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RECOGNISING ACHIEVEMENT

ADVANCED GCE

APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY **G054/IC**

Software Development

INSTRUCTIONS FOR CANDIDATES

To be opened on receipt

Monday 14 June 2010
Afternoon

Duration: 1 hour 30 minutes

INFORMATION FOR CANDIDATES

*   This document consists of **8** pages. Any blank pages are indicated.

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PRE-RELEASE TASKS – INSTRUCTIONS FOR CANDIDATES

Read the attached case study and these instructions carefully, then carry out the tasks detailed below. There are two types of task

In Task 1 you will produce notes that will help you to answer questions in the examination for this unit. The other tasks will be marked and will contribute up to 30 of the 100 marks available for this unit.

You will need your completed tasks when you take the examination for this unit.

The work produced in response to the pre-release tasks must be submitted to your teacher when it is completed. The work must be presented as a hard copy.

It is not acceptable or advisable for you to copy large parts of material from other sources as the tasks require you to apply your knowledge to the case study. Any books, information leaflets or other material (e.g. videos, software packages or information from the Internet) which you have used to help you complete this work must be clearly acknowledged in the work itself. To present material copied from books or other sources without acknowledgement will be regarded as deliberate deception.

You **must not** submit any material other than your response to the pre-release tasks.

The work must be collated so that it is presented in task order.

Each page of the work must be marked clearly with your name, Centre number and task number.

When you have completed the tasks you must sign and date a Candidate Authentication Statement. You must then ask your teacher to sign to confirm that the work is your own.

Task 1
Produce the following for Hideaway Sheds
• a feasibility study
• security recommendations including legislation implications
• maintenance recommendations

Task 2

Develop a Level 0 data flow diagram (context diagram) for the current system in use at the administration office (see Appendix 1). The process starts when a customer contacts Hideaway Sheds and ends when the final receipt is sent to the customer.

Briefly evaluate the methods you used to develop this data flow diagram. **[15]**

Task 3

Develop a flowchart to calculate the discounts and postage charges that are applied to accessories when ordered with a shed or as a separate order. **[10]**

Task 4

Design a printed report layout showing stock details including the supplier, current stock levels and re-order levels. **[5]**

Hideaway Sheds

Hideaway Sheds is a small independent business based in Cumbria. The business makes and delivers a range of garden sheds built to each customer's specification. Hideaway Sheds also supplies accessories to enable their customers to customise the interior of the sheds. The accessories include shelves, garden tool storage racks and plant potting tables.

The main function of the business is to make and deliver garden sheds.

The head office of Hideaway Sheds is based in a small industrial complex in the Lake District. The owner of Hideaway Sheds is based here, as are the administration staff. The sheds are made in a purpose built workshop on the same site. The wood used to build the sheds and the delivery vehicles are also stored at this complex.

The sheds are purpose-built and based on the specifications given by each customer. The sheds are delivered when the shed and any accessories ordered by the customer are completed.

If a customer orders accessories at the same time as placing their order for a shed then a discount on the price of the accessories is given. The amount of discount given is based upon the number of accessories ordered. The amount of discount given is shown in Table 1.

Number of accessories	Discount given (%)
1	5.0
2	7.5
3	10.0
4	12.5
5 or more	15.0

Table 1

A delivery charge, based on the mileage between Hideaway Sheds and the customer's home is added to the final cost of the order, after any discounts have been applied. The delivery charges are shown in Table 2.

Number of miles	Delivery charge (£)
0 - 40	10
41 – 60	25
Greater than 60	40

Table 2

In addition to making and delivering the sheds and supplying accessories, Hideaway Sheds also provide an installation service. The cost of the installation is a standard rate of £50.

Customers are also able to just order accessories. Discount is given if two or more accessories are ordered at the same time with postage and packing costs being dependant on the number of accessories ordered. Table 3 shows the discounts given and the postage and packing costs.

Number of accessories	Discount given (%)	Postage and packing costs (£)
1	0	5.00
2	5.0	6.50
3	7.5	8.00
4	10.0	9.50
5 or more	12.5	11.00

Table 3

At the moment all communication between the office and the workshop is by phone, fax or by a member of staff delivering the information by hand. This information may be on paper or on electronic media.

Hideaway Sheds currently have four desktop computers. Three of these are used in the head office. One is in the owner's office and is used for keeping staff personnel records and other private company information. The other two computers are in the main administration office. One of these computers is used to keep records of all orders placed by customers for sheds including any accessories required, delivery details and if Hideaway Sheds is to install the shed.

Once orders have been taken and a deposit paid, the details of the order are passed to the warehouse. Order details are recorded into an order book where the progress of each order is recorded. When the shed has been built and any accessories on the order have been collated, the warehouse staff notify the administration staff.

The other computer is used to record deposit and final payments from customers. As each customer order is ready for delivery the details of the order and the deposit already paid by the customer are recorded onto the spreadsheet based accounts system. An invoice is then produced for the outstanding balance. This is sent to the warehouse and given to the customer when the shed and accessories are delivered. When the payment is received from the customer it is recorded on the accounts system. A receipt showing full and final payment is then produced and posted to the customer.

Payments to suppliers are also recorded on this computer.

None of the computers based in head office has any form of security leaving the information stored on them open to misuse.

The fourth computer is based in the warehouse office and is supposed to be used to keep records of the stock needed to build the sheds and accessories. The stock records are initially kept manually and transferred to the computer on every Wednesday and Friday. Due to time pressures the stock records are not always transferred to the computer. This means that when the warehouse notify the administration department of the stock that needs re-ordering the orders are not always accurate. This has, on occasions, led to sheds being late for delivery as the wood needed to build them is not in stock. Some sheds have had to be delivered without the accessories ordered as these are not available in stock.

The owner wants to modernise the business and the working practices. There is concern about the poor security of the information currently on the computers. The other concern is that the computer at the yard does not have internet access. The owner has asked that the new system has full internet access with email communication, both internal to the business and externally. This will, it is hoped, speed up communication between the warehouse and the administration office.

In addition, there are other problems that need to be solved by the new system. The main ones are:

*   incorrect stock records being held leading to incorrect orders being sent to suppliers
*   supplier details being held manually.

The new system should also be able to produce the following reports:

*   the number of each accessory sold each month
*   the amount of revenue each accessory generates for Hideaway Sheds.

The system should also be able to:

*   keep records of all the customers who use or have used Hideaway Sheds
*   show the progress of each order.

The owner has also asked that the operating system and applications software, used throughout the company, be standardised. At present different versions are used at the office and warehouse. This has proved to be a problem when information and data has to be shared. The owner is, however, concerned about the security of information and data that would need to be shared.

The staff who work in the warehouse and who will be using the new system, have asked that the stock system shows the re-order levels of each stock item and provide a message when stock reaches the re-order level. A daily automatically generated report should also be sent to the administration office showing which items of stock need to be re-ordered.

The warehouse staff have also asked that the user interface of the stock system contain large buttons and drop-down option lists. As the warehouse staff have limited ICT skills, helpful user messages should be shown.

The administration staff have asked that supplier details, and the stock they supply, be accessible through the use of a unique supplier number. Details of orders and payments made will also need to be recorded. User errors should also be limited through the automatic facilities of the system.

It is hoped that the new computer system will meet all these requirements and solve the problems with the current system. The owner has allocated a budget of £27,500 for the hardware and software.

The owner has asked that head office has a total of five computers and the warehouse has three, these should all be linked. The owner has asked that the existing computers, in the head office and the warehouse, be incorporated into the new system.

The warehouse staff have requested that the monitors be upgraded to widescreen TFT monitors. The administration staff have asked that a networked colour laser printer be available for printing correspondence such as letters, quotations and delivery notes. A black and white printer should also be connected to each computer.

As the staff are familiar with the operating system and applications software that are currently used on the computers in Hideaway Sheds they have requested, with the agreement of the owner, that the vendors of these be the same in the new system. The staff do, however, appreciate that upgrades may be required.

The owner would like to have a laptop computer to use when working away from the office. This laptop computer must have internet access. When the owner is working in the head office the laptop computer must be capable of linking to the other computers. This will enable the sharing of information and files with the rest of the business.

The owner is considering expanding the business in the future to supply summer houses and pergolas. It is essential that the new system will be able to cope with this change and also be able to be adapted for any other changes, such as changes in fuel prices and delivery vehicles' running costs which may have an impact on delivery charges.

The new system must be implemented over the Easter Bank Holiday weekend so that disruption is kept to a minimum.

Appendix 1

When a customer places an order the following procedures take place within Hideaway Sheds.

- The customer advises the administration staff of contact and delivery details, the type and size of shed, any accessories required and if the shed is to be installed.
- A member of the administration staff enters these details onto the order system.
- The cost is worked out, the customer is given an order number and a deposit is paid.
- Information about the order is sent to the warehouse.
- Details of the order are manually recorded in an order book.
- When the order is completed details are sent to the administration office.
- An invoice for the outstanding balance is created.
- The invoice is sent to the warehouse and given to the customer when the order is delivered.
- The customer pays the final balance.
- Details of the payment are recorded by the administration staff onto the accounts system.
- A receipt showing full and final payment is posted to the customer.