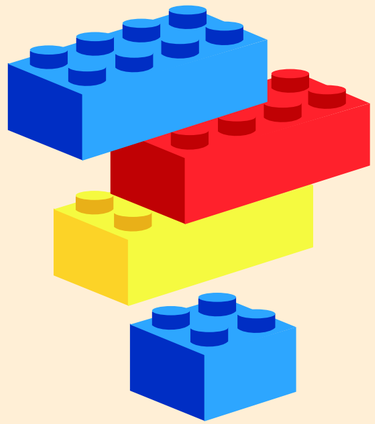
ZERO TO KNOWING

OBJECT ORIENTATED PROGRAMMING

In Python 2023

What is Object Oriented Programing

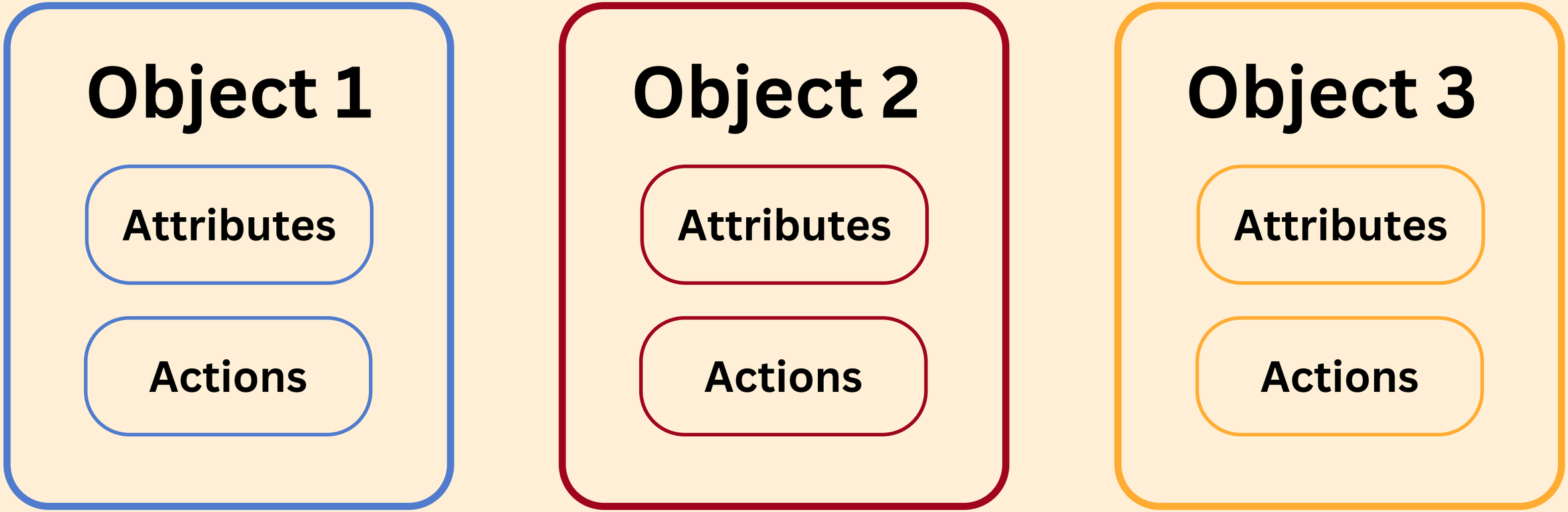
It's like building with LEGO blocks



- It's a way of organizing and writing code that makes it **easier to understand, manage, and reuse**.
- Objects are self-contained blocks of code with their own **properties** (attributes) and **functions** (methods).
- **Objects are like building blocks** that can be used to create more complex programs
- Encapsulation in OOP means **hiding internal details of objects from the outside**, making it easier to manage and understand code.
- **Inheritance** allows for the creation of classes (blueprints) that can **create multiple objects with shared properties and methods**

Taking a look at Objects:

Each Object has its own **properties** (attributes) and **actions** (methods) allowing them to **look different and do different tasks**



Examples of Objects:

They are **All Birds** sharing some of the same properties.
They all have unique properties of their own. Type, Color, Location

Birds

-Owl

-Two Legs
-Can Fly
-Worldwide

-HummingBird

-Two Legs
-Can Fly
-The Americas

-Canary

-Two Legs
-Can Fly
-Atlantic

-Parrot

-Two Legs
-Can Fly
-Tropical

Object and Class Breakdown:

An **Object (Instance) is an example from a Class** (Family). You can create many **different Objects all from a Single Class**

An Object

Birds

A Class (Family)

-Owl	-HummingBird	-Canary	-Parrot
-Two Legs	-Two Legs	-Two Legs	-Two Legs
-Can Fly	-Can Fly	-Can Fly	-Can Fly
-Light Maroon	-Purple/Red	-Red	-Mixed

Brainstorm Challenge

Take the next 5 minutes

-Think of **3 different Classes** (Families)

-For each Class, Think of **3 Objects**

Brainstorm Challenge Solutions:

Vehicles

-Cars

-Trucks

-Vans

-Luxury

Furniture

-Chair

-Sofa

-Table

-Bed

Countries

-USA

-Thailand

-Vietnam

-France

What you should already know:

At this point in your python journey you should already have a **decent understanding** of the following: **Variables, Functions, Loops, Conditions** as well as **basic lingo**

Functions

- Defining a function
- Parameters/ Arguments

Loops

- While Loop
- For Loop

Conditions

- Creating a condition
- Logical Operators

Data Structures

- Dictionaries
- Lists/Tuples