**Project Description:** This project will allow students to evaluate a given scenario then use skills such as problem solving and logic to develop an Input Process Output file and pseudocode. You will need to use all the styles you’ve learned so far such as color coding, comments, including the program name, etc. Your project needs to work AND look professional.

***Your final project should satisfy the following scenario:***

You are writing a program that will act like an ATM machine by the end of this course. In order to access the ATM, the customer must enter their user name and 4 digit PIN. After 3 incorrect attempts at entering the user name and password, the program will end. The list of legitimate users along with their user ID, passcode and account balance will be provided to you.

There are only 5 functions that can be carried out by the ATM:

1 – Deposit (adding money to the account)

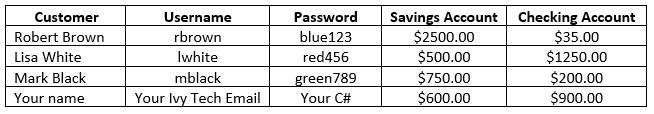
2 – Withdrawal (removing money from the account)

3 – Balance Inquiry (check current balance)

4 – Transfer Balance (transfer balance from one account to another)

5 – Log Out (exits/ends the program)

Allow the user to make up to a maximum of 3 transactions at a time. After 3 transactions, the program will terminate. Each transaction cannot exceed $500; for example, a user cannot withdraw more than $500.00, if there is $500.00 available on their account. After a transaction is completed, the program will update the running balance and give the customer a detailed description of the transaction. A customer cannot overdraft on their account; if they try to withdraw more money than there is, a warning will be given to the customer. Also note that the ATM doesn’t distribute or collect coins – all monetary values are in whole dollars (e.g. an integer is an acceptable variable type). Any incorrect transaction types will display an appropriate message and count as a transaction.



**Final Project Part 1: The IPO**

* Your IPO should include all the design elements you’ve learned so far such as program name, version number, etc.
* The name of this assignment is SDEV 120 Final Project.
* Use at least one array to capture the account information for each customer. Use appropriate selection structures to allow customers to do multiple transactions.
* Explain your process(es) to prevent the user from entering invalid data.
* Your IPO should be saved as a MS Word document with the filename LastName Final Project IPO, where LastName is your own last name.

**Final Project Part 2: The Pseudocode**

* Use the Problem-Solving Strategy discussed in section 6.5 (pages 374 to 382) in the Prelude to Programming book to address solving the problem that has been given. Use the section 6.5 (pages 374 to 382) as a guide to what your documentation should include.
* All elements of professional Pseudocode must be present such as appropriate comments, color coding, indenting, and all other attributes you’ve learned during the SDEV 120 class.
* Use defensive coding to prevent the user from entering invalid data.
* Desk check your code to ensure there are no logic or syntax errors.
* Your PC should be saved as a MS Word document with the filename LastName Final Project PC, where LastName is your own last name.

**Final Project Part 3: Raptor**

* Create a functioning model of your pseudocode in Raptor.
* Make an effort to present input and output in a professional looking layout that makes it easy to read for the end user.
* Include error traps, as you did in your PC, to prevent the user from entering invalid data.
* Your Raptor program must run without any errors.
* Ensure you run your program with different input values to ensure you don’t have any logic errors.
* Save your Raptor file with the filename LastName Final Project Raptor, where LastName is your own last name.