Introducing Objects and Object Oriented Programming

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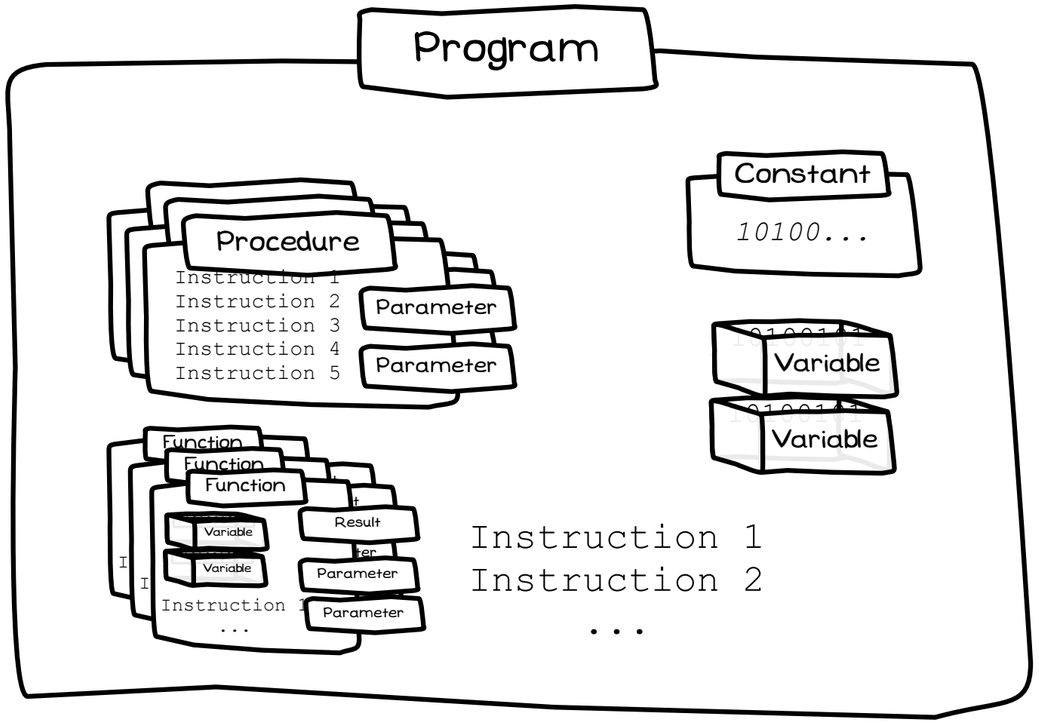
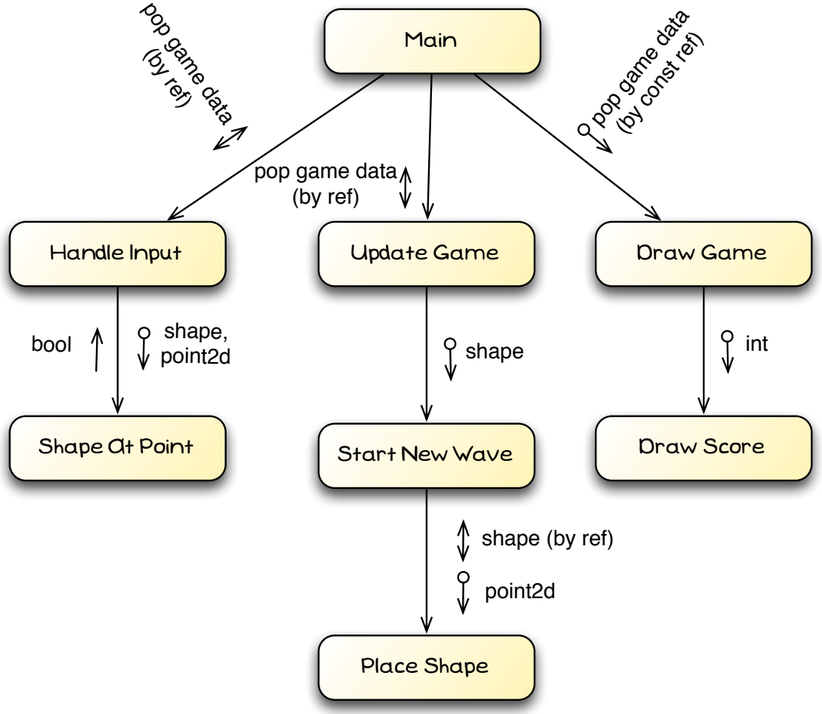
Software Development is about defining instructions for computers

Code

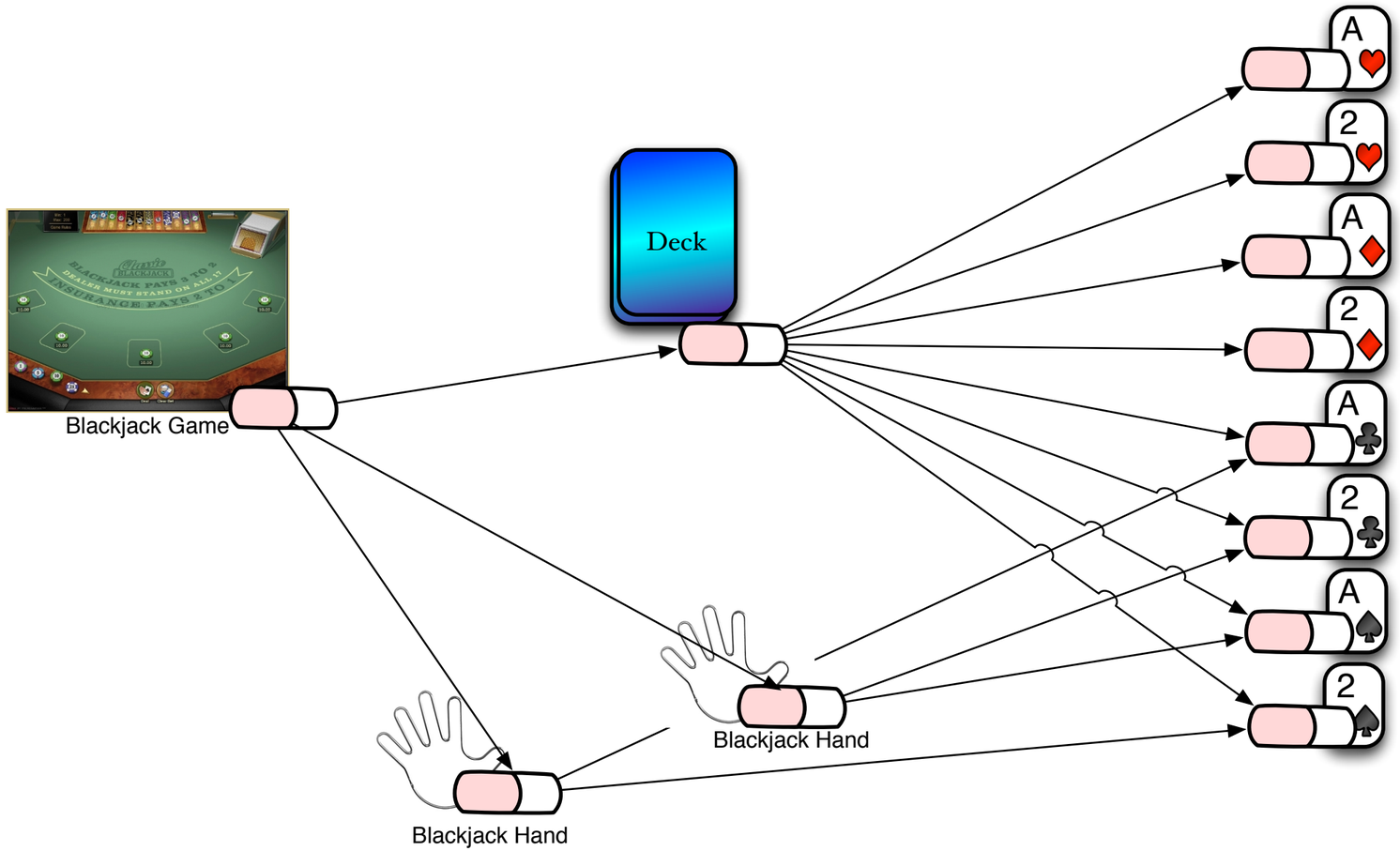
Developers create programs using a range of artefacts to manage complexity



Procedural programming uses functional decomposition, but has limits as size grows



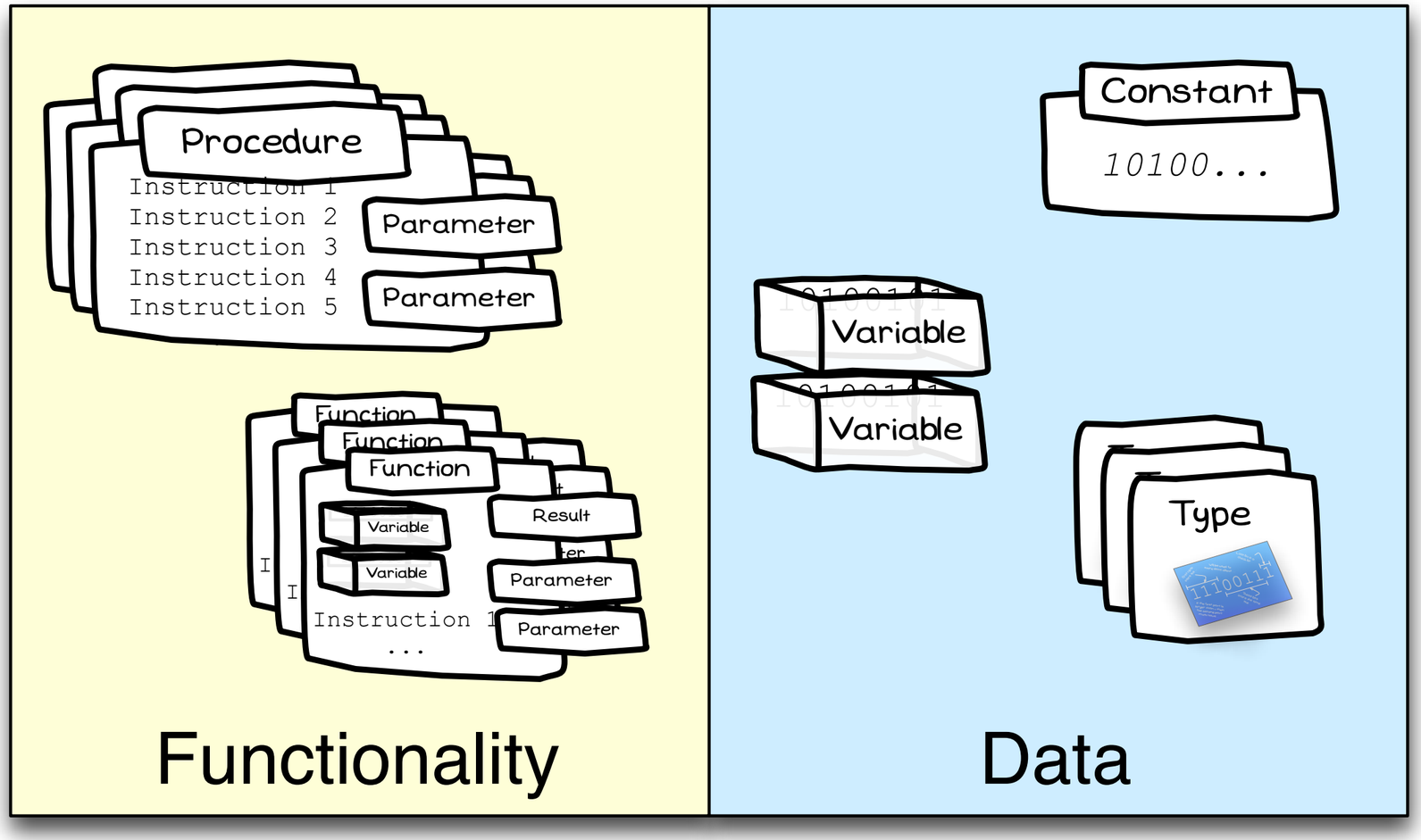
Object oriented programming offers means of managing complexity for larger software



Change your approach to software design to master OO programming

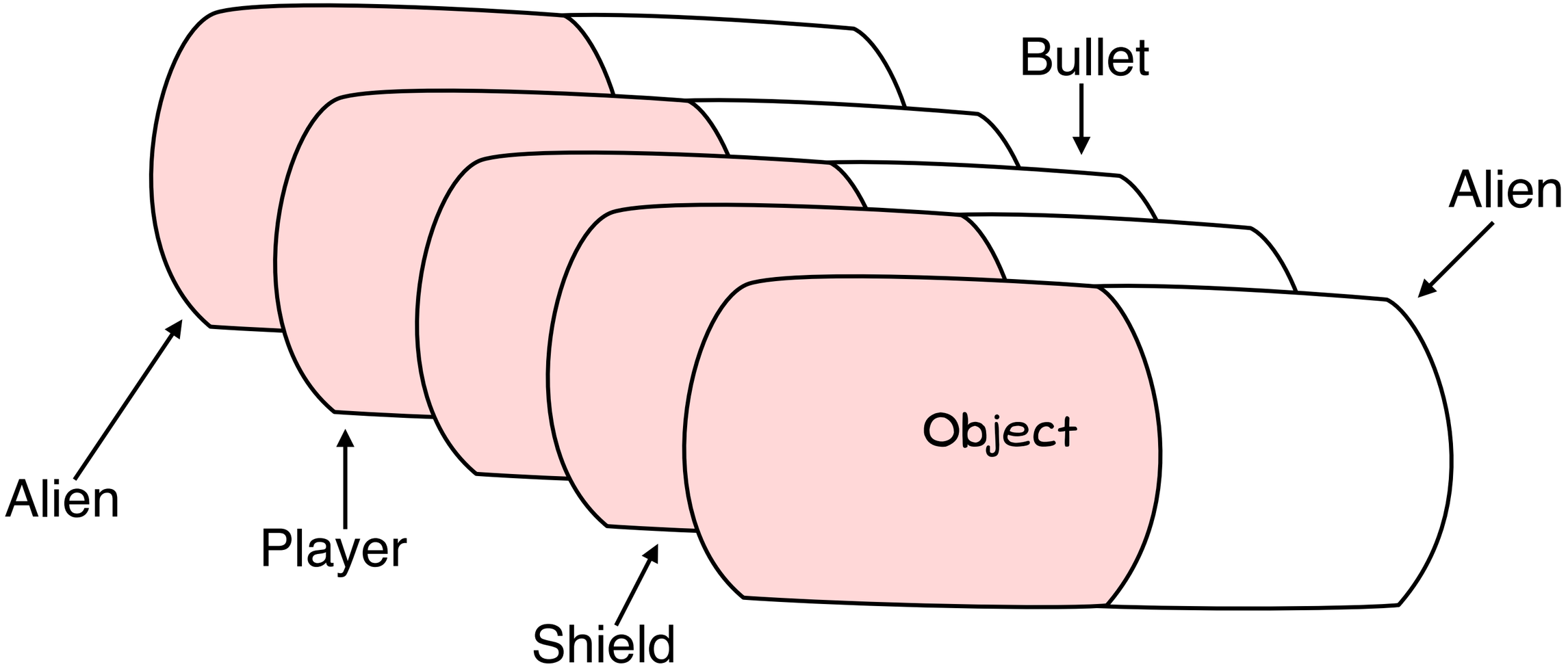
See software as involving collaborating entities (objects) that know and do

Program procedurally by organising code into separate artefacts for data and functionality

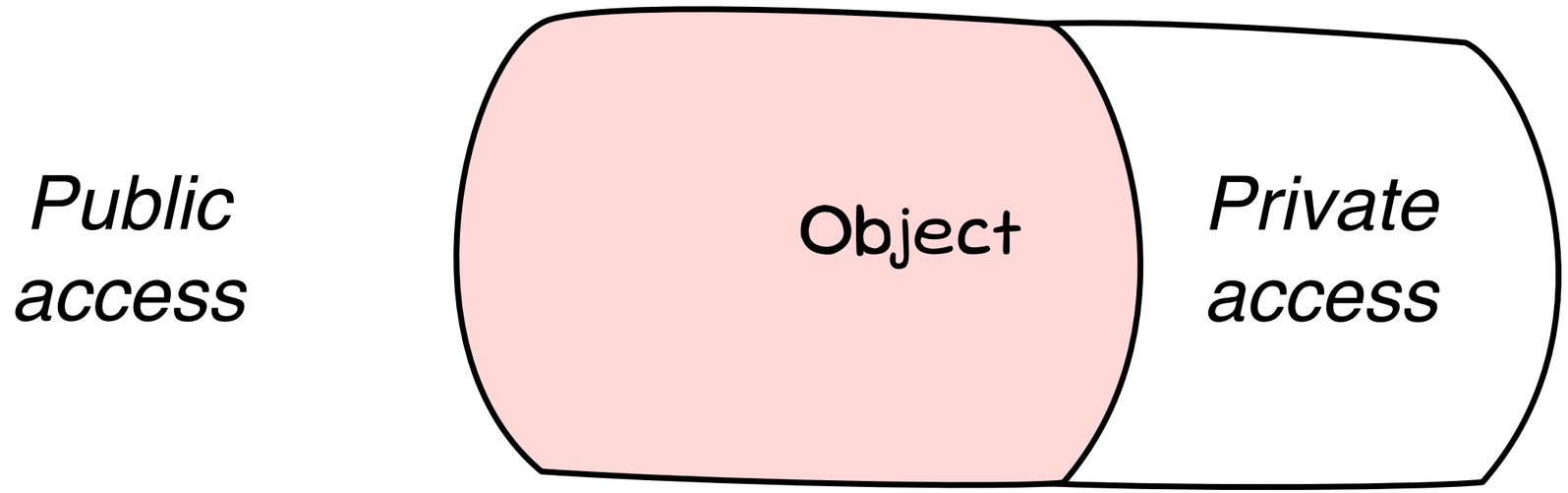


With Objects, you create entities that encapsulate **both** functionality and data — they know and can do things

Build programs from many interacting objects, each playing a role in the overall solution



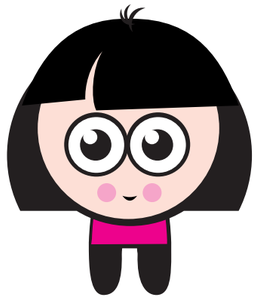
Picture each object as a capsule with an "inside" and "outside" — not everything is accessible



Things the object knows and can do can be hidden within the object.

Design programs by breaking problems down into objects

Use abstraction to classify the different kinds of roles objects will play in your software



classify

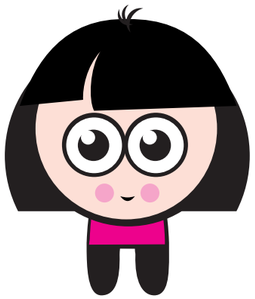
Player

classify

Alien

Use Abstraction (Classification) to define object classes

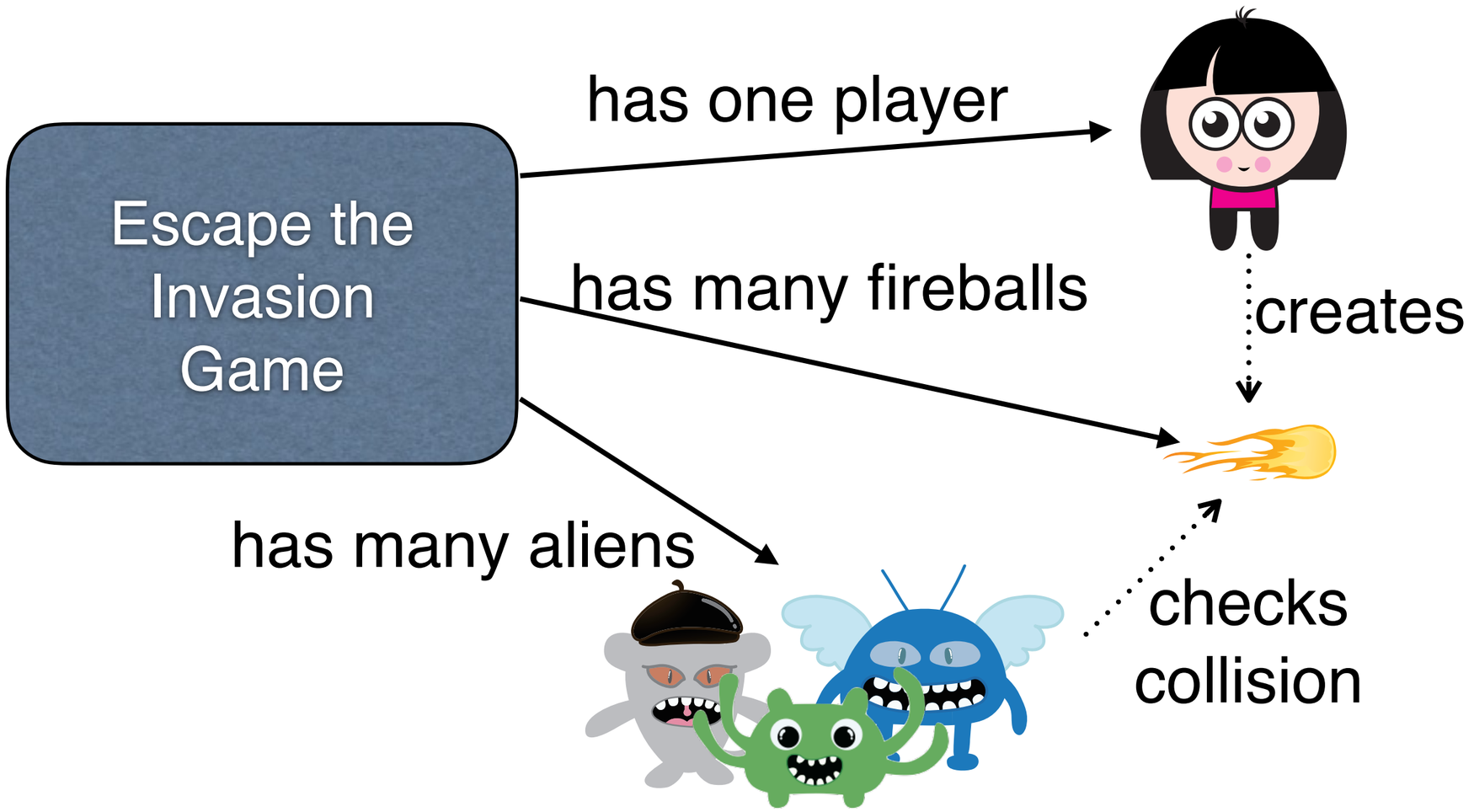
Record what each object for a role will know and be able to do



classify

Player
Knows its location Knows its health Knows it heading
Can move Can be hit by Aliens Can fire bullets …

Indicate other roles that the objects will need to collaborate with to achieve its goals



Implement your designs using an object oriented programming language