10. A check digit is the number at the end of a series of characters that can confirm that something is correct.

A program is to be written to add a check digit to a user's password. The password is input and then the program totals the ASCII values of all the characters, divides the total by 11 and calculates the remainder. This remainder is then attached to the original password as a check digit. For example, for the password 'Fox':

Character	ASCII Value
F	70
o	111
x	120
Total	301
	301/11 = 27 remainder 4

The updated password is 'Fox4'.

(a) State one boundary for this program. **1**

(b) Using a recognised design technique, design an algorithm that would create the updated password and store it in a file. **5**

10. **(continued)**

(c) When implemented, the program will be modular.

Describe two benefits of implementing modular code.

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