

7. Storms that affect Scotland are named. The name, region affected, month and year of each storm from each of the five years 2020–2024 is stored in a csv file.

Sample data from this file is shown below.

...

Robyn, North East, November, 2020

Brendan, North West, January, 2021

Ciara, South, February, 2021

Dennis, South East, September, 2021

...

A program is used to:

1. read data from file into parallel 1D arrays
2. ask for a year then count and display the number of autumn storms in that year
3. count the number of storms for each year
4. display the year with the most storms.

Autumn months are September, October and November.

- (a) Complete the table below to show the missing data flow for Steps 2, 3 and 4 of this program.

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Step	IN	OUT
1		name(), region(), month(), year()
2		
3		numStormsYear()
4		

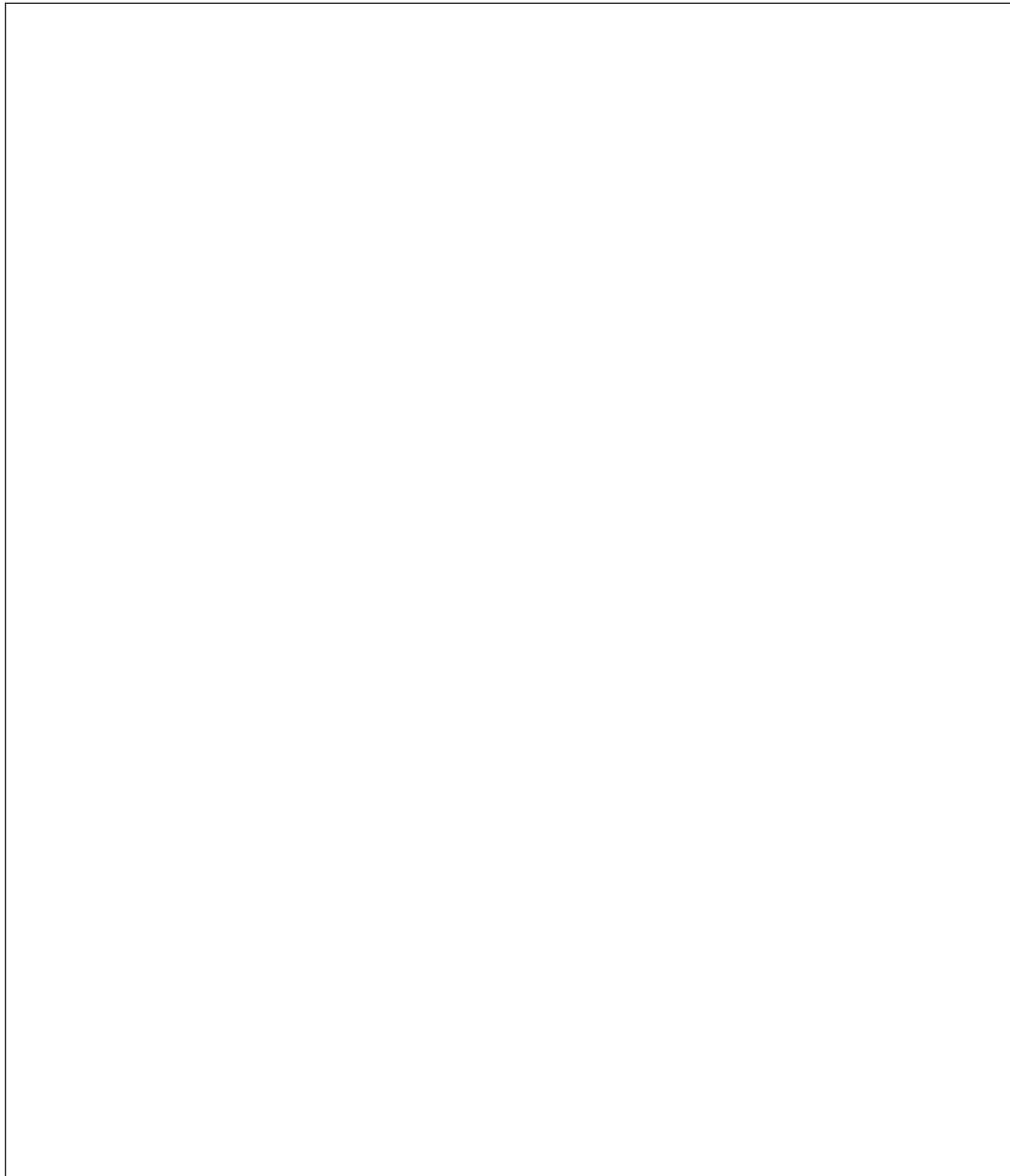


\* X 8 1 6 7 6 0 1 0 6 \*

7. (continued)

(b) Using a design technique of your choice, design an algorithm for Step 2.

4



[Turn over



7. (continued)

- (c) The program is to be extended to allow a user to enter a possible name for a future storm. Storm names should be unique.

The program should check if the name entered is already present in the array name. A suitable message should be displayed to tell the user if the name is present or not.

Using a programming language of your choice, write the code for this new feature.

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