ISYS 216 Assignment 4 – Special ATM V2

General Rules for Homework Assignments

- The beginning comment section must have at a minimum the following or points will be deducted:
  - The name of the developer and the date written
  - The instructors name
  - The course and section number
  - A statement as to its purpose
  - The inputs and outputs
  - A list of exposed interfaces
  - A list of all variables, their type, and their purpose
- You are strongly encouraged to add comments throughout the program. Doing so will help your instructor to understand your programming logic and grade you more accurately.
- You must work on your assignments individually. You are not allowed to copy the answers from the others. *However*, you are encouraged to discuss approaches to the homework assignment with your section mates and the instructor.
- Each assignment has a strict deadline. Due dates are posted on the Schedule. Remember that ALL assignments must be completed to pass this course.
- When the term *YourName* is referenced in an assignment, please replace it with your name.

Your assignment is to take Assignment 1 and modify it with methods that:
1. Calculate the number of bills required for the denomination.
   a. The method will have two integer parameters: the remaining amount and the denomination
   b. The method will return an integer value that is number of bills for the given denomination
2. Calculate the remainder.
   a. The method will have two integer parameters: the remaining amount and the denomination
   b. The method will return an integer value that is the remaining amount for the given denomination
3. Print to the console both of the values calculated in previous two methods.
   a. The method will have two integer parameters: the remaining amount and the denomination
   b. The method will use a *switch* statement to determine which output statement to use for each denomination
   c. The method will be of type *void*
4. In addition, you will create a method that checks if sufficient bills of each denomination are present in the ATM to meet the quantity needed to dispense the correct amount.
   a. The following variables will be added to the program and used by the method:
   ```
   int numHundredsAvailable = 5;
   int numFiftiesAvailable = 5;
   ```

```
                int numTwentiesAvailable = 5;
                int numTensAvailable = 5;
                int numFivesAvailable = 5;
                int numTwosAvailable = 5;
                int numOnesAvailable = 5;
```

b. The method will have three integer parameters: the remaining amount, the denomination, and the number of bills for a give denomination available in the ATM. (The variables in 4.a will be passed in for the third parameter)

c. Once it has been determined that a sufficient number of bills are present for the transaction to take place, the number will of bills to be dispensed will be debited from number of bills available. If an insufficient number of bills are present then an error message should be output and the program terminated.

d. A message will then be output to indicate the number of bills remaining for the given denomination.

e. The method will be of type *Boolean* and return true if a sufficient number of bills are present for the transaction and false otherwise.

5. Create flow charts for each of the methods and the program's main.

(80 Points) - Input – 10 points, computations – 10 points, output – 10 points Methods – 10 points each, header and comments – 10 pionts

Your output should look similar to the following:

Sample Input:
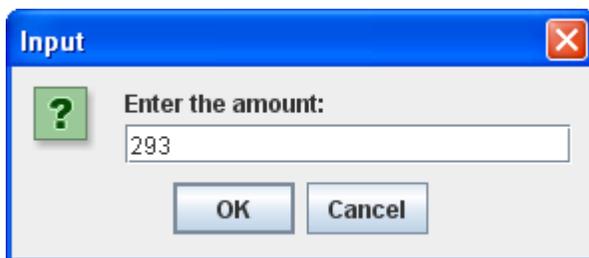
Sample Console Output:

```
Requested Amount = 293
There are 3 Hundreds remaining in the ATM
Hundreds = 100, Remaining Amount = 93
There are 4 Fifties remaining in the ATM
Fifties = 50, Remaining Amount = 43
There are 3 Twenties remaining in the ATM
Twenties = 20, Remaining Amount = 3
There are 5 Tens remaining in the ATM
Tens = 10, Remaining Amount = 3
There are 5 Fives remaining in the ATM
Fives = 5, Remaining Amount = 3
There are 4 Twos remaining in the ATM
Twos = 2, Remaining Amount = 1
There are 4 Ones remaining in the ATM
```

```
Ones = 1
```

Sample Dialog Output:

Submission:

Submit your entire project subdirectory, including flowchar, as
YourNameAssignment4.zip as an attachment in the Assignment 4 Section.