2 A program reads data from a text file, splits the data depending on its content and stores the separated data into different files.

The text file `TheData.txt` contains 72 lines of data. Each line of data has an integer number and a string colour that are separated by a comma. For example, the first line in the file is:

```
10,red
```

The integer is `10` and the string is `"red"`

The file contains six different colours: red, green, blue, orange, yellow, pink.

(a) The function `ReadData()`:

- prompts the user to enter a filename and reads this filename from the user
- opens the file and reads each line of data into a 1D array
- returns the populated 1D array.

The function needs to work for a file that contains an unknown number of lines.

Write program code for `ReadData()`

Save your program as **Question2_J25**.

Copy and paste the program code into part **2(a)** in the evidence document.

[7]

(b) The procedure `SplitData()` takes a 1D string array as a parameter with the identifier `DataArray`

The procedure declares six 1D arrays: one array for each colour that appears in the file (red, green, blue, orange, yellow, pink).

The procedure accesses each string in `DataArray`. The data in each string is split into the integer and the colour. The integer is stored in the array that matches the colour.

For example, the first string in `DataArray` has the integer `10` and the colour `red`, so the integer `10` is stored in the array for the colour red.

Write program code for `SplitData()`

Save your program.

Copy and paste the program code into part **2(b)** in the evidence document.

[6]

(c) The procedure `StoreData()`:

- takes **two** parameters: a 1D array `DataToStore` and a filename
- opens the text file with the filename that is passed as a parameter
- appends each item of data from `DataToStore` to a new line in the text file
- uses exception handling when opening and writing data to the text file.

Write program code for `StoreData()`

Save your program.

Copy and paste the program code into part **2(c)** in the evidence document.

[5]

(d) Each of the six colours has a blank text file where the numbers will be stored. The names of these six text files are:

- `Blue.txt`
- `Green.txt`
- `Orange.txt`
- `Pink.txt`
- `Red.txt`
- `Yellow.txt`

The procedure `SplitData()` needs amending to call `StoreData()` **six** times, with each of the **six** colour arrays and the name of the text file that corresponds to that colour.

For example, `StoreData()` will be called with the red array and the file name `"Red.txt"`

Write program code to amend `SplitData()`

Save your program.

Copy and paste the program code into part **2(d)** in the evidence document.

[2]

(e) The main program calls `ReadData()` and then `SplitData()`

(i) Write program code for the main program.

Save your program.

Copy and paste the program code into part **2(e)(i)** in the evidence document.

[3]

(ii) Test your program. Input the text `"TheData.txt"` when prompted.

Take a screenshot of the output(s) and a screenshot showing the content of the file that stores the red numbers.

Save your program.

Copy and paste the screenshot(s) into part **2(e)(ii)** in the evidence document.

[2]