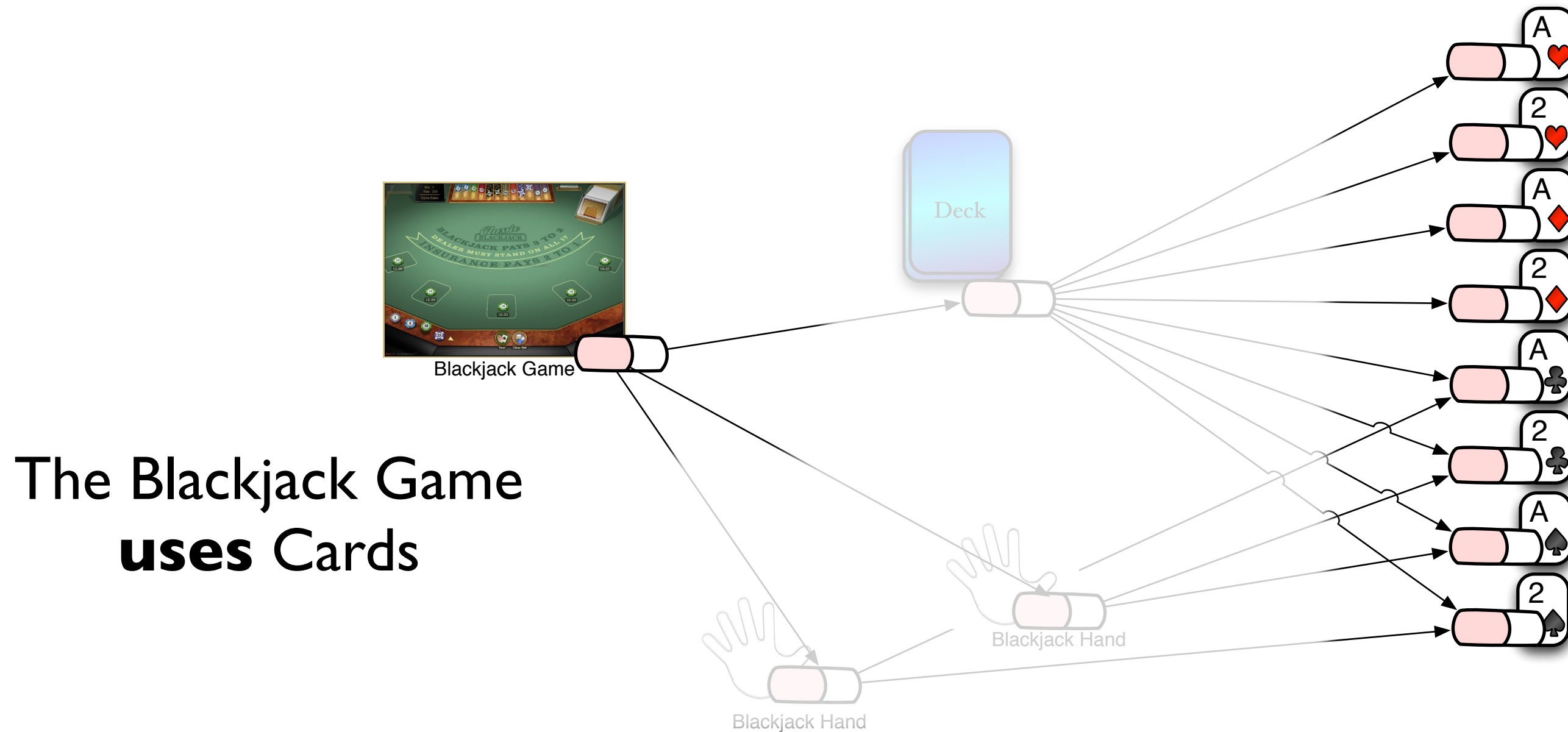
Use association for "has-a" kind relationship



Use "aggregation" for whole-part or container relationships



Use dependency for temporary "uses" style relationships



Activity - Design Blackjack

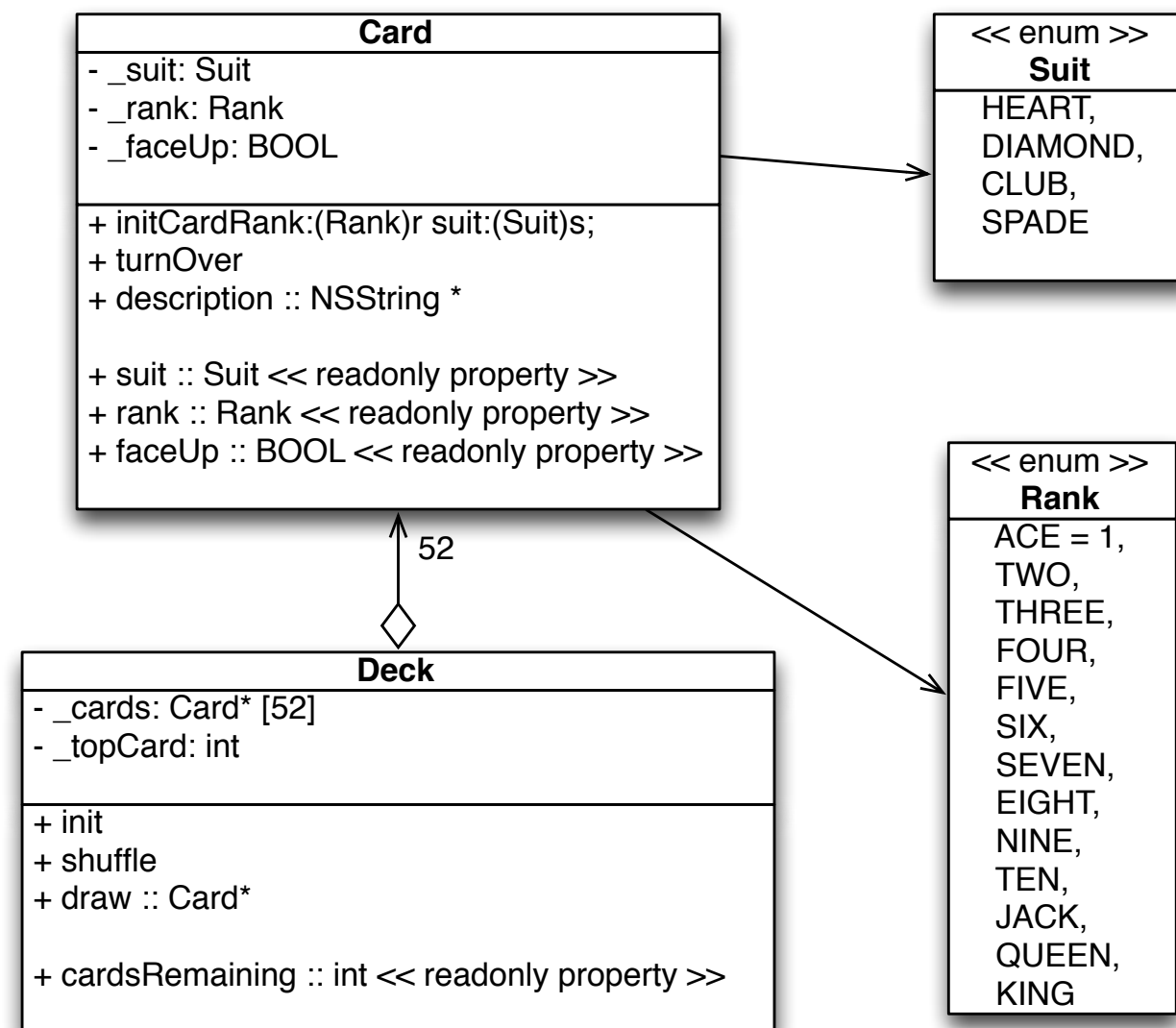
You can use BlackjackGame, Hand, Deck, and Card classes.

What relationships exist between these classes?

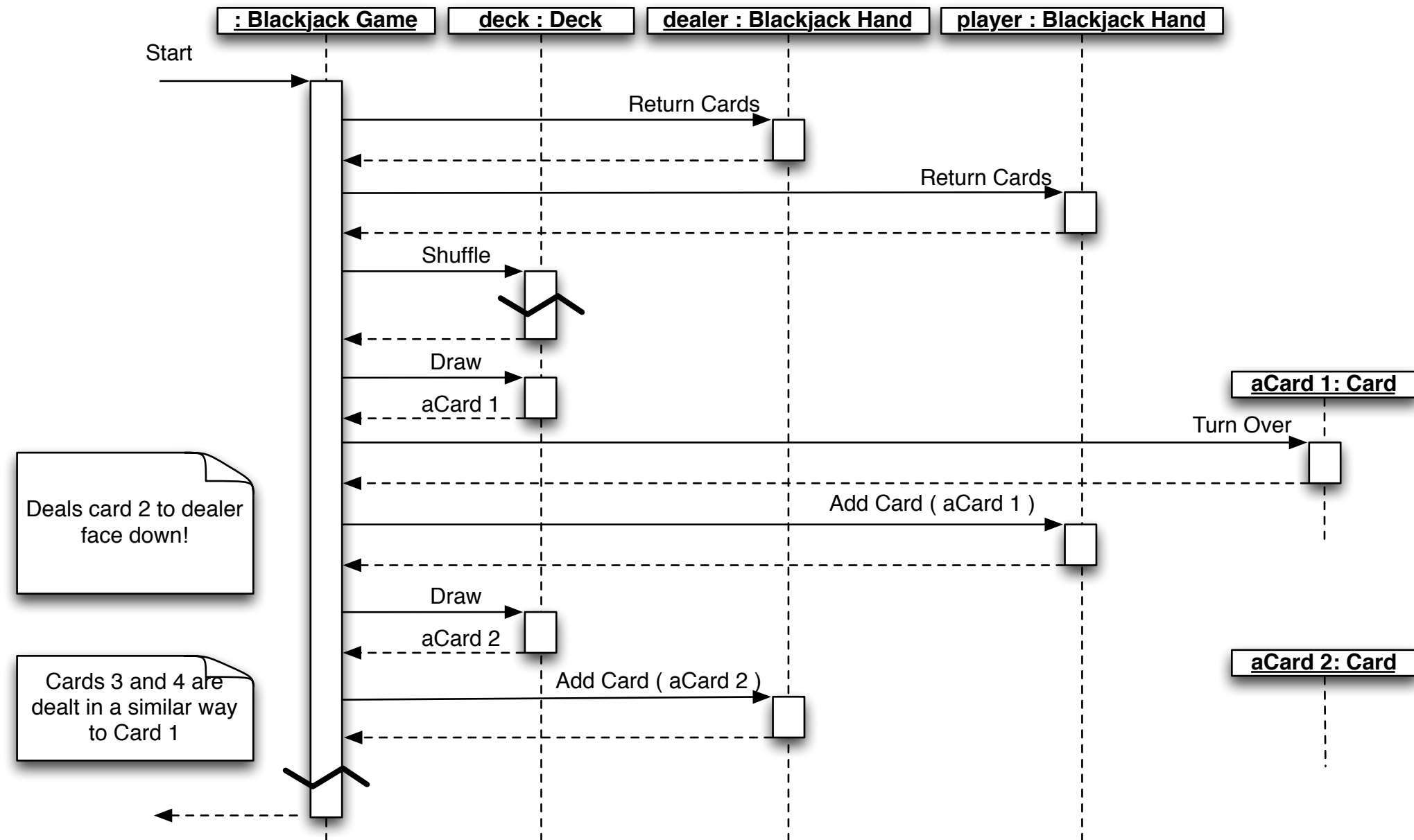
What does each class need to know and do?

Communicate your ideas using the
Unified Modelling Language

Communicate the static structure of your program using a class diagram



Communicate interactions using a sequence diagram



Quick quiz!

How can you communicate:

1. the classes in your Blackjack program
2. the interactions between these classes
3. the steps used to perform a complex operation (eg., shuffling cards)

Demo - Relationships Between Objects in a Game

Will you be able to setup and use
object interactions in your
programs?

To achieve great results object
oriented programs need many
objects

Use object relationships to enhance
the power of your object oriented
programs

Achieve your program goals
through object communication

Start your objects communicating!