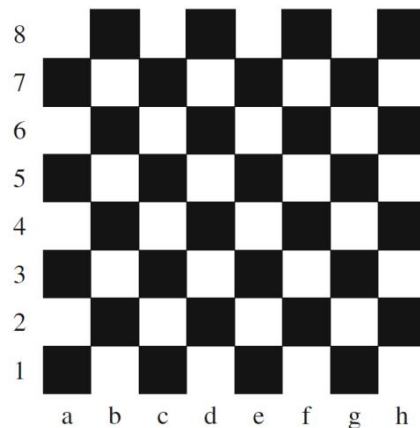


Machie Learning Lab
IV Sem, DSE

Week - 01

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: $\text{sum} = n * (n + 1)/2$.
2. 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.
 - a) Write a program that implements the conversion from human years to dog years described in the previous paragraph.
 - b) Ensure that your program works correctly for conversions of less than two human years and for conversions of two or more human years.
 - c) 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 the following:
 - a) The mean of their marks
 - b) The mean of their marks when marks of each student are increased by 2
 - c) Mean of their marks when 1 mark is deducted from marks of each student
 - d) The mean of their marks when the marks of each student halved

6. Positions on a chess board are identified by a letter and a number. The letter identifies the column, while the number identifies the row, as shown in the figure:



Write a program that reads a position from the user. Determine the color of the square.

For example, if the user enters a1 then your program should report that the square is black. If the user enters d5 then your program should report that the square is white.

Your program may assume that a valid position will always be entered.

7. Write a python program to generate 20 random integers. Calculate the 5-number summary table for these data.
- a) Also calculate the IQR.
 - b) Check whether there are any outliers in the data.

* * *