UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

9762339827

COMPUTER STUDIES **7010/31**

Paper 3 Alternative to Coursework **May/June 2013**

1 hour 30 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

There is one compulsory question on this paper.

Each part must be answered in the space provided.

No marks will be awarded for using brand names of software packages or hardware.

You are advised to spend at least 20 minutes reading the information at the start of question 1 since this information is needed to answer all the sections in this question.
All answers must refer to this information system.

The number of marks is given in brackets [ ] at the end of each part question.
The maximum number of marks is 60.

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This document consists of **11** printed pages and **1** blank page.

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In this question you are asked to read about:

- an existing manual, paper-based system for people to rent a holiday villa for a week of their choice,
- the web-based semi-automatic rental system that is intended to be introduced as a replacement.

You are given a description of both the existing and the intended new web-based computerised system.

Description of the existing system

People wishing to rent a holiday villa are sent a brochure with pictures and details of the holiday villas available to rent. Each holiday villa has a unique brochure number. Each holiday villa can be rented for one week; a deposit of 25% is required when the rental is agreed, the remainder must be paid 4 weeks before the rental is due to start.

When a person wants to rent a holiday villa they select a holiday villa from the brochure; then ring up the company to ask if the holiday villa is available for the week chosen. The telephone line is available Monday to Saturday from 08:00 to 20:00 hours.

A diary is kept for each holiday villa showing the weeks that have been already rented and those still available for rental. If the holiday villa is available then the rental is agreed, if it is unavailable then other similar holiday villas are offered as an alternative.

When a rental is agreed, the following details are **always** required:

- holiday villa brochure number
- rental week
- number of people in rental group aged 18 and over
- number of children under 18
- details of person renting the holiday villa
    - name
    - address
    - telephone number

The following **may** be required:

- age of each child under 18

The diary for the holiday villa is updated and payment for the deposit is taken using a credit/debit card over the telephone. A receipt for the deposit, confirmation of the rental and details of the holiday villa are posted to the person who has booked the holiday villa. The final payment is taken 4 weeks before the rental is due to start.

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Description of the proposed web-based system

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The intention is to replace all the paperwork by introducing a web-based holiday villa rental system which will contain all the information described above. It will allow people to rent their holiday villas online, process secure debit/credit card payments; receive receipts and other paperwork via email attachments.

The new holiday villa rental system will have a website that contains all the details that were available in the brochure. For each holiday villa there will be a calendar for the next 18 months showing the weeks still available for rental and the price per week. There will be a search facility available so that holiday villas can be viewed by:

- number of people accommodated
- location
- price
- availability

In the new system, a person will use the holiday villa website to choose a villa to rent for a week. When the rental is confirmed and the deposit has been paid they will receive a receipt for the deposit, confirmation of the rental and details of the holiday villa via an email attachment. The final payment will be taken 4 weeks before the rental is due to start.

A systems analyst is to be employed to review the existing manual method. The systems analyst will be responsible for drawing up an action plan for the new web-based system. This will then be designed, built, tested and implemented. Technical documentation will be produced. Six months after the introduction of the new system, a full evaluation of its performance will be made.

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[Turn over

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1 **(a)** The systems analyst has decided to use project management software to produce a PERT chart to check the progress of this project.

Give **three** reasons why the systems analyst decided to do this.

Reason 1 .....

.....

Reason 2 .....

.....

Reason 3 .....

..... [3]

(b) The systems analyst wants to find out about the existing rental system from the people who have used it to rent villas.

(i) State **one** method that would be appropriate and explain why the systems analyst should choose that method.

Method .....

Explanation .....

.....

.....

.....

..... [3]

(ii) State **one** method that would **not** be appropriate and explain why the systems analyst should **not** choose that method.

Method .....

Explanation .....

.....

.....

.....

..... [3]

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(c) Draw a design for a screen to be used to enter the required details online when a villa rental is agreed.

[8]

(d) What extra information is needed in addition to that given in the list of details always required? Why is this information needed?

Information .....

Why it is needed .....

.....

.....

.....

..... [3]

(e) Draw a systems flowchart, with a key, to show how the web-based rental system should work.

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(i) Include in the key:

- 4 symbols that you have used in your flowchart
- a description of the purpose of each of these symbols

Key	
Symbol	**Description**

[4]

(ii) Include in your systems flowchart:

- what happens when a person makes an enquiry
- what happens when a rental is agreed

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[8]

For Examiner's Use

(f) The systems analyst wants to ensure that the deposit and final payment taken over the Internet are secure.

Explain what steps the systems analyst needs to take.

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..... [3]

(g) The systems analyst is employing a programmer to write bespoke software for the new web-based villa rental system.

(i) Explain with reasons why the systems analyst should make this choice.

.....

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..... [3]

(ii) What drawbacks could there be to making this choice?

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..... [2]

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(h) The number of children under 18 in the rental group must be a positive whole number between 0 and 5 inclusive.

Give **two** different types of test data.

Using the number of children in the rental group, give **one** example of each of these types.

Explain why you chose each one as a good example.

Type 1 .....

Example 1 .....

Explanation .....

.....

Type 2 .....

Example 2 .....

Explanation .....

..... [6]

(i) Write an algorithm, using pseudocode or a flowchart, which:

- inputs the number of children under 18
- checks the number is between 0 and 5
- outputs an error message if not
- allows a maximum of 3 attempts

[6]

For Examiner's Use

For Examiner's Use

(j) Describe **three** advantages to people booking the holiday villas when using the new web-based system compared to using the brochure.

1 .....

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.....

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2 .....

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3 .....

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..... [6]

(k) Describe how the new villa rental system should be evaluated.

.....

.....

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..... [2]

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General Certificate of Education Ordinary Level

COMPUTER STUDIES **7010/31**

Paper 3 Alternative to Coursework Scenario **May/June 2013**

INFORMATION FOR THE EXAMINATION IN 2013

This scenario should be given to candidates
at least 4 weeks before the examination.

No Additional Materials are required.

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READ THESE INSTRUCTIONS FIRST

This scenario should be given to candidates at least 4 weeks before the examination.

Candidates may consider the scenario in preparation for the actual examination.

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The Alternative to Coursework general scenario is:

web-based holiday villa rental system

The question paper will contain a full description of a computer-based sample project based on the general scenario given above. Candidates will answer questions on the sample project.

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