

## 420-LCU-05 Programming in Python

### Lab-11 Classes & Objects

**Due- Wednesday April 27th, 2022**

#### Objective:

Practice with creating a simple class, class methods and class variables.

#### Submission:

Submit all code in 1 python file named BankAccount.py

Do not forget to include the identification section at the top of your file.

#### Exercise

##### Part 1 Define Class & Class Methods:

Define a basic python class named BankAccount with the following attributes.

- 1- **code**: A 6-digit unique identifier (int)
- 2- **name** : Account holder's name. A character string (8-15 characters)
- 3- **bank**: A character string (2-10 characters)
- 4- **type**: A character string; Valid types: chequing, saving, invest, loan, TFSA, RRSP.
- 5- **balance**: *Default initial balance is zero* (int)  $0 \leq \text{balance} \leq 10000$
- 6- **password**: *private* attribute. (string length between 8 & 15 inclusive) Same specification as Lab4
- 7- **last\_access**: *private*. Date and time of last transaction on the account. *Updated automatically* by the class each time you do a transaction. (Note: creating an account is a transaction)

The class defines the basic class methods `__init__`, `__del__` and `__repr__`

The class also defines methods:

`withdraw`, `deposit`, `transfer`, `create_pwd`, and `get_balance`.

##### Part 2 Testing Your Class:

After defining the class, you will write python code to test your class. Note that any code to create objects based on the class has to be outside the class and managed by the dictionary `MyAccounts`

#### #Main Program

```
MyAccounts = {} # Dictionary of Accounts
```

Now write basic code to complete the following Transactions:

- 1- Read the file `accounts.txt` and create the accounts. Each account is added on the dictionary `MyAccounts` where key is the account code and value is the account object.
- 2- Create an account with the following information (`code=122156`, `name=Lea Smith`, `bank=TD`, `type=saving` and `initial balance=200`)

- 3- Create an account with the following information (code=222552, name=John Green, bank=RBC, type=chequing and initial balance=0)

The following transactions must ensure that an account exists before completing the transaction.

- 4- Deposit \$100 in account ID 122156
- 5- Deposit \$100 in account ID 888888
- 6- Withdraw \$100 from account ID 122156
- 7- Get the balance of the account ID 122156
- 8- Transfer \$50 from account ID 122156 to account ID 222552