London Examinations IGCSE

Information and Communication Technology

Paper 3

Case Study and Set Tasks

May 2010 and November 2010

Instructions to Candidates

All of the tasks should be attempted.

1. Work submitted must be your own and must be independent from that of other candidates.
2. Sharing the work for any task could result in all of your work being rejected.
3. The time allowed for each task is that set by your teacher.
4. The deadline date for each task is that set by your teacher. Time allowances and deadlines will reflect the need for the centre to submit the work to London Examinations by the required date.
5. There are no limitations on the hardware or software that you may use.
6. **All material submitted as evidence for a task must be clearly labelled with the Candidate Name and Candidate Number, and the task identification, e.g. Task 1(a), Task 1(b).**
7. **Only work which is specified in the set tasks should be submitted.**

Four marks will be awarded for full compliance with **instructions 6 and 7**.

Turn over

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HampersInternational.com

HampersInternational.com is an Internet-based company that sells food and drink, packed in decorative boxes called hampers. The hampers contain unusual and luxury items and they are often bought as presents. All the food and drink is preserved in cans, in bottles, by smoking or by drying. This means that they can be stored for a long time, without refrigeration. HampersInternational.com has a warehouse near London and delivers hampers to anywhere in Europe.

A customer can buy a hamper from the HampersInternational.com web site by using an e-commerce payment method such as a credit card. Once the payment has been cleared, the hamper is delivered by a courier company. Delivery is on the next working day to places in the United Kingdom, and within three working days to the rest of Europe.

There are two kinds of hamper: standard hampers and bespoke hampers. The company web site offers a range of 15 standard hampers. Each standard hamper contains 12 items from a single country. For example, the Scottish hamper contains a Dundee cake, Edinburgh rock, a haggis, heather honey, a bottle of honey liqueur, a bottle of malt whisky, oatcakes, shortbread, a smoked highland cheese, smoked salmon, venison sausages, and wild raspberries. A bespoke hamper is one that contains items chosen from different countries by the customer.

All standard hampers are the same price and the delivery charge is included in the price. The cost of a bespoke hamper depends on the price of the individual items and the delivery charge is based on the total weight of the hamper.

When a customer buys a standard hamper, the order is recorded in a database and the despatch staff are informed. The correct hamper is then taken from stock, the stock records are amended, and the hamper is sent to the customer.

When a customer selects items to fill a bespoke hamper, the order is processed in a spreadsheet. As each item is selected or removed, the spreadsheet updates the web page with the total cost of the order. When the order has been completed, an item list is generated and sent to the despatch staff. They then record the order in a database. The correct items are taken from stock and packed into a hamper, the stock records are amended, and the hamper is sent to the customer.

The web site
Tasks 1a, 1b, and 1c are related to this section.

The web site is hosted by an Internet Service Provider that provides:

• storage space for the web site
• access to script libraries for interactive functions such as form filling
• mailboxes for four e-mail addresses. These take the form of
  xxx@hampersinternational.com e.g. johnsmith@hampersinternational.com
 or xxx.xxx@hampersinternational.com e.g. john.smith@hampersinternational.com

The web site opens with a home page telling visitors about HampersInternational.com and the service it provides. The web site has a separate page for each standard hamper. On the home page there is a table containing a link to each hamper page. There is also a link to pages where customers may select items for a bespoke hamper.

The spreadsheet
Tasks 1d, 1e, and 1f are related to this section.

The spreadsheet contains a weight for each item. When an item is added to or removed from a bespoke hamper, the spreadsheet calculates the total weight, price and a delivery charge. The total cost of the order is shown to the customer on a web page. When the order has been completed, the spreadsheet prints an item list which is used by the despatch staff.

The database
Task 2 is related to this section.

A database is used by HampersInternational.com to handle stock and orders. Three of the tables are STOCK, ORDER and CUSTOMER.

The STOCK table has fields to:

• identify each type of stock item
• hold weight and price information
• hold stock control information.

A stock item may be a standard hamper or an individual item.

The ORDER table has fields to:

• identify the order
• identify the customer
• hold the hamper type
• hold despatch information
• hold an item list for a bespoke hamper.

The CUSTOMER table has fields to:

• identify the customer
• hold payment details
• hold security information.

Security information is used to allow customers to check on their orders or create new orders without having to enter all of their personal information again.

TASKS

Task 1

The HampersInternational.com web site contains the following:

- a home page with information about HampersInternational.com and what they do. This page has links to the standard hamper pages and to item selection pages for bespoke hampers
- 15 standard hamper pages, one per country. These have pictures of the hampers and details of what each hamper contains
- interactive pages for selecting individual items. There are 200 items, grouped into types, e.g. all the meat items are on one page
- checkout pages.

Each page fits on a 1024 × 768 pixel screen, without any scrolling.

(a) Sketch designs for the home page and one of the standard hamper pages.
In the sketches, headings should be given but areas of descriptive text may be shown as blocks.
The full text of the blocks should be printed on the reverse of the design sheets.
Outline drawings may be used to indicate any graphical components.

Each page design must be submitted as a single A4 sheet.

(12)

(b) Make and **print** the **two** pages.
Each page must be on **one** sheet of A4 paper.

Any changes from the design in Task 1a must be indicated clearly.

(2)

(c) The web site has interactive pages for buying individual items. Each page contains a user-friendly form where customers can select the items they want and see the cost of their order.
Make and **print one** of these pages.

Annotate the printout to explain the user-friendly features.

NOTE For the purpose of this task, the cost display does **NOT** need to be linked to the spreadsheet. A manual entry of a suitable figure will be acceptable.

(6)

(d) The spreadsheet has two pages. The first page is where items are selected and costs calculated. The second page is the list of items selected for an order.
The spreadsheet used by HampersInternational.com has 200 items on it. Yours should only include 40 items.
Design the spreadsheet.

Annotate the design to show where functions, formulae or other special features will be used.

Functions and formulae do not need to be written out in full but your annotation must explain their purpose.

The design must be submitted as two sheets of A4.

(8)

(e) Make the spreadsheet.

Print:

- Page 1 of the spreadsheet with a completed order of **12** items. These items **MUST** be distributed over the range of the 40 items on your sheet
- Page 2 of the spreadsheet, showing the selected items.

Any changes from the design in Task 1d must be indicated clearly.

NOTE For the purpose of this task, the spreadsheet does **NOT** need to be linked to the web site.

(4)

(f) The spreadsheet used by HampersInternational.com produces a printout of the selected items shown on page 2. It uses a programming language to put the selected items on consecutive lines of a third page and then prints that page.

Design an algorithm that performs the task of collecting selected items from page 2 and placing them on consecutive lines on page 3.

Annotate the design to explain how it works. The design may be submitted in any suitable form, e.g. a flowchart, structured English or a programming language.

The design must be submitted as a single A4 sheet.

NOTE You **do not** need to make the program.

(6)

(Total 38 marks)

Task 2

The Database

(a) The database holds details of stock, orders and customers.

Sketch designs for:

- a screen to be used to input a new item of stock
- a screen to be used to input a new order.

The screens should be designed to be user-friendly.

Annotate your designs to explain your choice of:

- field names
- field sizes
- data types
- validation checks
- calculations
- user-friendly features.

Each design must be submitted as a single A4 sheet.

(14)

(b) Build the three tables and make the input screens.
Enter data for **25** items of stock. The stock must include five standard hampers and 20 individual items for a bespoke hamper.
Enter data for **six** orders. An order is either a standard hamper or it is items for a bespoke hamper. The orders must include both standard and bespoke hampers.
Enter data for **six** customers. These must be the customers who have made the **six** orders.

Print each filled table on a separate A4 sheet.
Print the STOCK input screen.
Print the ORDER input screen.

(5)

(c) The database is used for stock control. When an order is entered, the database will indicate if any item has fallen below a set stock level.
Design and make a system which will perform this task.
Print a single A4 page which shows any functions, formulae, macros, extra fields or other features you have used.

Annotate the page to explain how the system works.

Print a screen showing how the database indicates that an item's stock level is too low.

(4)

(d) HampersInternational.com offers customers a reminder service. Customers may ask to be sent an e-mail on a specific date to remind them of an event such as a birthday or anniversary.
Create the required fields for this service to work and enter suitable data for your six existing customers.

Print a screen showing the new fields.

Annotate the printout to explain your choice of fields, data types and sizes.

(3)

(e) HampersInternational.com runs a daily search of the database to find customers who have asked for a reminder on that day. Ensure that at least one of your customers has a reminder due today.
Design and run a suitable search.

Print a screen showing the search conditions.

Print a report showing the search results.

(2)

(f) After a customer has placed an order, the customer can access the web site again, enter some information and then view a copy of the order.
Design a method that will display the customer's order when the customer enters the correct information.
The system should require the minimum of input from the customer but must include a security feature.
Assume that the links between the database and the web site already exist and that each customer has a single order.

Annotate the design to explain how it works. The design may be submitted in any suitable form, e.g. a flowchart, structured English, or a programming language.

The design must be submitted as a single A4 sheet.

(8)

(g) On a single A4 sheet print a database view showing how the customer information input in **Task 2f** is linked to the correct order in your database.
Show any functions, formulae, macros, extra fields or other features you have used.

Annotate the page to explain how the system works.

(2)

(Total 38 marks)

Task 1 and Task 2

Presentation and relevance of submitted material, as specified in the 'Instructions to Candidates' on the front cover.

(Total 4 marks)

TOTAL FOR PAPER: 80 MARKS

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