

## Assignment #3

01 April 2022

### Progression Though Gaddis' Chapter 10

Chapter 10.1-10.5: The program is an introduction to classes, we start with a class code for "coin". The class is defined by the "class" function. this Coin class is recycled though several lessons.

Result is:

```
this side is up: heads
I am tossing the coin ...
this side is up: tails
>>>
```

```
import random

class Coin:

    def __init__(self):
        self.sideup = 'heads'
    def toss(self):
        if random.randint(0, 1) == 0:
            self.sideup = 'heads'
        else:
            self.sideup = 'tails'
    def get_sideup(self):
        return self.sideup

def main():
    my_coin = Coin()
    print('this side is up:' , my_coin.get_sideup())

    print('I am tossing the coin ...')

    my_coin.toss()
    print('this side is up:' , my_coin.get_sideup())

main()
```

Chapter 10.6 : class introduction to storing class codes, in modules. In a module, you import a class.

```
import coin

def main():
    my_coin = coin.Coin()
    print('this side is up:' , my_coin.get_sideup())

    print('Now toss the coin ten times.')
    for count in range(10):
        my_coin.toss()
        print(my_coin.get_sideup())

main()
```

When you run this module, I call on the class we built earlier. While doing this we are increasing the times the class produces an output.

## Chapter 10.7- 10.11

Where we practice making several classes with one being the bankaccount.py and running them through a module.

```
import ch10_9 as BA

def main():
    start_bal = float(input('Enter your starting balance: '))

    savings = BA.BankAccount(start_bal)

    pay = float(input('how much were you paid this week? '))
    print('I will deposite that into your account.')

    savings.deposit(pay)

    print(savings)

    cash = float(input('How much would you like to withdraw? '))
    print('I will wilthdraw taht from your account.')

    savings.withdraw(cash)

    print(savings)

main()
```

```
Enter your starting balance: 10000.65
how much were you paid this week? 325.36
I will deposite that into your account.
the balance is $10,326.01
How much would you like to withdraw? 50.00
I will wilthdraw taht from your account.
the balance is $10,276.01
```

The result is :

```
Enter your starting balance: 11000
Traceback (most recent call last):
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/ch10.10.py", line 22, in <module>
    main()
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/ch10.10.py", line 8, in main
    pay = float(inpiut('how much were you paid this week? '))
NameError: name 'inpiut' is not defined
>>>
```

Below we see that I was having trouble with copy errors all though out the lesson from 10.7-10.10.

```
Traceback (most recent call last):
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/ch10.10.py", line 22, in <module>
    main()
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/ch10.10.py", line 11, in main
    savings.deposit(payment)
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/ch10_9.py", line 5, in deposit
    self.__balance += Amount
NameError: name 'Amount' is not defined
>>>
```

```
= RESTART: C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/ch10.10.py
Enter your starting balance: 10000
how much were you paid this week? 2500
I will deposite that into your account/
the balance is $12,500.00
How much would you like to withdraw? 0
I will wilthdraw taht from your account.
the balance is $12,500.00
>>>
= RESTART: C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/ch10.10.py
Enter your starting balance: 11562.63
how much were you paid this week? 361.50
I will deposite that into your account.
the balance is $11,924.13
How much would you like to withdraw? 40.00
I will wilthdraw taht from your account.
the balance is $11,884.13
>>>
```

Here I am working through 10.13 and I have been having issues with the main function.

```

main()
SyntaxError: invalid syntax
>>>
>>> def main():
    man = input('enter the manufacture:')
    mod = input('enter the model:')
    retail = input('enter the retail price:')
    phone = CP.CellPhone(man, mod, retail)
    print('Here is the data that you entered:')

main()

SyntaxError: unindent does not match any outer indentation level
>>> def main():
    man = input('enter the manufacture:')
    mod = input('enter the model:')
    retail = input('enter the retail price:')
    phone = CP.CellPhone(man, mod, retail)
    print('Here is the data that you entered:')

>>> main()
Traceback (most recent call last):
  File "<pyshell#13>", line 1, in <module>
    main()
  File "<pyshell#12>", line 2, in main
    man = input('enter the manufacture:')
NameError: name 'man' is not defined
>>> def main():
    man = input('enter the manufacture:')
    mod = input('enter the model:')
    retail = input('enter the retail price:')
    phone = CP.CellPhone(man, mod, retail)
    print('Here is the data that you entered:')

>>> main()
enter the manufacture:|

```

Copy errors always get me.

```

    print('Here is the data that you entered: ')
    print('Manufacturer:' , phone.get_manufact())
    print('Model:' , phone.get_model())
    print('Retail Price: $' , format(phone.get_retail_price(), ',.2f'), sep='')

main()

```

Figured out the main function issue was the number of parentheses at the end of the line. Because of this trouble, I decided to run the program in Jupyter Notebook.

Had a slight breakthrough with the last part of the 10-13 code in Jupyter but still needs work.

```

13     print('retail Price: {:.2f} $'.format(float(phone.get_MSRP())))
14
15
16 main()
17
18

```

enter the manufacture: Samsung  
 Enter the model number: S21  
 Enter the retail price: 1000.998  
 Here is the data that you entered:  
 Manufacturer: Samsung  
 Model Number: S21  
 retail Price: 1000.998000 \$

the issue now is that the float value has too many decimals.

```
13     print('retail Price: $ {:.2f} '.format(float(phone.get_MSRP()))))
14
15
16 main()
17
18
```

```
enter the manufacture: samsung
Enter the model number: s21
Enter the retail price: 1000.5689
Here is the data that you entered:
Manufacturer: samsung
Model Number: s21
retail Price: $ 1000.57
```

The solution was one “.”, I was missing the value in line 13. `{:2f}` was what I was using when I should have been using `{:.2f}`.

```
print('retail Price: $ {:.2f} '.format(float(phone.get_MSRP()))))

main()
```

I ran the program again in ILDE Shell, and it worked.

```
enter the manufacture: Samsung
Enter the model number: Galaxy s21
Enter the retail price: 1000.2596
Here is the data that you entered:
Manufacturer: Samsung
Model Number: Galaxy s21
retail Price: $ 1000.26
>>>
```

Ch10.14 in this exercise we learn how to use getters and setters. We call upon a previous class in the new mod, but we it a different outcome instead of one input and one output we are then able to create a list of outputs from our list of inputs. In this instance, we make a list of 5 phones.

```
import cellPhone1 as cp

def main():
    phones = make_list()

    print ('Here is the data you entered.')
    display_list(phones)

def make_list():
    phone_list = []

    print('Enter data for five phones.')
    for count in range(1, 6):
        print('Phone number ' + str(count) + ':')
        man = input('Enter the manufacture: ')
        mod = input('Enter the model number: ')
        retail = float(input('enter the retail price: '))
        print()

        phone = cp.Cellphone(man, mod, retail)

        phone_list.append(phone)

    return phone_list

def display_list(phone_list):
    for item in phone_list:
        print(item.get_manufact())
        print(item.get_model())
        print(item.get_MSRP())
        print()

main()
```

```
Enter data for five phones.
Phone number 1:
Enter the manufacture: Apple
Enter the model number: iPhone 13
enter the retail price: 1000.999

Phone number 2:
Enter the manufacture: Samsung
Enter the model number: Galaxy s22
enter the retail price: 999.96

Phone number 3:
Enter the manufacture: Apple
Enter the model number: iPhone 12 pro
enter the retail price: 799.653

Phone number 4:
Enter the manufacture: Samsung
Enter the model number: Galaxy s21 ultra
enter the retail price: 699.685

Phone number 5:
Enter the manufacture: Google
Enter the model number: Pixle 6 pro
enter the retail price: 999.99
```

the resulting data is a list of 5 phones and their retail prices.

```
Here is the data you entered.
Apple
iPhone 13
1000.999

Samsung
Galaxy s22
999.96

Apple
iPhone 12 pro
799.653

Samsung
Galaxy s21 ultra
699.685

Google
Pixle 6 pro
999.99
```

Chapter 10.15: we start with learning how to pass objects as arguments.

```
import coin as C

def main():

    my_coin = C.Coin()

    print(my_coin.get_sideup())

    flip(my_coin)
    print(my_coin.get_sideup())

def flip(coin_obj):
    coin_obj.toss()

main()
```

sometimes it is good to remember what you wrote in your classes so that you don't run into this issue when you are trying to run your module.

```
my_coin = C.coin()
AttributeError: module 'coin' has no attribute 'coin'
```

Because I didn't remember, I had to look back at that code to see what I had written. Once I got that figured out, the code ran.

Looked something like this:

```
heads
tails
>>>
heads
tails
>>>
heads
heads
```

```
import pickle
import cellPhone1

FILENAME = 'cellphone.dat'

def main():
    end_of_file = False

    input_file = open(FILENAME, 'rb')

    while not end_of_file:
        try:
            phone = pickle.load(input_file)

            display_data(phone)
        except EOFError:
            end_of_file = True

    input_file.close()

def display_data(phone):
    print('Manufacture: ', phone.get_manufact())
    print(' Model Number: ', phone.get_model())
    print('Retail Price: $ {:.2f} '.format(float(phone.get_MSRP())))
    print()

main()
```

```
Traceback (most recent call last):
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/unpickleCell
phone_ch10_17.py", line 13, in main
    phone = pickle.load(input_file)
EOFError: Ran out of input

During handling of the above exception, another exception occurred:

Traceback (most recent call last):
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/unpickleCell
phone_ch10_17.py", line 27, in <module>
    main()
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/unpickleCell
phone_ch10_17.py", line 16, in main
    except EOFError:
NameError: name 'EOFError' is not defined
>>>
= RESTART: C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/unpickleC
ellphone_ch10_17.py
Manufacture: s
Model Number: d
Retail Price: $ 56.23
```

spotlight: Program10.16-10.17: Pickling Objects. We import the pickle function. and revisit our cellPhone1.py class. and build a new mod. in this mod, we learn to pickle an output, which is like storing data. then we unpickle the data which takes the stored data and displays the data in a list.

I had to use the

```
.format(float(number()))
```

format again, I think the way Gaddis calls on the formatting is specific to a certain python version.

```
Enter the manufacture: s
Enter the model number: d
Enter the retail price: 56.235
Enter more phone data? (y/n): n
The data was written to cellphone.dat
>>>
```

Below we see several errors, but they are all for one little mistake in the spelling.

[Quick tip: Toggling on the line numbers on the file window helps a lot with the location of errors]

```
Traceback (most recent call last):
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/unpickleCell
phone_ch10_17.py", line 13, in main
    phone = pickle.load(input_file)
EOFError: Ran out of input

During handling of the above exception, another exception occurred:

Traceback (most recent call last):
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/unpickleCell
phone_ch10_17.py", line 27, in <module>
    main()
  File "C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/unpickleCell
phone_ch10_17.py", line 16, in main
    except EOFError:
NameError: name 'EOFError' is not defined
>>>
= RESTART: C:/Users/srwal/OneDrive/Documents/dcSpring2022/CSC200/Gaddis/chapterTen/unpickleC
ellphone_ch10_17.py
Manufacture: s
Model Number: d
Retail Price: $ 56.23
```

This is where I stopped, for the time being, Once I move forward again I will repost the assignment.