

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

GCSE COMPUTING

A453 Programming Project

CONTROLLED ASSESSMENT MATERIAL 2

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**.
- A datafile is also available to use with this assessment.

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 scenario consists of three tasks.

Candidates should complete all tasks and provide evidence to meet all the marking criteria.

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 Currency Converter.

Create a simple currency exchange calculator to convert between four major currencies, Pound sterling, Euro, US Dollar and Japanese Yen.

- The system should be able to have exchange rates changed regularly by the user.
- The user should be able to enter an amount, select the chosen currency for this and the currency into which this should be converted.
- The figure shown should be displayed to two decimal places, for example to the nearest cent in US Dollars.

Task 2 Address Book.

A data file will be supplied for this task.

A simple address book system holds names, addresses and telephone numbers for friends and family and business contacts. The system stores:

- a surname and first name
- two lines of the address and a post code
- a telephone number
- date of birth
- email address.

Create a program to search this data file:

- by surname to retrieve and display the details for a contact
- by date of birth to retrieve and display all contacts with a birthday in a particular month.

Task 3 ISBN

ISBN or International Standard Book Numbers are used to identify books. One ISBN system uses 10 digits plus a check digit to identify a book. For example

If the 10 digit book number is 0241034812 then we multiply the first digit in turn by 11, then 10 etc

10 digit book number	0	2	4	1	0	3	4	8	1	2
Multiply by 11, 10,..., 2	×	×	×	×	×	×	×	×	×	×
	11	10	9	8	7	6	5	4	3	2
	=	=	=	=	=	=	=	=	=	=
Result	0	20	36	8	0	18	20	32	3	4

ADD the Result row: $= 141$

DIVIDE by 11 (141/11) $= 12$ remainder 9

SUBTRACT the remainder from 11 (11–9) $= 2$ (this is check digit)

The ISBN number for this book is therefore 0241034812**2**

If this process is repeated for the 11 digit number, (multiplying the last digit by 1), the total of the digits will divide exactly by 11.

It is possible for the check digit to be 10 in which case we write the check digit as X.

Create a program that will take in a 10 digit number and calculate the correct 11 digit ISBN. Your program should only accept valid data, ie

- the number entered is the correct length
- only contains the digits 0 to 9.

**Copyright Information**

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact the Copyright Team, First Floor, 9 Hills Road, Cambridge CB2 1GE.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.