**Code:**

import java.util.Scanner;

class Main {

public static void main(String[] args) {

char menuInput;

char response;

double fahrenheit;

double celsius;

System.out.println("\*\*\* Welcome to the Java Temperature Calculator \*\*\*");

do {

System.out.println("Please select one of the options below:");

System.out.println();

System.out.println("[1] Celsius > Fahrenheit");

System.out.println("[2] Fahrenheit > Celsius");

System.out.println("[3] Exit Program");

Scanner scanner = new Scanner(System.in);

menuInput = scanner.next().charAt(0);

switch(menuInput) {

case '1':

System.out.println("Please enter the temperature in Celsius:");

celsius = scanner.nextDouble();

while (celsius < -273.15) {

System.out.println("Error: Input value cannot be below absolute zero (−273.15C / −459.67F).");

System.out.println("Please enter the Celsius value:");

celsius = scanner.nextDouble();

}

celToFah(celsius);

break;

case '2':

System.out.println("Please enter the temperature in Fahrenheit");

fahrenheit = scanner.nextDouble();

while (fahrenheit < -459.67F) {

System.out.println("Error: Input value cannot be below absolute zero (−273.15C / −459.67F).");

System.out.println("Please enter the Fahrenheit value:");

fahrenheit = scanner.nextDouble();

}

fahToCel(fahrenheit);

break;

case '3':

System.out.println("Closing program...");

break;

default:

System.out.println("Please select a valid input.");

}

System.out.println();

System.out.println("Would you like to enter another value? (Y) / (N)");

response = scanner.next().charAt(0);

if (response == 'Y' || response == 'y') {

System.out.println();

} else {

System.out.println("Closing program...");

}

} while (response == 'Y' || response == 'y');

}

static void celToFah(double celsiusIn) {

double fahrenheit;

fahrenheit = ((9 \* celsiusIn) / 5) + 32;

System.out.println(celsiusIn + " degrees Celsius is " + fahrenheit + " degrees Fahrenheit.");

}

static void fahToCel(double fahrenheitIn) {

double celsius;

celsius = (5 \* (fahrenheitIn - 32)) / 9;

System.out.println(fahrenheitIn + " degrees Fahrenheit is " + celsius + " degrees Celsius.");

}

}

**Explanation:**

**Note:** The program is a generic switch case menu, of which I have produced before (See Gun Runners V2). This explanation will therefore focus on the use of methods within this program.

– Line #56 creates the method ‘celToFah’, used to convert Celsius to Fahrenheit. It defines the double variable ‘celsiusIn’. ‘celsiusIn’ is a placeholder variable, used to represent the real number fed into the method on Line #27.

– Line #57 defines the double variable ‘fahrenheit’.

– Line #58 converts the inputted Celsius value to Fahrenheit, then sets ‘fahrenheit’ to this number.

– Line #59 prints the value.

– Line #62 creates the method ‘fahToCel’, used to convert Fahrenheit to Celsius. It defines the double variable ‘fahrenheitIn’. ‘fahrenheitIn’ is a placeholder variable, used to represent the real number fed into the method on Line #37.

– Line #63 defines the double variable ‘celsius’.

– Line #64 converts the inputted Fahrenheit value to Celsius, then sets ‘celsius’ to this number.

– Line #65 prints the value.