

**Released June 2011  
For Assessment Submission  
January 2012 and June 2012  
January 2013 and June 2013**

**GCSE COMPUTING**

**A453**      Programming Project

**CONTROLLED ASSESSMENT MATERIAL 4**

This assessment may be periodically reviewed. Please check on OCR Interchange that you have the Controlled Assessment material valid for the appropriate assessment session.



**INSTRUCTIONS TO TEACHERS**

- Please refer to Section 4 of the GCSE Computing specification for instructions on completing this controlled assessment task.
- Each task can be contextualised appropriately to suit facilities available in your centre.
- The marking criteria should be available to candidates whilst completing the tasks.
- The quality of written communication will be assessed in the testing section.
- The total number of marks for this unit is **45**.

**INFORMATION FOR CANDIDATES**

- This document consists of **4** pages. Any blank pages are indicated.

**Teachers are responsible for ensuring that assessment is carried out against the Controlled Assessment set for the relevant examination series (detailed above).**

**Assessment evidence produced that does not reflect the relevant examination series will not be accepted.**

### **This assessment consists of three tasks.**

Candidates should complete all tasks.

The tasks are set so as to enable all the techniques identified in the specification to be demonstrated in their solution. The tasks provide opportunities to demonstrate a range of skills and all three tasks contribute to the overall mark awarded for this assessment. Marks are awarded for using the appropriate skills and techniques effectively and efficiently to produce a solution to these three tasks. Not all techniques will be required for each of the subtasks.

#### **Task 1 Validating an e-mail address**

When entering email addresses systems often use a simple form of validation to ensure that the address entered is possible.

For the purposes of this task an email address must:

- Start with a string of alphanumeric characters
- followed by the @ symbol
- another string of alphanumeric characters
- followed by a “ . ”
- then a string of alphanumeric characters.

Eg a@b.c and ab23@f45.d3 are both valid

but @bc.d and 123.c@cxb are not valid

Design code and test a program to:

- Accept an input string and check its validity.
- Output VALID or INVALID accordingly.

#### **Task 2 Retrieving and checking a password**

When people register on a theatre website, the email address is used as the login name and the user is requested to enter a password to use with the account.

A user's details include: email address, password, first name, surname and address.

These are stored in a csv file.

When a user logs in, they enter their email address and must enter their password before accessing their account details.

Design, code, test and evaluate a program that:

- asks for an email address and password
- searches the file for the email address
- if the password is correct it displays the customer details
- it displays a suitable error message if the password is incorrect.

A data file is supplied for use with this task but you may create your own if you prefer.

### Task 3 Booking a group of seats next to each other in a row

A system used for booking seats in a theatre will check for a continuous block of seats on any row so that a group of people can sit together.

Here is an example of a small block of seats with 5 rows, labelled A to E, with 10 seats per row numbered 1–10.

E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
A1	A2	A3	A4	A5	A6	A7	A8	A9	A10

Design, code, test and evaluate a program to search through the available seats to locate a block of seats in a specified row for groups of up to 6 people.

The input will be:

- the number of people in the group up to a maximum of 6
- the desired row, A–E.

The output should:

- confirm if there is a block of seats available in the chosen row
- the corresponding seat numbers in the format:
  - availability, number of seats ‘seat number – seat number’
  - (eg “Seats available for 5 people B2–B6”).
- or should output a message that indicates:
  - that there is no block of that size available
  - the maximum block size available.

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