Project Exercises:

The following 2 exercises must be completed as part of the software development 1 project, as outlined in Java and GitHub Project.pdf:

"On week 24, just before the Easter holidays, the students will be given 2 java exercises to complete during the Easter holidays in their own time. The Index.java file will need to be updated by the students to include menu options to run the java code for both these exercises."

Exercise 1:

Write a program, Convert.java, which does the following:

a. Implements an integer method named **celsius** that returns the Celsius equivalent of a Fahrenheit temperature, using the calculation:

celsius = 5.0 / 9.0 * (fahrenheit - 32);

b. Implements an integer method named **fahrenheit** that returns the Fahrenheit equivalent of a Celsius temperature, using the calculation:

fahrenheit = 9.0 / 5.0 * celsius + 32;

c. Uses the methods created in part a and b to write an application that enables the user either enter a Fahrenheit temperature and display the Celsius equivalent or to enter Celsius temperature and display the Fahrenheit equivalent.

An example output from this program is as follows:

```
1. Fahrenheit to Celsius
2. Celsius to Fahrenheit
3. Exit
Choice: 1
Enter temperature: 78
78 Fahrenheit is 25 Celsius

1. Fahrenheit to Celsius
2. Celsius to Fahrenheit
3. Exit
Choice: 2
Enter temperature: 25
25 Celsius is 77 Fahrenheit

1. Fahrenheit to Celsius
2. Celsius to Fahrenheit
3. Exit
Choice: 3
Press any key to continue . . .
```

Note: Document the test cases you used to confirm this program works as specified by the requirements.

Exercise 2

Write a program, Search.java, which implements the multidimensional array specified in array.txt on moodle (included in the same section as this pdf). The program should prompt the user to enter a search term and use this search term to find a match or matches in the array. All matches should be printed out to the screen along with a count of the number of matches found.

Hint: Refer to exercise 7 in week 24 – Java Lab 1.pdf as an example of how to search a multidimensional array.

An example output from this program is as follows:

Note: Document the test cases you used to confirm this program works as specified by the requirements.