Assignment name: DigitExtractor Mastery Project - Chapter 7
Student name: Misha Stanev

Reflection Log

Planning: During my planning stage I wanted to reuse my code from Digits.java in chapter 3
Coding: I recycled most of my Digits.java code but I added methods
Now: Same as coding

Create DigitExtractor class and initialize instance variables (Shown below)

```
public class DigitExtractor {
    private int number, wholeNumber, ones, tens, hundreds; // Declare variables
```

Create methods to calculate each place value spot in a number (Shown below)

```
 public DigitExtractor() {
     number = 0; // Default number is 0
 }

 public DigitExtractor(int Num) {
     number = Num; // Initialize num with the given value
 }

 public void setNumber(int Num) {
     number = Num; // Set the number
 }

 public int getNumber() {
     return number;
 }

 public int getOnes() { // Calculate the ones place value
     ones = number % 10;
     return ones;
 }

 public int getTens() { // Calculate the tens place value
     int NumNOne = (number - ones) / 10;
     tens = NumNOne % 10;
     return tens;
 }

 public int getHundreds() { // Calculate the hundreds place value
     int NumNOne = (number - ones) / 10;
     hundreds = (NumNOne - tens) / 10;
     return hundreds;
 }
```

Create main method which also has variables quit and userChoice (Shown below)

```
public static void main(String[] args) { // Main method where program begins
    Scanner userinput = new Scanner(System.in); // Scanner object for storing user input
    DigitExtractor NUM = new DigitExtractor(); // Create instance of DigitExtractor
    String userChoice; // Variable for user input
    String quit; // Variable for quit
```

Create a do-loop which will continue looping until user tells it to stop by entering “q” (Shown below)

```
do {
    System.out.print("Enter a three digit number: "); // Prompt user to enter number
    NUM.setNumber(userinput.nextInt());


    // Display options for user to choose from
    System.out.println("Print (W)hole number: ");
    System.out.println("Print (O)nes place number. ");
    System.out.println("Print (T)ens place number. ");
    System.out.println("Print (H)undreds place number.");
    System.out.println("(Q)uit");
    System.out.print("Enter your choice: ");
    userChoice = userinput.next(); // Save user input to userChoice
```

If statements which perform action depending on userChoice (Shown below)

```
    // Perform action depending on userChoice
    if (whole.contains(userChoice)) {
        System.out.println("The whole number is: " + NUM.getNumber()); // Prints whole number
        System.out.println("");
    } else if (one.contains(userChoice)) {
        System.out.println("The number in the ones place is: " + NUM.getOnes()); // Prints ones place
        System.out.println("");
    } else if (ten.contains(userChoice)) {
        System.out.println("The number in the tens place is: " + NUM.getTens()); // Prints tens place
        System.out.println("");
    } else if (hundred.contains(userChoice)) {
        System.out.println("The number in the hundreds place is: " + NUM.getHundreds()); // Prints hundreds place
        System.out.println("");
    }
} while (!quit.contains(userChoice)); // repeat until user chooses to quit
```

Prints when user enters “q” to end program (Shown below)

```
System.out.print("End of program."); // Prints when program ends
```