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# Question-1:

```java
//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
```
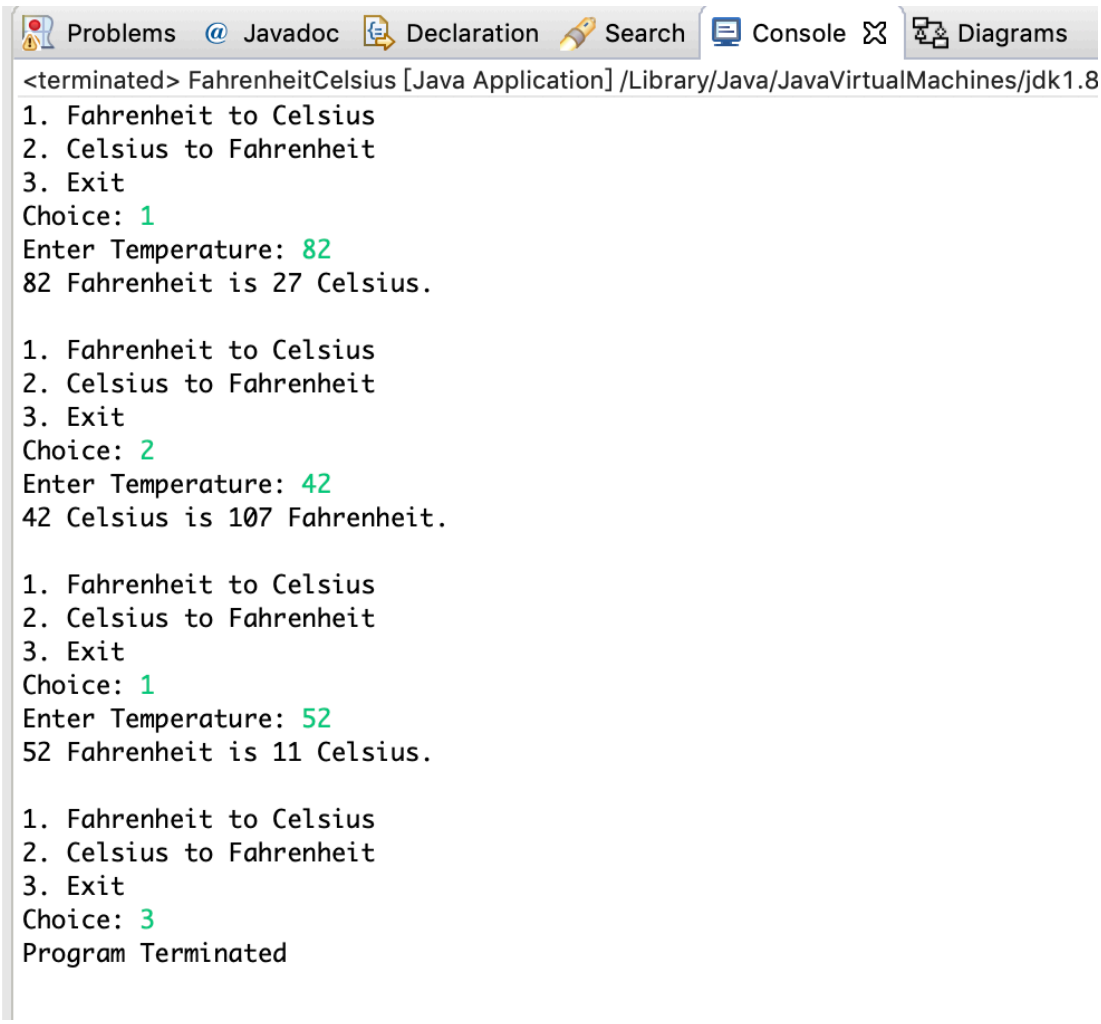

```
            System.out.println(
                  (int) temperature + " Fahrenheit is " +
(int) Celsius(temperature) + " Celsius." + "\n");
         } else if (num == 2) {
            // tell user input a Temperature to calculate
            System.out.print("Enter Temperature: ");
            // 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
```


Problems
Javadoc
Declaration
Search
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Diagrams
<terminated> FahrenheitCelsius [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8
1. Fahrenheit to Celsius
2. Celsius to Fahrenheit
3. Exit
Choice: 1
Enter Temperature: 82
82 Fahrenheit is 27 Celsius.
1. Fahrenheit to Celsius
2. Celsius to Fahrenheit
3. Exit
Choice: 2
Enter Temperature: 42
42 Celsius is 107 Fahrenheit.
1. Fahrenheit to Celsius
2. Celsius to Fahrenheit
3. Exit
Choice: 1
Enter Temperature: 52
52 Fahrenheit is 11 Celsius.
1. Fahrenheit to Celsius
2. Celsius to Fahrenheit
3. Exit
Choice: 3
Program Terminated

# Question-2:

```
//Student Name: Tianle Shu
//Student Id: 19232619
//Lecturer: Seamus Hill
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
```