

Lab: Inheritance

Part I: Inheritance

1. Single Inheritance

In a folder called **project** create two files: **animal.py** and **dog.py**.

In the **animal.py** file create a class called **Animal** with a single public method **eat()** that returns: "**eating...**". In the **dog.py** file create a class called **Dog** with a single public method **bark()** that returns: "**barking...**".

Dog should inherit from **Animal**.

Submit in Judge a **zip file** of the folder **project**.

2. Multiple Inheritance

In a folder called **project** create three files: **person.py** and **employee.py** and **teacher.py**.

In each file create its corresponding class - **Person**, **Employee** and **Teacher**.

Person with a single public method **sleep()** that returns: "**sleeping...**".

Employee with a single public method **get_fired()** that returns: "**fired...**".

Teacher with a single public method **teach()** that returns: "**teaching...**".

Teacher should inherit from **Person** and **Employee**.

Submit in Judge a **zip file** of the folder **project**.

3. Hierarchical Inheritance

In a folder called **project** create three files: **animal.py** and **dog.py** and **cat.py**.

In each file create its corresponding class - **Animal**, **Dog** and **Cat**.

Animal with a single public method **eat()** that returns: "**eating...**".

Dog with a single public method **bark()** that returns: "**barking...**".

Cat with a single public method **meow()** that returns: "**meowing...**".

Dog and **Cat** should inherit from **Animal**.

Submit in Judge a **zip file** of the folder **project**.

Part II: Reusing Classes

4. Random List

Create a **RandomList** class that has all the functionality of a **List**.

Add additional function that **returns** and **removes** a random element from the list.

- Public method: **get_random_element()**

5. Stack of Strings

Create a class **Stack** which can store **only strings** and has the following functionality:

- Public field: **data: list**
- Public method: **push(item)**
- Public method: **pop()**
- Public method: **peek()**
- Public method: **is_empty(): returns boolean**

Override the string method to return the stack data.