CSC061 Lab Class 5 — Monday 26/10/2020

☐ Task 5.1

Write a program which asks the user for the wind speed in miles per hour and converts it to text according to the following table (which is a simplified version of the Modern Beaufort Scale):

Wind Speed	Output
< 1 mph	Calm
>= 1 and < 12 mph	Gentle breeze
>= 12 and < 30 mph	Strong breeze
>= 30 and < 46 mph	Gale
>= 46 and < 63 mph	Storm
>= 63 and < 74 mph	Violent storm
>= 74 mph	Hurricane force

☐ Task 5.2

Write a program which prompts and allows the user to enter a date in the format dd/mm/yyyy (i.e., a single string). The program should then print this date in a more human readable format. For example, the date 05/04/2014 should be printed as "5 April 2014".

For this task you will need to pull out the substrings (slices) representing the day, month and year components. You can then convert the month component to an integer. Once it's an integer you can test if it's equal to 1 for January, 2 for February, 3 for March, etc.

Hint: If you convert the string "02" to an integer, then print it (the integer), it will be printed as `2` (no leading zero).

☐ Task 5.3

Write a program which prompts and allows the user to enter a time in the 24 hour format hh:mm:ss (i.e., a single string). The program should pull out and store the hours, minutes and seconds as three separate integer variables. The program should then increment the seconds by 1. The program should properly deal with the seconds becoming 60, i.e., the seconds should be reset to zero and the minutes incremented by one. The program should similarly deal with the minutes becoming 60 and the hours becoming 24. Finally, the program should print the new time in the standard format hh:mm:ss.

For example, if the time is 09:59:59 and 1 second is added then the output will be 10:00:00.

Hint: increment the seconds first, then see if they have reached 60, if so they should be reset to zero and 1 added to the minutes. Now check if the minutes have reached 60, if so ...

Hint: A convenient way to print the hours, minutes and seconds is with the format specifier `%02d`. This will ensure your numbers are printed as two characters in length with a leading zero (if needed).

Note: You are not writing a stop watch or timer. You only need to add a single second.

Please turn over.

☐ Challenge Task 5.4

Write a program which asks the user for a date in the format dd/mm/yyyy. The program should print the date of the next day. Remember not all months have the same number of days. Also watch out for leap years!

Warning: This is a **very challenging** task but quite do-able!