

Chapter 14 – Extra Practice

Extra Practice

Extra practice is for those who would like to do some extra practice projects to further hone their skills learned in each assignment. There are no additional points to be gained by completing these projects.

Customer or Employee Creator

Create an object-oriented program that allows you to enter data for customers and employees.

```
Customer/Employee Data Entry
Customer or employee? (c/e): c

DATA ENTRY
First name: Frank
Last name: Wilson
Email: frank44@gmail.com
Number: M10293

CUSTOMER
First name: Frank
Last name: Wilson
Email: frank44@gmail.com
Number: M10293

Continue? (y/n): y

Customer or employee? (c/e): e

DATA ENTRY
First name: Joel
Last name: Murach
Email: joel@murach.com
SSN: 123-45-6789

EMPLOYEE
First name: Joel
Last name: Murach
Email: joel@murach.com
SSN: 123-45-6789

Continue? (y/n): n

Bye!
```

Specifications

- Create a Person class that provides attributes for first name, last name, and email address. This class should provide a property or method that returns the person's full name.
- Create a Customer class that inherits the Person class. This should add an attribute for a customer number.
- Create an Employee class that inherits the Person class. This should add an attribute for a social security number (SSN).
- The program should create a Customer or Employee object from data entered by the user, and it should use this object to display the data to the user. To do that, the program can use the `isinstance()` function to check whether an object is a Customer or Employee object.

Random Integer List

Create an object-oriented program that uses a custom list object to automatically generate and work with a series of random integers.

```
Random Integer List

How many random integers should the list contain?: 12

Random Integers
=====
Integers:  17, 34, 34, 15, 71, 44, 97, 48, 19, 12, 83, 42
Count:      12
Total:      516
Average:    43.0

Continue? (y/n): y

Random Integers
=====
Integers:  52, 88, 10, 77, 56, 91, 17, 51, 22, 14, 48, 37
Count:      12
Total:      563
Average:    46.917

Continue? (y/n): n

Bye!
```

Specifications

- Create a RandomIntList class that inherits the list class. This class should allow a programmer to create a list of random integers from 1 to 100 by writing a single line of code. For example, a programmer should be able to create a custom list that stores 12 random integers with this line of code:

```
int_list = RandomIntList(12)
```

- To do that, you can use the self keyword to access the list superclass like this:

```
self.append(rand_int)
```

- The RandomIntList class should contain methods for getting the count, average, and total of the numbers in the list. In addition, it should contain a __str__ method for displaying a comma-separated list of integers as shown above.
- The program should use the RandomIntList class to generate the list of random integers, display the list, and get the summary data (count, total, and average).