

Lab 9: Programs on strings read from the CSV files &
Lab 10: Programs on Recursion and callbacks

You are given a CSV file called "Articles.csv" that contains news articles' information in rows, including the article, date, heading, and news type. Use this CSV file to solve all the CSV files related questions. Write Python programs for the following questions to get the expected outputs as provided.

- 1) **Problem Statement:** For the given CSV file, write programs to:
 - a) Write all the rows which have "CAPE TOWN" in the headings onto a csv file named "Output.csv."
 - b) Open the same file in append, append those rows which have date > 2/1/2016.

Output:

1	Article	Date	Heading	NewsType
2	Cape Town: Ben Stokes	01-03-2016	England d	sports
3	CAPE TOWN: Ben Stokes	01-03-2016	Stokes bat	sports
4	CAPE TOWN: Jonny Bairstow	01-04-2016	Tearful Ba	sports
5	CAPE TOWN: England	01-05-2016	Bavumas	sports
6	CAPE TOWN: Captain	01-05-2016	Amla lead	sports
7	CAPE TOWN: Captain	01-04-2016	Amla mak	sports
8	London: Pakistan Yasir Shah	16-07-2016	Yasir stars	sports
9	LONDON: Yasir Shah	16-07-2016	Yasir Shah	sports
10	KARACHI: State Bank of	30-07-2016	State Bank	business
11	LONDON: Pakistan captain	16-07-2016	Misbah ou	sports
12	LONDON: Pakistan Yasir	16-07-2016	Yasir Shah	sports

- 2) **Problem Statement:** Write a Python program that takes an integer 'n' as input and determines whether it is a power of 2. The program should return True if the input number is a power of 2 or False otherwise using recursion.

Sample Input and Output:

- 1) Sample Input 1: 16
Sample Output 1: True
- 2) Sample Input 2: 18
Sample Output 2: False

- 3) **Problem Statement:** Write a Python program that takes an integer as input 'n' and counts the number of digits in the binary representation of 'n' using recursion.

Sample Input and Output:

- 1) Sample Input 1: 13
Sample Output 1: 4
- 2) Sample Input 2: 6
Sample Output 2: 3

4) **Bonus Question**

Problem Statement: Write a program to read a csv file and filter out the rows which belong to News Type "sports" and were published between March 2016 and April 2016. Write these rows on to a new csv file named "sports.csv", sorted in ascending order by the published date.

Output:

1	Article	Date	Heading	NewsType
2	Cape Town: Ben Stokes	01-03-2016	England d	sports
3	CAPE TOWN: Ben Stokes	01-03-2016	Stokes bat	sports
4	SYDNEY: Australia sp	01-03-2016	Australias	sports
5	SYDNEY: Carlos Brathwaite	01-04-2016	Brathwaite	sports
6	CAPE TOWN: Jonny Bairstow	01-04-2016	Tearful Ba	sports
7	CAPE TOWN: Captain Amla	01-04-2016	Amla mak	sports
