Problem Solving:

The problem that is being solved with the ATM Program is allowing users to access their Bank accounts via an ATM.

The program that has been built for the ATM is as followed: When the user first access the ATM they will be welcomed by a friendly message and thanking them for choosing the (name) of the Bank. The is will go and collect all the variables, then it will go collect all the usernames and passwords for the customers. This information is stored in an array, so that way when the customer inputs their username and password it will test it against what is in the array. If a customer that does not use the bank or they happen to input, the wrong information they get up to three tries before it will lock the out of the ATM (if it were a real world it would lock them out and make them wait.) They are given up to three tries because it is easy to put the wrong username or password, and it allows them to get into their account once the put the right information. (If this were the real world then it would let them know that either the username or password was wrong.) The first major input requested by the program for the user to enter is their username and password.

Once in the account the program will gather their account information, it does not display this to the user but has it for its own record. The second input that is required from the user is if they want to access their checking or saving accounts. This will allow the program to pair the correct amount in the accounts. The third input that customer is required to do is what they want to do. The options are given as Deposit, Withdrawal, Balance, Transfer, or Log Out, these are numbers 1 through 5 (Deposit=1, Withdrawal=2, Balance=3, Transfer=4, and Log Out=5), if the user does not want to log out after their first transaction, they can do up to three transactions in a single log-in. The only limit that is apposed on the customer is they cannot add or remove any amount greater than $500. Depending on what the user picks it will go into the correct location. Inside of each location is another input request for the user. This one is for the amount. Inside all of the transaction types it will test, first to see if the account has enough money if the customer is wanting to transfer or withdrawal a certain amount. Then it will run through and either add or subtract from to account depending on the transaction the user is doing along with if the amount is less than or equal to $500.

The equations are as followed: (Only different so it will all fit and still look nice)

Deposit: Checking = Checking + Deposit, Savings = Savings + Deposit.

Withdrawal: Checking = Checking – Withdraw, Savings = Savings – Withdraw

Transfer to Savings: Checking = Checking – Transfer (amount) Then Savings = Savings + Transfer

Transfer to Checking: Checking = Checking + Transfer (amount) Then Savings = Savings – Transfer

If the customer inputs any invalid information or does not choose the correct transaction type, it will output errors letting the customer know that they did something wrong and even counts towards the number of transactions that they can do. Depending on what the action the user has chosen to do it once it is done it will output to the user what they have and the change to the account or accounts. Once the user has chosen to end their time with the ATM or they have used their three transactions it will end, it will show the user what is in both accounts after they did the transaction and output a message thanking them for using the program.

To show the program design there is a Use Case diagram attached. The program code that was code to build and test the program was by Raptor. This program has been built and tested many times. The way that it is built, it can allow for more users to be added to the array, (If possible, to have all the information such as amounts done in an array which can allow for smaller amounts of steps to be done.)

Program Test:

User: Robert Brown Checking (When Starting): $35.00 Savings(When Starting): $2500.00

Username: rbrown

Password: blue1234

First Transaction: Deposit to Checking: Amount of $510.

Output: Error: Sorry the amount exceeds the maximum allowed.

Second Transaction: Deposit to Checking: Amount: $85

Output: The Balance in Checking is: $120

Third Transaction: Transfer from Savings to Checking: Amount: $350

Output: The Balance in Checking is: $470 And Savings is: $2150