CT874

Assignment 3

H. Dip. Industry Stream

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Question 1

Code:

```
/*Name: Tori Hume
 * ID: 11486248
 * Assignment 3
 * Part 1
 */

//Import Scanner
import java.util.Scanner;

//Start Class
public class DigitCounter {



	//Creat Method
	public static void main(String[] args) {

		int number; //Declare variable number as an integer
		Scanner input = new Scanner(System.in); // Declare and create input (type scanner)

		//Lets user know what the program will do.
		System.out.println("This programm will test the number of digits in an integer. \nThe integer to be tested will be entered by the user.");

		number =0; //sets number to 0
		System.out.println("\nPlease enter the Number you wish to test:"); //prints to screen
		number= input.nextInt();  //sets number equal to the next integer entered.

		while(number!= -1){		//while loop so program works until -1 entered
			System.out.println("Number of digits in "+ number + " is "+ Integer.toString(number).length()); //prints to screen
			System.out.println("Please enter the next number you wish to test:");	//prints to screen
			number= input.nextInt();  //sets number equal to the next intger entered
		}
		//once -1 entered the while loop is exited and this prints to the screen
		System.out.println("value of -1 entered, Program Finished.");
		input.close(); //closing scanner

	}	//closing method
} // closing class
```

Screen Shot:

```
<terminated> DigitCounter [Java Application] C:\Program Files\Java\jre1.8.0_101\bin\javaw.exe (5 Oct 2016, 17:10:44)
This programm will test the number of digits in an integer.
The integer to be tested will be entered by the user.

Please enter the Number you wish to test:
1234
Number of digits in 1234 is 4
Please enter the next number you wish to test:
12
Number of digits in 12 is 2
Please enter the next number you wish to test:
12464654
Number of digits in 12464654 is 8
Please enter the next number you wish to test:
-1
value of -1 entered, Program Finished.
```

Question 2

Code:

```
/*Tori Hume
 * ID 11486248
 * Assignment 2
 * Question 2
 * Part (I)
 */
public class Student {

	private String name; //This is the name of the student of type string
	private	long IDnumber; //This is the students ID of type long

	//default constructor
	public Student() {
		this("No name given", 0);
	}

	//construct a new student with passed name and IDnumber
	public Student(String name, long IDnumber){
	this.name = name;
	this.IDnumber = IDnumber;
	}

	//Override toString()
	public String toString(){
		return "Student [Student Name =" + getName() + ", Student ID
Number=" + getIDnumber() + " ]";
	}

	//creating get Name method
	public String getName( ){
		return name;
	}
	//creating setName method
	public void setName(String name ){
		this.name = name;
	}
	//creating getIDnumber method
	public long getIDnumber(){
		return IDnumber;
	}
	//create setIDnumber method
	public void setIDnumber(long IDnumber){
		this.IDnumber = IDnumber;
	}


}// close student class
```

```java
/*Tori Hume
 * ID 11486248
 * Assignment 2
 * Question 2
 * Part (II)
 */
import java.util.List; //Import List
import java.util.ArrayList;      //Import ArrayList

//start class StudentList. This is a tester class for the class Student.
public class StudentList {

	//Start main method
	public static void main(String[] args) {

		//Creats an arrayList to hold a collection of Student objects,
allows the addition of new members to a list
		List<Student> pupil= new ArrayList<Student>();

		//adds new instances of student to the list pupil
		pupil.add(new Student("John Doe", 12345678));
		pupil.add(new Student("Jane Doe", 12345677));
		pupil.add(new Student("Rachel Kelly", 12345555));
		pupil.add(new Student("Sean Burke", 12345666));

		//Prints to screen
		System.out.println("Output Student List");

		//uses an enhanced for loop to print the content of the array to the
screen.
		for (Student p: pupil){
			System.out.println(p.toString());
		}//close for loop

		//Removes the 1st instances from the collection
		pupil.remove(0);

		//Prints to screen
		System.out.println("\nOutput Student List After 1st Student
removed");

		//Uses and enhanced for loop to print the content of the array to
the screen (after the instance has been removed)
		for(Student p: pupil){
			System.out.println(p.toString());
		}//close for loop
	} //close main method

}//close class
```

Screen Shot:

```
<terminated> StudentList [Java Application] C:\Program Files\Java\jre1.8.0_101\bin\javaw.exe (5 Oct 2016, 18:30:44)
Output Student List
Student [Student Name =John Doe, Student ID Number=12345678 ]
Student [Student Name =Jane Doe, Student ID Number=12345677 ]
Student [Student Name =Rachel Kelly, Student ID Number=12345555 ]
Student [Student Name =Sean Burke, Student ID Number=12345666 ]

Output Student List After 1st Student removed
Student [Student Name =Jane Doe, Student ID Number=12345677 ]
Student [Student Name =Rachel Kelly, Student ID Number=12345555 ]
Student [Student Name =Sean Burke, Student ID Number=12345666 ]
```

UML for Class Student: