Lab: Inheritance

Problems for in-class lab for the Python OOP Course @SoftUni. Submit your solutions in the SoftUni judge system at https://judge.softuni.bg/Contests/1940

Part I: Inheritance

1. Single Inheritance

Create two classes named **`Animal`** and **`Dog`**.

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

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

`Dog` should inherit from **`Animal`**.

2. Multiple Inheritance

Create three classes named **`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`**.

3. Hierarchical Inheritance

Create three classes named **`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`**.

Part II: Reusing Classes

4. Random List

Create a **`RandomList`** class that has all the functionality of an **`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:

- Private field: **`data: list`**

- Public method: **`push(item)`**
- Public method: **`pop()`**
- Public method: **`peek()`**
- Public method: **`is_empty(): returns boolean`**