CT874

Assignment 4

H. Dip. Industry Stream

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Question 1

Code:

```
/*Tori Hume
 * ID: 11486248
 * Assignment 4
 * Question 1
 */

//Import Scanner
import java.util.Scanner;

//open class
public class TemperatureConverter {


		// open main method
	public static void main(String[] args) {
		//declare variables of type int
		int choice, cTemp, fTemp;

		// declare and creat a new instance of scanner.
		Scanner input = new Scanner(System.in);

		// display the options to the command window and set int entered by user to variable choice
		System.out.println("Please choose an option form 1-3: \n\t1. Fahrenheit to Celsius \n\t2. "
				+ "Celsius to Fahrenheit \n\t3. Exit \nYour Choice:");
		choice = input.nextInt();

		/*while loop created,
		 * If user chooses 3 the loop is exited and the program terminated.
		 * If the user chooses 1 the first if loop is entered which calls the Celsius method
		 * this converts a fahrenheit temp to celsius.
		 * If the user chooses 2 the else if loop is entered which calls the Fahrenheit method,
		 * this converts a celsius temp to fahrenheit.
		 * If the user enters a number out side the three options the else	loop called
		 * they are told the number is invalid and to enter a new number.
		 *
		 */
		while(choice !=3 )
		{
			if (choice==1){
				System.out.println("Please enter the Fahrenheit temperature you wish to
convert to Celsius");
				fTemp= input.nextInt();
				cTemp=Celsius(fTemp);
				System.out.println(fTemp + " Fahrenheit = " + cTemp + " Celsius.");
			}
			else if (choice==2){
				System.out.println("Please enter the Celsius temperature you wish to
convert to Fahrenheit");
				cTemp= input.nextInt();
				fTemp =Fahrenheit(cTemp);
				System.out.println(cTemp+" celsius = "+ fTemp + " Fahrenheit.");
			}
			else
```

```
                        {System.out.println("Invalid number entered, please enter either 1, 2, or 3.");
                        }

                        //Gets user to choose which method they would like to use next or if they would
like to exit program
                        System.out.println("\n\n\nPlease choose an option form 1-3: \n\t1. Fahrenheit to
Celsius "
                                        + "\n\t2. Celsius to Fahrenheit \n\t3. Exit \nYour Choice:");
                        choice = input.nextInt();
                }

                //inform user program has been terminated
                System.out.println("Program has been terminated!");
                //close scanner
                input.close();
        }

        //create a method to convert Celsius to Fahrenheit
        public static int Fahrenheit (int cTemp)
        {
                return  ((int)(((9.0/5.0)* cTemp)+32));
        }//close Fahrenheit method

        //create method to convert fahrenheit to celsius
        public static int Celsius(int fTemp)
        {
                return ((int)((5.0/9.0)*(fTemp-32)));

        }//close Celsius method

} //close class
```

Screen Shot:

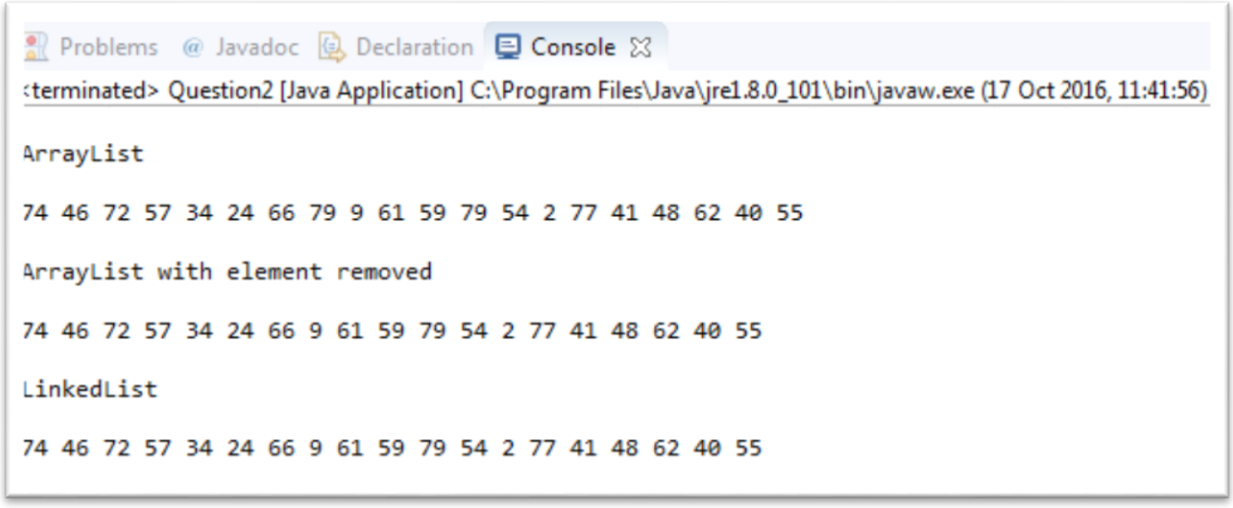
```
<terminated> TemperatureConverter [Java Application] C:\Program Files\Java\jre1.8.0_102\bin\javaw.exe (12 Oct 2016, 17:45:48)
Please choose an option form 1-3:
        1. Fahrenheit to Celsius
        2. Celsius to Fahrenheit
        3. Exit
Your Choice:
1
Please enter the Fahrenheit temperature you wish to convert to Celsius
82
82 Fahrenheit = 27 Celsius.


Please choose an option form 1-3:
        1. Fahrenheit to Celsius
        2. Celsius to Fahrenheit
        3. Exit
Your Choice:
2
Please enter the Celsius temperature you wish to convert to
42
42 celsius = 107 Fahrenheit.


Please choose an option form 1-3:
        1. Fahrenheit to Celsius
        2. Celsius to Fahrenheit
        3. Exit
Your Choice:
5
Invalid number entered, please enter either 1, 2, or 3.


Please choose an option form 1-3:
        1. Fahrenheit to Celsius
        2. Celsius to Fahrenheit
        3. Exit
Your Choice:
3
Program has been terminated!
```

Question 2

Code:

```
/*Tori Hume
 * ID: 11486248
 * Assignment 4
 * Question 2
 */
//Import required classes
import java.util.List;
import java.util.ArrayList;
import java.util.LinkedList;


public class Question2 {

	public static void main(String[] args) {
		//creating an Arraylist named myNumbers
		List<Integer> myNumbers = new ArrayList<Integer>();

		//for loop is used to add random numbers to the array filling from
the 0th entry to the 19th entry.
		for(int i=0; i < 20; i++){
			myNumbers.add((int)(Math.random()*100));// (int) casts from
double to int, AutoBoxing occurs here.
		}

		//Prints to screen
		System.out.println("\nArrayList\n");
		//an enhanced for loop is used to iterate through the array and
display the content to the screen
		for(Integer item : myNumbers){

			System.out.print(item + " "); //Auto Unboxing
		}
		//element removed
		myNumbers.remove(7);

		//array printed with element removed
		System.out.println("\n\nArrayList with element removed\n");

		for(Integer item : myNumbers){

			System.out.print(item + " "); //Auto Unboxing
		}

		//creating a LinkedList named myLinkedNumbers, it uses the numbers
populated in the myNumbers array
		List<Integer> myLinkedNumbers = new LinkedList<Integer>(myNumbers);

		System.out.println("\n\nLinkedList\n");
		//enhanced for loop used to print the contence to the screen.
		for (Integer item : myLinkedNumbers){

			System.out.print(item + " ");
		}
	}
}
```

Screen Shot:


Problems
Javadoc
Declaration
Console
<terminated> Question2 [Java Application] C:\Program Files\Java\jre1.8.0_101\bin\javaw.exe (17 Oct 2016, 11:41:56)
ArrayList
74 46 72 57 34 24 66 79 9 61 59 79 54 2 77 41 48 62 40 55
ArrayList with element removed
74 46 72 57 34 24 66 9 61 59 79 54 2 77 41 48 62 40 55
LinkedList
74 46 72 57 34 24 66 9 61 59 79 54 2 77 41 48 62 40 55