CS 1450 – Intro to Object Oriented Programming

Lab 9

Instructor: Patrik Boloz
Date: 11-14-2023
Due by: 11-21-2023

Instructions:

Create a base class called `Fruit` with essential attributes and methods. Then with the use of inheritance create three child classes (`Apple`, `Banana`, and `Orange`) with unique attributes and methods. Create at least one object from each child class and demonstrate the use of attributes and methods.

1. Create a class named `Fruit` with the following attributes:

   - `name` (string): representing the name of the fruit.

   - `color` (string): representing the color of the fruit.

   - `taste` (string): representing the taste of the fruit.

2. Implement the following methods in the `Fruit` class:

   - `__init__`: a constructor to initialize the attributes.

   - `display_info`: a method to print information about the fruit.

   - `is_delicious`: a method to print a message indicating that the fruit is delicious.

   - `is_ripe`: a method to print a message indicating that the fruit is ripe.

3. Create three child classes (`Apple`, `Banana`, and `Orange`) that inherit from the `Fruit` class.

4. For each child class, add at least one unique attribute and one unique method:

  - `Apple` class:

      - Unique attribute: `variety` (string): representing the variety of the apple.

      - Unique method: `crunchiness_level`: a method to print information about the crispiness of the apple.

- `Banana` class:

    - Unique attribute: `length` (string): representing the length of the banana.

    - Unique method: `peel`: a method to print a message indicating the peeling process of the banana.

- `Orange` class:

    - Unique attribute: `citrus_type` (string): representing the type of citrus in the orange.

    - Unique method: `extract_juice`: a method to print a message about extracting juice from the orange.

5. Create at least one object from each child class and demonstrate the use of attributes and methods.

Submission Guidelines:

1. Submit a Python script (.py file) containing the implemented classes and objects.

2. Include comments in the code to explain the purpose of each class, method, and attribute.

Grading Criteria:

- Correct implementation of the base class and child classes.

- Proper use of inheritance to establish relationships between classes.

- Unique attributes and methods for each child class.

- Creation of objects and successful demonstration of attributes and method usage.

- Clarity and organization of the code, including meaningful variable and method names.