(c) Each airport has a three letter code. The airline's system stores the airports and corresponding airport codes:

Code	Name
BCN	Barcelona International
DUB	Dublin
LIS	Lisbon
LHR	London Heathrow
CDG	Paris, Charles De Gaulle
PRG	Prague
RKV	Reykjavik
FCO	Rome, Fiumicino

In a programming language or pseudocode of your choice write a program that takes in an airport code and finds and displays the airport name. You can assume a 2D array called airports has already been declared and populated with the data above. There is no need to validate the input and you can assume that the user will only enter a code that exists in the array.

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[6]

2 Consider the following algorithm in Fig.2, expressed in pseudocode, as a function S:

```
function S(A[0..N-1], value, low, high)

     if (high < low)
           return error_message
           mid = (low + high) / 2

     if (A[mid] > value)
            return S(A, value, low, mid-1)

     elseif (A[mid] < value)
           return S(A, value, mid+1, high)

     else
           return mid

endfunction
```

Fig.2

(a) State the name of the algorithm implemented in Fig.2.

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[1]

(b) Describe the purpose of this algorithm.

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[2]

(c) Parameters are passed to this function. Complete the following table to identify these parameters and the purpose of each.

Parameter name	**Purpose**

[8]

(d) (i) Describe what is meant by recursion.

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[2]

(ii) Identify **one** example of where recursion occurs in this algorithm.

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[1]

(e) Rewrite the algorithm in Fig.2 without using recursion.

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[8]

(f) Explain how the algorithm in Fig.2 is an example of a divide and conquer approach.

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[3]