# ML LAB WEEK-01 EXERCISES – B2 BATCH

# 04-SEP-2021

1. Write a program that reads a positive integer, *n*, from the user and then displays the sum of all of the integers from 1 to *n*. The sum of the first *n* positive integers can be computed using the formula: sum = n * (n + 1)/2.

2. Many people think about their height in feet and inches, even in some countries that primarily use the metric system. Write a program that reads a number of feet from the user, followed by a number of inches. Once these values are read, your program should compute and display the equivalent number of centimeters.
Hint: One foot is 12 inches. One inch is 2.54 centimeters.

3. It is commonly said that one human year is equivalent to 7 dog years. However this simple conversion fails to recognize that dogs reach adulthood in approximately two years. As a result, some people believe that it is better to count each of the first two human years as 10.5 dog years, and then count each additional human year as 4 dog years.
Write a program that implements the conversion from human years to dog years described in the previous paragraph. Ensure that your program works correctly for conversions of less than two human years and for conversions of two or more human years. Your program should display an appropriate error message if the user enters a negative number.

4. The length of a month varies from 28 to 31 days. In this exercise you will create a program that reads the name of a month from the user as a string. Then your program should display the number of days in that month. Display "28 or 29 days" for February so that leap years are addressed.

5. The marks obtained by 10 students in a class test were as follows:
38, 41, 36, 31, 45, 38, 27, 32, 29, 39
Find:
(a) The mean of their marks
(b) The mean of their marks when the marks of each student are increased by 2
(c) The mean of their marks when one mark is deducted from marks of each student
(d) The mean of their marks when the marks of each student halved

6. In a book of 300 pages, the distribution of misprints is shown below:

| **#of misprints per page** | **0** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|

| #of pages | 154 | 95 | 36 | 7 | 6 | 2 |
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Find the average number of misprints per page.

7. A string is a palindrome if it is identical forward and backward. For example “anna”, “civic”, “level” and “hannah” are all examples of palindromic words. Write a program that reads a string from the user and uses a loop to determines whether or not it is a palindrome. Display the result, including a meaningful output message.

8. Write a program that reads integers from the user and stores them in a list. Your program should continue reading values until the user enters 0. Then it should display all of the values entered by the user (except for the 0) in order from smallest to largest, with one value appearing on each line. Use either the sort method or the sorted function to sort the list.