

## The Details

The (abstract) base class is Animal; Cat and Dog classes inherit from Animal; Siamese and Domestic Shorthair classes inherit from Cat; and, German Shepherd, Labrador Retriever, and Mixed Breed classes inherit from Dog. There are also AnimalRescueWorker and AnimalRescueCustomer classes whose purpose is to demonstrate functionality in main. Main runs from within the RunAnimalRescue class. Polymorphism is used throughout the classes in such methods as HappySound, UnhappySound, getDescription, etc.

## How It Works

My program is modeled after an animal rescue program that holds 5 dogs and 5 cats of various breeds. The program is completely randomized, meaning no two runs produce the same sequence of events. No interactions are the same, including greetings, choice of dog or cat, choice of specific animal, questions asked about the animal, whether or not to proceed with adoption, interactions with the animal, and closing statements. To better explain this, randomized features are shown in **bolded red** below.

The model goes as follows: The employee **greet the customer** and the customer chooses to **view dogs or cats**. The customer **chooses a specific animal** within their preferred category. If the animal is available for adoption, the customer can proceed to asking about the animal. If the animal is recently adopted, the customer cycles through animals until finding one that's open for adoption. The customer **asks the employee a question**. After answering the customer's question, the employee asks whether the customer is ready to adopt. The customer either **says yes or changes their mind**. In the latter scenario, the employee **politely expresses disappointment** and the process starts over. If the customer says yes, they will try to adopt the animal. However, animals have a happiness level that must reach 10 before they can be adopted. The customer **interacts with the animal** until happiness level 10 is reached. Most interactions such as play and giving a treat are positive and add 1 point to happiness, however, customers can **accidentally startle** an animal, which reduces the happiness level by 1 point. When the animal is happy enough, the customer adopts the animal and the employee **happily sends them on their way**. The program runs until 5 animals are successfully adopted.