COMP503/ENSE502/ENSE602: Week 1 – Exercises

Exercise 1: Print a message

Write an application that reads in a line of text from the console and stores it in a local variable of type String.

Print the message in the console within quotation marks, exactly as shown below.

Select a suitable name for the class storing your source code.

Example output:

```
What is the message?
Hello World

The message is “Hello World”.
```

```
What is the message?
Football

The message is “Football”.
```

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Exercise 2: Three number average

Write an application that reads three integers from the user and prints their average to the console

Select a suitable name for the class storing your source code.

Example output:

```
Enter the first number
100
Enter the second number
391
Enter the third number
900

The average of the numbers is: 463.6666666666667
```

```
Enter the first number
83
Enter the second number
-9
Enter the third number
78

The average of the numbers is: 50.666666666666664
```

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Exercise 3: Personal data

Write an application that reads your name, your birthday, your hobbies, your favorite book, and your favorite film, and prints them on separate lines to the console

Label each piece of information in the output.

Select a suitable name for the class storing your source code

Example output:

```
Name: Robin Banks
Birthday: July 12th
Interests: Sports, Programming, Music
Favorite book: The Life of Pi
Favorite film: Citizen Kane
```

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Exercise 4: Division

Complete the class **Division** with a main method that reads as input two integer values representing the numerator and denominator of a fraction, respectively. Your output should contain the equivalent decimal representation of the fraction and be similar to the following:

Example output:

```
Please enter the numerator
1
Please enter the denominator
2
The input fraction is: 1/2
The decimal equivalence is: 0.5
```

```
Please enter the numerator
10
Please enter the denominator
5
The input fraction is: 10/5
The decimal equivalence is: 2.0
```

```
Please enter the numerator
5
Please enter the denominator
0
The input fraction is: 5/0
This quantity is undefined
```

Note: to convert an integer value to its floating point equivalence use casting:

```
float aFloat = (float) anInteger;
```

Ensure that you source code adheres to documentation standards and is appropriately formatted.

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Exercise 5: Convert miles to kilometers

Complete the class **ConvertMilesToKMs** with a main method that converts miles to kilometers. Note that one mile equals 1.60935 kilometers. Your code should read the miles value from the user as a floating point. If the input value is less than 0 then print an error message.

Example output:

```
Enter the number of miles:
100
The number of kms is: 160.935
```

```
Enter the number of miles:
0
The number of kms is: 0.0
```

```
Enter the number of miles:
-1
Please enter a value greater than 0!
```

Ensure that you source code adheres to documentation standards and is appropriately formatted.

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Exercise 6: Computing the amount of fuel used

Write an application that asks the user to enter the number of miles travelled and the gallons of fuel used. Select a suitable name for the class storing your source code.

Your application will compute and print the fuel efficiency (miles to the gallon).

Example output:

```
Enter the number of miles:
369
Enter the gallons of fuel used:
12.4

Miles Per Gallon: 29.758064516129032
```

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Exercise 7: Time duration

Write an application that reads values representing duration of time given in hours, minutes and seconds, and then prints the equivalent total number of seconds.

Select a suitable name for the class storing your source code

Example output:

```
Enter the number of hours
1
Enter the number of minutes
28
Enter the number of seconds
42

The total number of seconds is 5322.
```

```
Enter the number of hours
3
Enter the number of minutes
12
Enter the number of seconds
60

The total number of seconds is 11580.
```

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Exercise 8: How many seconds?

Write an application that reads in a value representing a number of seconds, and then prints the equivalent amount of time as a combination of hours, minutes and seconds. Select a suitable name for the class storing your source code.

Example output:

```
Enter the number of seconds:
9999

9999 seconds is equivalent to
2 hours
46 minutes
39 seconds
```

```
Enter the number of seconds:
10

10 seconds is equivalent to
0 hours
0 minutes
10 seconds
```

```
Enter the number of seconds:
1234

1234 seconds is equivalent to
0 hours
20 minutes
34 seconds
```

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Exercise 9: Fahrenheit to Celsius

Complete the class **FahrenheitToCelcius** with a main method that computes the Celsius equivalent of an input Fahrenheit. Your program should use a Scanner object to ask the user to input the Fahrenheit value from the console and output both the Celsius and Fahrenheit values.

Example output:

```
Please enter the temperature in Fahrenheit:
212
The temperature 212F is 100C
```

Ensure that you source code adheres to documentation standards and is appropriately formatted.