CS 215 – Spring 2021
Lab 2

Learning Objectives:

- Use of decisions to solve a programming problem
- User input and output

General Description:

Write a program that asks the user to select a chemical compound from the following list, printing the selection number and compound name (temperatures used later):

Selection	Compound	Freezing Temp	Boiling Temp
1	Water	0	100
2	Mercury	-39	357
3	Octane	-57	126
4	Ethanol	-115	78

The program should determine and print the name of the selected compound. When a number that is not 1 to 4 is entered, print an error message `Invalid selection, assuming 1 entered.` and assume the user selected 1.

The program then asks the user to enter a temperature. It determines and prints the *state* (solid, liquid, gas) of the compound selected at the entered temperature using a message in the format:

compound name at *temperature* C is in a *state* state.

Coding Specifications:

- No arrays or loops allowed.
- "Naked Constants" may be used for selecting the compound; however, constants should be declared and used for the freezing/boiling points of compounds.
- We will assume the user enters only integer values for the selection and temperature.

Sample Executions:

```
Compound List:
1. Water
2. Mercury
3. Octane
4. Ethanol
Enter selection: 0
Invalid selection, assuming 1 entered.
Selected compound: Water
Enter temperature (C): 100
Water at a temperature of 100 C is in a Gas state.
```

```
Compound List:
1. Water
2. Mercury
3. Octane
4. Ethanol
Enter selection: 1
Selected compound: Water
Enter temperature (C): 0
Water at a temperature of 0 C is in a Solid state.
```

```
Compound List:
1. Water
2. Mercury
3. Octane
4. Ethanol
Enter selection: 4
Selected compound: Ethanol
Enter temperature (C): 33
Ethanol at a temperature of 33 C is in a Liquid state.
```

```
Compound List:
1. Water
2. Mercury
3. Octane
4. Ethanol
Enter selection: 2
Selected compound: Mercury
Enter temperature (C): 16
Mercury at a temperature of 16 C is in a Liquid state.
```

Rubrics:

- comment box at top with student name
- constants declared before main()
- displays menu and asks for selection
- assumes 1 was selected when a number other than 1-4 is entered and prints message
- prints message about which compound was selected
- asks the user the enter the temperature
- determines the correct state using the declared constants, compound, and temperature.
- prints the final message in the correct format with the correct results.

Submission:

After demonstrating to the TA, submit your corrected .cpp file in Canvas.