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**Lecturer Name: Seamus Hill**

**Question-1:**

//Student Name: Tianle Shu

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**package** nuig.question1;

**import** java.util.Scanner;

**public** **class** FahrenheitCelsius {

@SuppressWarnings({ "resource" })

**public** **static** **void** main(String[] args) {

// Scanner class, get user input, and it is found in the java.util package.

Scanner input = **new** Scanner(System.***in***);

// Declare a temperature for double type

// let it for get the temperature value from console

**double** temperature;

// while-loop

// Infinite loop

**while** (**true**) {

// tell user some details from console

System.***out***.println("1. Fahrenheit to Celsius");

System.***out***.println("2. Celsius to Fahrenheit");

System.***out***.println("3. Exit");

System.***out***.print("Choice: ");

// get the num from the console

**int** num = input.nextInt();

// if num value equal to 1

**if** (num == 1) {

// tell user input a Temperature to calculate

System.***out***.print("Enter Temperature: ");

// get the temperature value from the console

temperature = input.nextDouble();

// print out the result.

// and call the Celsisus() method to calculate, and also let the double type

// Cast to int type

System.***out***.println(

(**int**) temperature + " Fahrenheit is " + (**int**) *Celsius*(temperature) + " Celsius." + "\n");

} **else** **if** (num == 2) {

// tell user input a Temperature to calculate

System.***out***.print("Enter Temperature: ");

// get the temperature value from the console

temperature = input.nextDouble();

// print out the result.

// and call the Celsisus() method to calculate, and also let the double type

// Cast to int type

System.***out***.println(

(**int**) temperature + " Celsius is " + (**int**) *Fahrenheit*(temperature) + " Fahrenheit. \n");

} **else** **if** (num == 3) {

// if num value = 3 then print a line

System.***out***.println("Program Terminated");

// and break out the while loop

**break**;

}

} // end while

}// emd main method

//create a private static method calls Celsius

//and Returns the result of the formula calculation.

**private** **static** **double** Celsius(**double** fahrenheit) {

**return** 5.0 / 9.0 \* (fahrenheit - 32);

}//end Celsius method

//create a private static method calls Fahrenheit

//and Returns the result of the formula calculation.

**private** **static** **double** Fahrenheit(**double** celsius) {

**return** 9.0 / 5.0 \* celsius + 32;

}// end Fahrenheit method

} // end class

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描述已自动生成

**Question-2:**

//Student Name: Tianle Shu

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**package** nuig.question2;

**import** java.util.ArrayList;

**import** java.util.LinkedList;

**import** java.util.List;

**public** **class** StoresInteger {

**public** **static** **void** main(String[] args) {

// create a new ArrayList object, Integer is element type

List<Integer> list = **new** ArrayList<Integer>();

**for** (**int** i = 0; i < 10; i++) {

// Declare a num for int type

// Math.random() returns a number between zero and one.

// Reference: https://stackoverflow.com/questions/7961788/math-random-explanation

//Between one and hundred, such as Math.random() \* 100

**int** num = (**int**) (Math.*random*() \* 100);

// Autoboxing and populate the ArrayList using list.add() method.

list.add(num);

// Wrapper

// list.add(Integer.valueOf(i));

}

// tell user output the Arraylist ouput in the console

System.***out***.println("------------ArrayList output------------");

// call the PrintOut method for print out result

*PrintOut*(list);

// convert the ArrayList to a LinkedList

List<Integer> linkedList = **new** LinkedList<>(list);

// tell user output the Linkedlist ouput in the console

System.***out***.println("------------LinkedList output------------");

// re-run the code

// call the PrintOut method for print out result

*PrintOut*(linkedList);

}// end main method

// create private static method calls PrintOut

// and hava a prama (List<Integer list)

// for output result

**private** **static** **void** PrintOut(List<Integer> list) {

// Declare a x for int type

// will use it in the for loop

**int** x = 0;

// Declare a s for chat type

// will use s(",") Separate each element in the list.

**char** s = ',';

// use enhanced for loop

**for** (Integer i : list) {

// if x value is list size - 1

**if** (x++ == list.size() - 1) {

// s change to "."

// that means let after last element in the list use "." not ","

s = '.';

} **else** {

s = ',';

}

// output every elelment

System.***out***.print("[ " + i + " ]" + s);

} // end for loop

System.***out***.println("\n");

// Remove an element from the array

// we remove the first element in the list

list.remove(0);

System.***out***.println("Remove The first element: ");

// let x = 0 again

// because we need print out the result

// after use the remove function

x = 0;

// use enhanced for loop

**for** (Integer i : list) {

**if** (x++ == list.size() - 1) {

s = '.';

} **else** {

s = ',';

}

System.***out***.print("[ " + i + " ]" + s);

} // end for loop

System.***out***.println("\n");

}// end PrintOut method

}// end class

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