# A Brief Introduction to Classes

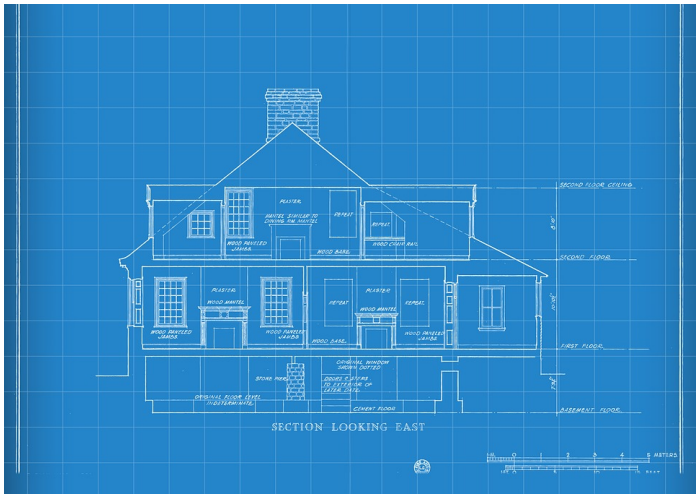
In the following lesson, you will be introduced to classes and how they're related to objects.

**We'll cover the following**

- Classes are Blueprints
- Learning by Example
- Built-In and User-Defined Classes

## Classes are Blueprints #

A blueprint is a guide used for making something. In the real world, blueprints are usually plans for making buildings. You can create multiple buildings using the same blueprint with each building being unique but having the same basic architecture. For instance, a blueprint might specify the number of rooms a house should have. While each house built using that blueprint will have the same number of rooms, one house might have rooms with white walls and another might have rooms with blue walls, making them unique entities, but still related through the blueprint.




Classes can be thought of as a blueprint with which you can create an **object**. We've touched upon objects in a previous lesson. Let's delve a bit deeper into objects and their relationship with classes.

An object is an **instance** of a class and that instance is the actual thing to be used

in our programs. In the same way, a single house is an instance of the blueprint

above. The blueprint is just a piece of paper while the house itself is the physical representation of that blueprint and can actually be lived in.

The blueprint will specify the properties the object would have and will also specify the operations/methods that the object can use. The properties and methods of a class are known as the **members** of that class. Properties in Dart are known as **instance variables** because they are variables which are initiated when an object is created, i.e., an instance of a class.

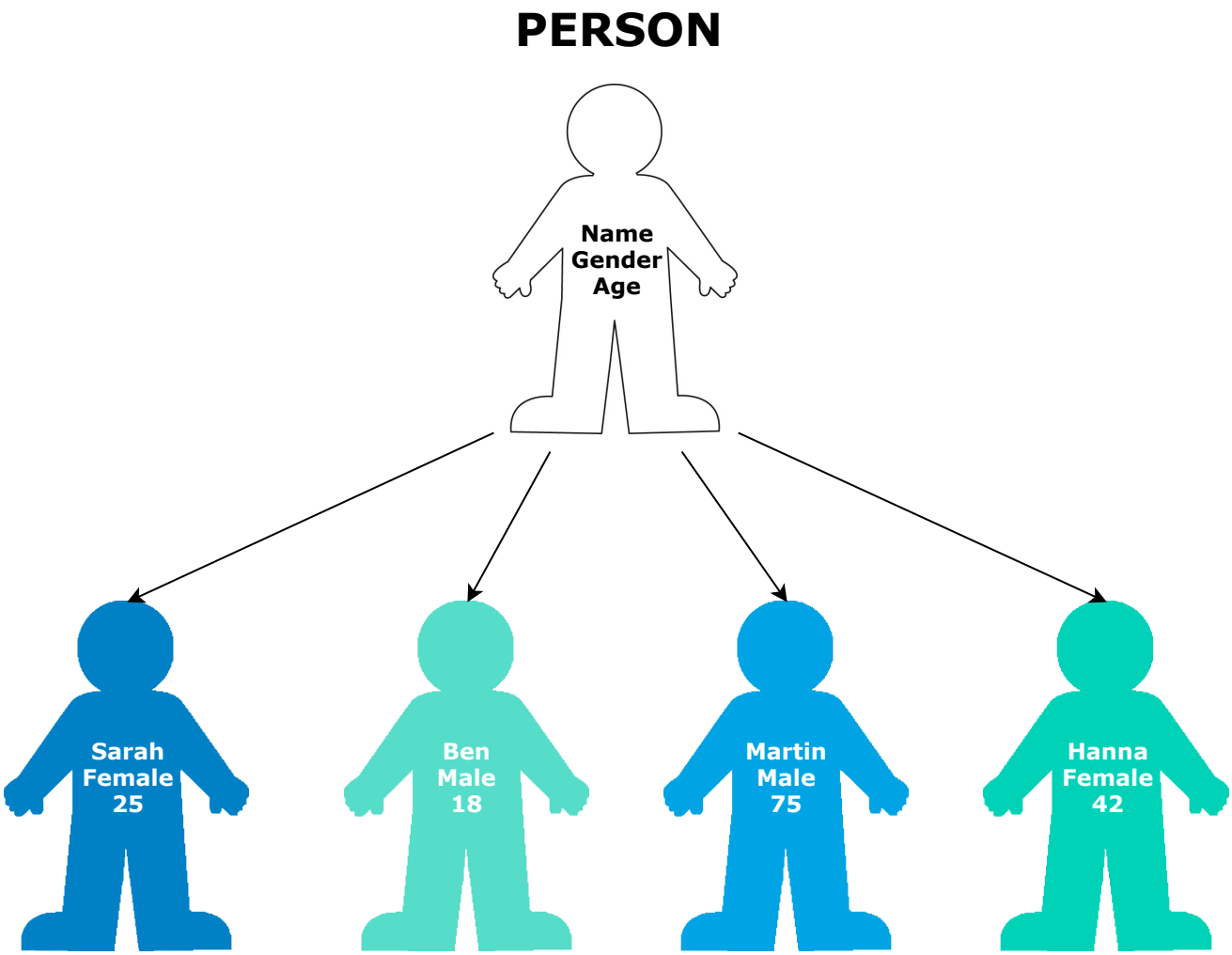
As always, learning by example is the best way to learn, so let's imagine how we can make a class that can be used to create a person.

## Learning by Example #

To make our person class, we first need to define its members, i.e., instance variables and methods.

Every person has a **name**, a **gender**, and an **age**. These are the instance variables of our person class. Furthermore, a person can perform certain actions such as **walking** and **talking**. These are the methods of our function class.

When we use our person class to create a *person*, we will create an instance of a person with its unique properties. We can create multiple instances using the same class.




Each person, Sarah, Ben, Martin, and Hannah can perform the methods of *walking* and *talking*.

## Built-In and User-Defined Classes #

Classes in Scala are broadly divided into two categories; built-in classes and user-defined classes.

Do you remember when we discussed lists? All the methods we discussed were actually a part of Dart's built-in `List` class. When we define a list, we are actually creating an instance, i.e., object, of the `List` class. This is the case for everything in Dart because it is an object-oriented programming language.

Every object is an instance of a class, and all classes descend from the topmost class in the class hierarchy, the `Object` class.

The focus of this chapter, however, is user-defined classes. In the coming lessons, you will learn how to make your own classes and objects in Dart.

Let’s begin by creating our very first class in the next lesson.