**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.