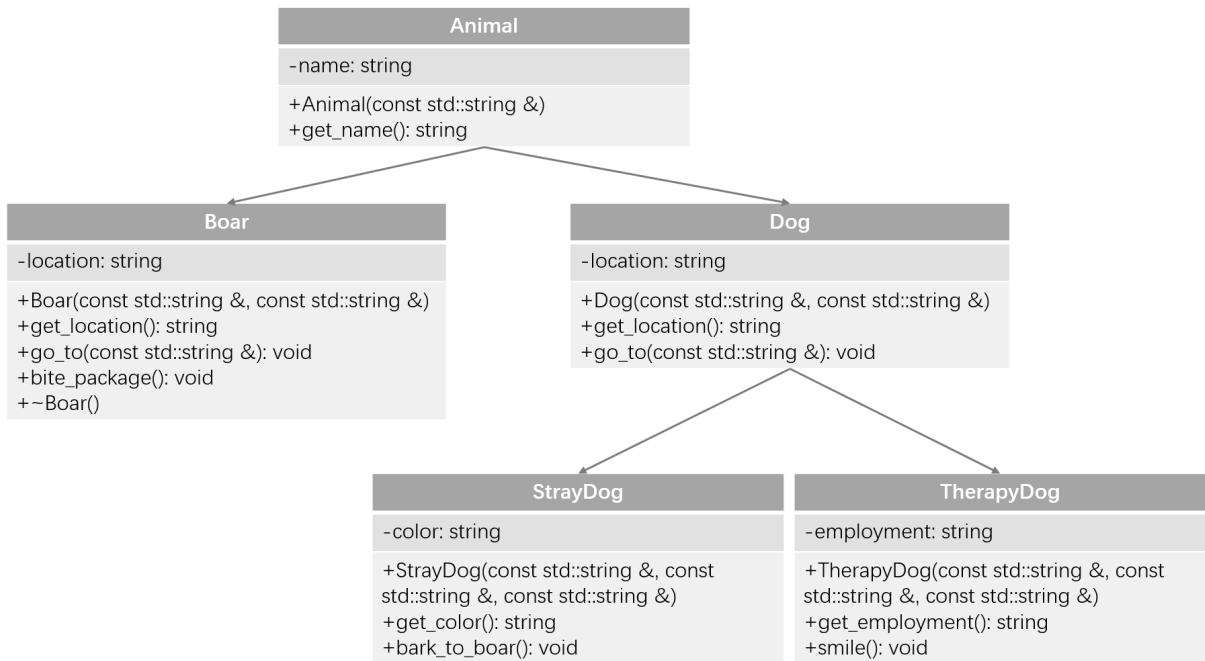# Lab 3 Inheritance Basic

Introduction

In this lab, you are going to use class and its inheritance to simulate the behavior of animal in UST. You should complete the TODOs in source files and get the expected output.

You can download the source files in a zip package HERE.

Description

There are many animals in UST. We create a base class `Animal`, and four derived classes `Boar`, `Dog`, `StrayDog`, and `TherapyDog`. The relationships between them are shown in the following figures. Detailed descriptions for each class can also be found below.

Note: '+':public; '-':private.

1. Animal

`Animal` is the base class with private attribute `name` and public function `get_name()`.

2. Boar

`Boar` is the class derived from `Animal`. It has the private attributes `location` and public function `get_location()`, `go_to()`,`bite_package()`. When the boar is at TowerB, it can bite the delivery packages.

3. Dog

`Dog` is the class derived from `Animal`. It has the private attribute `location` and public function `get_location()`, `go_to()`.

4. StrayDog

`StrayDog` is the class derived from `Dog`. It has the private attribute `color` and public function `get_color()`, `bark_to_boar()`. When the stray dog and boar are in the same place, the stray dog can bark to the boar. Then the boar will leave and go elsewhere.

5. TherapyDog

`StrayDog` is the class derived from `Dog`. It has the private attribute `employment` and public function `get_employment()`, `smile()`.

Task

1. Complete the TODOs in files `main.cpp`, `Boar.cpp`, `Boar.h`, `TherapyDog.h`, `StrayDog.cpp`

2. Compile the project and get the `lab3.exe` file

3. Run the executable and get the expected output as shown below:

```
Dog Coffee comes to UST.
Dog Coffee is a full-time therapy dog.
Boar Bob comes to UST.
Dog Doge comes to UST.
Dog Doge is a yellow stray dog.
Dog Dollar comes to UST.
Dog Dollar is a brown stray dog.
Dog Coffee goes to TowerB.
Boar Bob goes to GlobalGraduateTower.
Dog Doge goes to GlobalGraduateTower.
Dog Dollar goes to TowerB.
Therapy dog Coffee smiles at TowerB.
Stray dog Doge barks to boar at GlobalGraduateTower.
```

Menu

- [Introduction](#)
- [Description](#)
- [Task](#)
- [Hint](#)
- [Submission](#)

Page maintained by

Pengze Chen

Last Modified: 03/15/2023 04:35:29

The lab assignment is due by 20:00:00 on 24th March, 2023 (Friday).

We will use an online grading system ZINC to grade your lab work. Therefore, you are required to put the following file in a zip file.

Homepage

[Course Homepage](#)

- `TherapyDog.h`
- `StrayDog.cpp`

You can make multiple submissions to ZINC before the deadline. Only the last submission will be graded.