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GCSE Information and Communication Technology (Specification B)

Coursework Support Material

Exemplifying The Marking Scheme

Theme 1: Communicating and Handling Information Example 2

2008

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Note:

The examples given in this booklet usually demonstrate the absolute minimum that is required for each mark. Any work showing less evidence than that shown is therefore likely to be awarded less marks.

Coursework - Communicating and Handling Information

The marking criteria are given in the syllabus, together with some explanatory notes. This section includes these criteria, together with additional guidance from the Syllabus Support Material and exemplar paragraphs for each criterion.

The notes are provided to amplify the application of the marking criteria. They are given for guidance and to aid teachers in the assessment of coursework not to replace the criteria themselves. If centres have specific enquiries in relation to the marking criteria, they are encouraged to contact AQA for further clarification.

The exemplar paragraphs indicate the minimum standard expected for the award of a particular mark. If a candidate's work does not exceed or meet the content shown for a given mark in these paragraphs then that mark cannot be awarded.

For some criteria, evidence in the form of print-outs, screenshots or diagrams will be needed. These are indicated for each criterion, with suggestions as to the nature of this supporting evidence. For some criteria the report itself will provide the necessary evidence.

The number of marks is not related to the amount of text written to evidence any criterion. In these samples the examples for higher marks are often slightly longer: this is because they are intended to show the difference in evidence needed to support each criterion.

There is no virtue in encouraging candidates to illustrate each criterion many times. Output format, for example, can be justified within a presentation context by explaining how two or three slides are have been designed, used and customised: it is not necessary to explain all seventeen slides in detail.

A - Description of the task to be attempted (3 marks)

3 The description is concise and clear and shows a good understanding of what is involved within the problem

2 Description is evident and shows some understanding of the problem

1 A simple outline of the problem to be solved

0 Little or no description

The thrust of the task involves using ICT to solve a problem. The ICT system produced should be reusable. The task should address identifiable needs, preferably of a third party, and provide scope for candidates to demonstrate breadth and depth in their use of ICT. If a candidate chooses a task that is trivial, i.e. that no investigation or analysis is required and the candidate needs to make no choices, it will be hard to award marks for the description of a task. Few candidates are expected to select tasks that fall into this category. Teachers should approve the tasks that candidate choose.

To be worth more than 1 mark, the description should provide sufficient detail to provide a clear indication of the problem, in both depth and extent, which the candidate has chosen to solve. For 3 marks, the problem will require the candidate to explain clearly what the problem is and the extent of the difficulties being faced by the third party.

Evidence in report

1 mark minimum requirements - work showing less evidence can be worth no marks
I have been asked to design an interactive information centre display for touch screen terminals at Cayman Fitness Centre. They will be used by people at the fitness centre to find out about the times and dates of activities. At the moment the clients are taking a long time to find the information that they need. I will use presentation software to simulate the touch screen display.

2 marks minimum requirements - work showing less evidence can be worth one mark
I have been asked to design an interactive information centre display for touch screen terminals at Cayman Fitness Centre. They will be used by people at the fitness centre to find out about the times and dates of activities. Cayman Fitness Centre keeps details of all the activities on sheets of paper held in a folder. This folder is kept behind the reception desk. Photocopies of these activities are placed on the notice board. Details are also produced in advertising leaflets and advertisements which are placed around the reception area, but the times and dates are often wrong as they have changed. The displays will have to be updated regularly to make sure that everything is up to date. I will use presentation software to simulate the touch screen display.

3 marks minimum requirements - work showing less evidence can be worth two marks
I have been asked to design an interactive information centre display for touch screen terminals at Cayman Fitness Centre. They will be used by people at the fitness centre to find out about the times and dates of activities. Cayman Fitness Centre keeps details of all the activities on sheets of paper held in a folder. This folder is kept behind the reception desk. The receptionist has to look through this folder to answer telephone questions about the activities and sometimes finds more than one sheet about each activity as new sheets are added, but the old ones are not removed. Occasionally the wrong sheets get taken out by mistake. Photocopies of the fitness activities are placed on the noticeboard, but clients find that it takes a long time to find the information that they want because the sheets are placed in seeming random order. Details are also produced in advertising leaflets and advertisements which are placed around the reception area, but the times and dates are often wrong

as they have changed since production of the documents. The system will be reusable because the data will have to be updated regularly to make sure that everything is up-to-date. I will use presentation software to simulate the touch screen display.

B - Analysis (3 marks)

3 A clear understanding and analysis of what is involved within the problem, an insight into the possible methods that could be employed in its solution and reasons for the chosen method of solution.

2 An understanding and analysis of what is involved within the problem and an insight into the possible methods that could be employed in its solution

1 Some analysis of what is involved within the problem

0 No, or a cursory, analysis

Here the candidate should have analysed the task and have looked at the possible alternative methods of solution. To gain 3 marks the candidate should make a reasoned judgement as to why the chosen method of solution is to be used.

The candidate must show some evidence in the report of the investigation and analysis, and marks are awarded in the light of this evidence. However this investigation should be of the problem and not of the solution. This evidence may simply be a needs analysis carried out by observation of the present situation, interviews with staff or some relevant information from sources such as business organisations, internet sites or printed resources. Note that weaker candidates may flood the report with large volumes of printouts and similar materials, without any indication of understanding of relevance (or otherwise) to the task. This type of evidence cannot be given a great deal of credit, and is unlikely to be worth more than 1 mark. For more than one mark there must be an examination of other methods of solving the problem.

Evidence in report

1 mark minimum requirements - work showing less evidence can be worth no marks
I went to Cayman Fitness Centre and watched how the receptionist dealt with the questions about the activities. There were telephone queries as well as questions from people entering the centre. Whenever the receptionist had a question to answer, she would look through the folder until she came upon the right page – she would then be able to provide an answer. The pages did not seem to be in a particular order. I did notice that staff sometimes placed a new sheet in a yellow metal tray. When the receptionist had time she would then place this new sheet into the folder. She told me that she sometimes wasn't sure whether this sheet referred to a new activity or was just an update.

2 Mark minimum requirements - work showing less evidence may be worth 1 mark
I went to Cayman Fitness Centre and watched how the receptionist dealt with the questions about the activities. There were telephone queries as well as questions from people entering the centre. Sometimes even staff asked about the times that activities were due to start and finish. Whenever the receptionist had a question to answer, she would look through the folder until she came upon the right page – she would then be able to provide an answer. The pages did not seem to be in a particular order. I did notice that staff sometimes placed a new sheet in a yellow metal tray. When the receptionist had time she would then place this new sheet into the folder. She told me that she sometimes wasn't sure whether this sheet referred to a new activity or was just an update. Some clients looked at the publicity material occasionally taking a leaflet or brochure away. However it was obvious that some of the dates and times were wrong as many people complained.

The present folder system could be improved by making staff use different colour sheets for similar activities. The receptionist would then find it easier and quicker to update activities within the folder. She would also be able to find the activities easer as they would be grouped. A simple tick box question at the top of each activity sheet would enable the receptionist to find out if the activity was a new one or a revised one. In the same way use of a colour photocopier would help the receptionist organise the photocopies on the noticeboard. The colour photocopier could also be used to produce more up-to-date leaflets and advertisements.

I am going to design an interactive information centre display for touch screen terminals at Cayman Fitness Centre. The terminal will do the same thing that the receptionist does when looking through the folder. The person using a terminal will be able to select what activity she is interested in by selecting options from various menus. She will get all the information that she needs. The displays will have to be updated regularly to make sure that everything is up to date. I will use presentation software to simulate the touch screen display.

3 mark minimum requirements - work showing less evidence may be worth 2 marks
I went to Cayman Fitness Centre and watched how the receptionist dealt with the questions about the activities. There were telephone queries as well as questions from people entering the centre. Sometimes even staff asked about the times that activities were due to start and finish. Whenever the receptionist had a question to answer, she would look through the folder until she came upon the right page – she would then be able to provide an answer. The pages did not seem to be in a particular order. I did notice that staff sometimes placed a new sheet in a yellow metal tray. When the receptionist had time she would then place this new sheet into the folder. She told me that she sometimes wasn't sure whether this sheet referred to a new activity or was just an update. Some clients looked at the publicity material occasionally taking a leaflet or brochure away. However it was obvious that some of the dates and times were wrong as many people complained.

The present folder system could be improved by making staff use different colour sheets for similar activities. The receptionist would then find it easier and quicker to update activities within the folder. She would also be able to find the activities easer as they would be grouped. A simple tick box question at the top of each activity sheet would enable the receptionist to find out if the activity was a new one or a revised one. In the same way use of a colour photocopier would help the receptionist organise the photocopies on the noticeboard. The colour photocopier could also be used to produce more up-to-date leaflets and advertisements. This would be slightly better than the current system.

Another alternative is to use a computer with database and desk top publishing software. The database could be used to store information about the activities; each activity would be a new record. The database would enable searches to be carried out quicker, but the receptionist would have to be trained in how to use the software.

The system that I am going to use involves the design of an interactive information centre display for touch screen terminals at Cayman Fitness Centre. The terminal will do the same thing that the receptionist does when looking through the folder. The receptionist can use a terminal to find information quickly when answering telephone questions. Clients and staff will be able to find out about an activity by selecting options from various menus without having to disturb the receptionist. They will get all the information that they need quickly and easily. The receptionist will also have more time to update the displays and to make sure that everything is up to date. I will use presentation software to simulate the touch screen display. There will not be a need for so many out-of-date paper leaflets and advertisements as all the information can be obtained from the touch screen terminals.

C - Specification (3 marks)

3 Detailed and reasoned specification of how the solution will be judged as a success

2 Evidence of a specification of how the solution will be judged as a success

1 Some evidence of a specification

0 No specification

In this section the candidate shows that the solution to the problem has clear evaluation criteria. To gain 3 marks the candidate should demonstrate depth and sophistication in the criteria that will be used to judge the success of the final solution.

Evidence in report

1 mark minimum requirements - work showing less evidence can be worth no marks
The new touch screen system must be:

- better than the current system
- easy to use
- have more up-to-date information

2 mark minimum requirements - work showing less evidence may be worth 1 mark
The new system should:

- Contain information which is more up-to-date
- Be easy to use
- Hold details about each activity including the name, dates, times, cost and who can take part
- Be able to be updated from a central computer
- Be able to list details of an activity within three taps of the screen

3 mark minimum requirements - work showing less evidence may be worth 2 marks
The new system should:

- Contain information which is more up-to-date so that clients do not turn up at the wrong time or on the wrong day.
- Be easy to use
- Hold details about each activity including the name, dates, times, cost and who can take part. Each activity will also have a special symbol displayed to indicate if the activity is suitable for a disabled person.
- Have a ‘Back to Start’ reset button displayed on each screen so that any user can return to the main menu easily.
- Be able to list details of an activity within three taps of the screen so that it is quick to use.

D - Design of the ICT system (4 marks)

4 A clear and logically laid out design using a variety of techniques

3 A clearly laid out design using a variety of techniques

2 A clearly laid out design

1 Some evidence of a design

0 No evidence of a design

Having chosen the appropriate method and identified the requirements of the solution, the candidate should develop a planned design of the ICT system as a whole and describe the relationship between the various parts of the solution, using a variety of presentation techniques which could include flowcharts, algorithms, structure diagrams, system diagrams or written descriptions. In this context a good design shows how the various parts of the newly designed system will fit together, from gathering the data all the way thorough to the final output. For more than two marks there must be more than one technique evidenced.

Evidence in report and diagrams

1 mark minimum requirements - work showing less evidence can be worth no marks
This could be a storyboard, the proposed outline navigation chart or simple structure diagram of the whole system, or even a written description as below. There may be errors.

Having carried out my investigation, and analysed the results, I have decided that my touch screen system will be simulated by an interactive presentation. The main menu will consist of the four main areas at operating at Cayman Fitness Centre. Each sub-menu will consist of a list if the activities on offer within that area. When an activity is selected things like the dates, times, cost, who can take part and a picture of the leader will be displayed.

2 mark minimum requirements - work showing less evidence may be worth 1 mark
This could be evidenced by a storyboard containing any appropriate details such as slide transitions, timings, animations, etc., a clear proposed navigation chart, structure diagram, or a flowchart of the whole system. It may alternatively be a written description as below. However there may be some errors in either the written or diagrammatic form.

Having carried out my investigation, and analysed the results, I have decided that my touch screen system will be simulated by an interactive presentation. The main menu will consist of the four main areas at operating at Cayman Fitness Centre. Each sub-menu will consist of a list if the activities on offer within that area. When an activity is selected the following will be displayed: dates, times, cost, age range and sex of who can take part, a picture of the leader, location, an appropriate disabled symbol and the health benefits. The person in charge (who may be the receptionist) will have to upload the latest data into all of the touch screen terminals. This person will also have to enter the latest data from the data collection forms completed by the person in charge of the new or revised activity. This data will be automatically validated upon entry. A printout of the entered data will be returned to the activity leader for verification purposes. Publicity leaflets and notices for the noticeboard will also be printed from the slides.

3 mark minimum requirements - work showing less evidence maybe worth 2 marks
This could be evidenced by an appropriate combination of a storyboard containing any appropriate details such as slide transitions, timings, animations, etc., a clear proposed navigation chart, structure diagram, or a flowchart of the whole system. It may alternatively be a written description such as the one above. The use of more than one appropriate technique is required for the third mark. There may be a few errors in either format.

4 mark minimum requirements - work showing less evidence maybe worth 3 marks
The variety of techniques are clearly and logically laid out. Having chosen the appropriate method, and identified the requirements of the solution, the candidate should develop a planned design of the ICT system and describe the relationship between the various parts of the solution, using a variety of presentation techniques which could include detailed storyboards, clear annotated proposed navigation charts, flowcharts, algorithms, structure diagrams, system diagrams or written descriptions as below. A few minor errors can be ignored.

Having carried out my investigation, and analysed the results, I have decided that my touch screen system will be simulated by an interactive presentation. The main menu will consist of the four main areas operating at Cayman Fitness Centre. Each sub-menu will consist of a list of the activities on offer within that area. When an activity is selected the following will be displayed: dates, times, cost, age range and sex of who can take part, a picture of the leader, location, an appropriate disabled symbol and the health benefits. Each area will be identified by a different colour background. Special large print black and white screens will be available for those with viewing difficulties and a 'spoken word' version will be available for blind people.

The person in charge (who may be the receptionist) will have to upload the latest data into all of the touch screen terminals. This person will also have to enter the latest data from the data collection forms completed by the person in charge of the new or revised activity. The data collection form will ask for all the relevant information listed above as well as having space for additional details. These forms will be placed in a special tray in Reception and entered into the system in one batch in the late evening. This data will be automatically validated upon entry. A printout of the entered data will be returned to the activity leader for verification purposes. A similar system will be set up for amending details of ongoing activities and for deleting activities once they have been completed.

Publicity leaflets and notices for the noticeboard will also be printed from the slides. They will be numbered and dated so that old versions can easily be found on the noticeboard.

Data collection forms will be designed for the activity leaders to use. Before allowing Cayman Fitness Centre to use the system I test it using valid and invalid data entered from the data collection form. I will trial the complete system with some activity leaders, the receptionist and some clients. User documentation will be created for the receptionist. No user documentation will be needed by the clients as the touch screens themselves will contain full instructions.

E – Implementation

E(i) - Hardware resources required (2 marks)

2 An indication of the selection of hardware with justifications for the choice made

1 An indication of the selection of hardware

0 No indication of the selection of hardware

These marks are awarded for the selection of appropriate computer hardware including interfaces and control packages for measurement and control. In control tasks, marks for the choice of sensors and actuators would be given in sections E(iii) and E(vi).

Candidates are expected to explain reasons for selection of hardware resources for 2 marks, although selection of hardware may well be determined by availability. An understanding of fitness for purpose can be considered as evidence of selection of a computer system if the candidate has no sensible choice available. If an Internet comparison table is used then a selection must still be clearly indicated and relevant justifications made.

Evidence in report

1 mark minimum requirements - work showing less evidence can be worth no marks
I recommend that Cayman Fitness Centre purchases the following equipment for receptionist use:
An Ebanks D1980 desktop computer running Windows Vista.
Memory of at least 2048 MB of DDR2 SDRAM.
A flat screen monitor.
A hard drive to save the information on.
A CDRW drive.

A printer will be required.
An Ebanks D2003 colour laser printer which is able to print on both sides of A4 sheets should be suitable for the leaflets.
It produces 10 ppm in colour.

2 mark minimum requirements - work showing less evidence may be worth 1 mark
I recommend that Cayman Fitness Centre purchases the following equipment for receptionist use:
An Ebanks D1980 desktop computer with an Intel Pentium dual-core E2140 processor running Windows Vista.
Memory of at least 2048 MB of DDR2 SDRAM.
A flat screen monitor as space in the reception area is rather limited. A high resolution 19” screen should be sufficient for the receptionist to use without straining her eyes.
A 250 GB hard drive to save the information on.
A 48x CDRW drive would be useful so that data backups can be made each evening. Alternatively a 4GB memory stick could also be used for making backups of each presentation.

A printer will be required.
A laser printer is preferable to an ink jet printer, despite the extra initial cost, as they are able to print much faster. The toner cartridges are also able to last much longer so the receptionist would not have to worry about changing them so often. As a large number of leaflets are being produced quality and printing speed are also important therefore the Ebanks D2003 colour laser printer which

is able to print on both sides of A4 sheets should be suitable. It produces 10 pages per minute in colour and is even faster at printing the data collection sheets in black and white.

E(ii) - Software resources required (2 marks)

2 An indication of the selection of software with justifications for the choice made

1 An indication of the selection of software

0 No indication of the selection of software

These marks are awarded for the selection of appropriate computer application software.

Evidence in report

1 mark minimum requirements - work showing less evidence can be worth no marks
I recommend that Cayman Fitness Centre uses presentation software rather than web authoring software. I recommend Microsoft PowerPoint rather than Impress or Keynote. Microsoft Excel will also be used.

2 mark minimum requirements - work showing less evidence may be worth 1 mark
Microsoft Word will be used to create the data collection form. If the form needs to be edited in future then Microsoft Word will again be needed.

Microsoft Excel will be used to create the tables used to show the details of each activity. Microsoft Excel also contains many validation techniques which will be useful when the activity data is first entered.

I recommend that Cayman Fitness Centre uses presentation software rather than web authoring software. I recommend Microsoft PowerPoint rather than Impress or Keynote. Keynote is only suitable for use with Apple operating systems and I have already recommended that Microsoft Vista be used. Microsoft PowerPoint is useful because it can create the required slides with different timed transitions (as mentioned in the design) and many different animations. With Microsoft PowerPoint it is possible to design a unique Cayman Fitness Centre main menu reset button using hyperlinks between slides. It is also possible to use a master slide which will contain the Cayman Fitness Centre logo and the company's blue background colour. This master slide will help to provide a consistent layout for each of the slides.

E(iii) - Data collection, data capture and input (2 marks)

2 Evidence, with clear justifications, of the design of methods of collecting or inputting data

1 Evidence of the design of methods of collecting or inputting data

0 No evidence of the design of methods of collecting or inputting data

In measurement and control tasks, marks can be awarded for the selection of sensors, sampling times, variables and calibration (as appropriate).
Typical evidence for this could be the inclusion of data capture forms. Other evidence could be the use of explicit or defined data entry sections on spreadsheets. 2 marks are available if the candidate explicitly links the format of the data capture forms with the data structures themselves or in some way indicates the reasons for the particular layout chosen.

Evidence in report, data collection form and slide printouts

1 mark minimum requirements - work showing less evidence could be worth no marks
This report must be supported by evidence of a data collection form and associated slide.

I have designed a new activity data collection form for gathering information such as the activity name, the start time, etc. Rather than create another data collection form I decided that the same form can be used for amending details of an activity. A copy of this form and a printout of the slide after the data has been entered are included.

2 mark minimum requirements - work showing less evidence may be worth 1 mark
This report must be supported by evidence of a data collection form and associated slide.

I have designed a new activity data collection form for gathering information such as the activity name, the start time, etc. An annotated copy of this form is included. From the printout of the slide it can be seen that the data on the form is in the same order as that on the slide in order to make data entry simpler and faster. Restricted choices and tick lists have been used where indicated to save the activity leader time when completing the form and also to help with data validation.

Rather than create another data collection form I decided that the same form can be used for amending details of an activity. Therefore the first question is a simple choice between whether the activity is a new one or an existing activity to be updated. This should make it easier for the receptionist when she enters the data into the computer system.

E(iv) - Data verification and/or validation (3 marks)

3 An understanding of and use of appropriate verification and/or validation techniques

2 A critique as to whether verification and/or validation techniques are appropriate

1 A simple mention of possible verification and/or validation techniques

0 No mention of possible verification and/or validation techniques

Not all applications software readily incorporates automatic or user defined verification and/or validation techniques. However, the candidate should be aware of how data is checked and, where appropriate, should have used methods to check that data inputted into their system is correct. Possible verification checks could include visual checking, double entry, etc. Whilst validation could include range checks, etc. For any marks to be awarded there must usually be more than one technique considered or used

Evidence in report, annotated slide printouts, spreadsheet tables showing validation and data collection sheets where indicated

1 mark minimum requirements - work showing less evidence can be worth no marks
When a new activity was typed in, it was double-checked by comparing what was on the screen with the information on the activity data collection form. This process is called verification.

The Cayman Fitness Centre opens at 7.00 am and closes at 10.00 pm. The earliest an activity can start is 7.00 am and the latest an activity can start is 9.00 pm. Therefore the start times of each activity must be between these times. This is an example of a validation range check.

2 mark minimum requirements - work showing less evidence may be worth 1 mark
When a new activity was typed in, it was double-checked by comparing what was on the screen with the information on the activity data collection form. If a mistake had been made then it should be corrected. This process is called verification. Also, after they had been typed in, the details were printed out. This printout was stapled to the original activity data collection form and passed to the activity leader for checking. If a mistake has been made then the activity leader should notice it, will highlight the error and pass the form back for correction.

The Cayman Fitness Centre opens at 7.00 am and closes at 10.00 pm. The earliest an activity can start is therefore 7.00 am and the last activity starts at 9.00 pm. Therefore the start times of each activity must be in between these times. I have set up the system so that only times within this range can be entered. This is an example of a validation range check. Times outside of this range will not be accepted and an error message will be displayed.

3 mark minimum requirements - work showing less evidence may only be worth 2 marks
When a new activity was typed in, it was double-checked by comparing what was on the screen with the information on the activity data collection form. After they had been typed in, the details were printed out. This printout was stapled to the original activity data collection form and passed to the activity leader for checking. If a mistake has been made then the activity leader should notice it, will highlight the error and pass the form back for correction. A copy of a completed activity data collection sheet and the associated slide printout are shown below. The error noticed during this verification stage is highlighted.

The Cayman Fitness Centre opens at 7.00 am and closes at 10.00 pm. As activities always start on the hour, activities must be between 0700 and 2100 hours. In order to ensure that only numbers in this range are entered for the start time I have used a spinner which starts at 0700, ends at 2100 and goes up in increments of 100. The screen shots show how spinner was created. Another screenshot shows the spinner working. This is an example of validation using a restricted list. I cannot show a screenshot of an incorrect entry of 2400 as this number is not on the spinner. It is not possible to enter 2400. If 2400 was listed on the activity data collection form then the receptionist will have to contact the activity leader to find out what the correct time should be.

E(v) - Data and/or program structures (2 marks)

E(v) - Data and/or program structures (2 marks)

2 Justification given for data and/or program structures used

1 Appropriate data and/or program structures designed and used

0 No evidence of appropriate data and/or program structures

In measurement and control tasks, these marks can be awarded for the appropriate program structures and techniques, such as procedures, as well as for data structures such as files for data logging.

In this case this will likely include the output and screenshots from the presentation package. As before, 2 marks can only be awarded where clear justification, in terms of the application or in terms of the software used, is made for the structures used. Most tasks will be worth at least 1 mark if implemented.

Evidence in report, printouts, screenshots and schematic structure of presentation

1 mark minimum requirements - work showing less evidence can be worth no marks
Evidence of the construction and use of the presentation, with slides appropriate to the application, is sufficient for 1 mark. The evidence is likely to include screenshots indicating these structures in use or how they were set up. The schematic structure (or actual navigation chart) should be shown together with printouts of the slides suitably annotated to show the relationships between them. Any timings, transitions, animations, etc. used could also be evidenced.

The following diagram is a navigation chart which shows the links between the various slides. From every slide it is possible to move backwards to the previous slide or to go directly back to the main menu by selecting on the appropriate button at the bottom of each slide. The user is also able to move forwards by selecting the required hyperlink itself, the text box surrounding the hyperlink text or the associated diagram.

Some of the slides are shown to illustrate how the links between the slides work. Screen shots of some of the hyperlinks being set up are also shown.

2 mark minimum requirements - work showing less evidence may be worth 1 mark
Evidence of the construction and use of the presentation, with slides appropriate to the application, is needed together with annotation showing justifications for the structure.

The following diagram is a navigation chart which shows the links between the various slides. From every slide it is possible to move backwards to the previous slide by selecting on the appropriate button at the bottom of each slide as sometimes the user may make an error and select the wrong link. It is also possible to select the main menu button as the user might want to go directly back to the start slide. Someone might leave the terminal without resetting the presentation and, whilst the presentation does default to the main menu after two minutes of non-use, the new user may not want to wait two minutes for this to happen and she is able to select the main menu reset button. The user is also able to move forwards by selecting the required hyperlink itself, the text box surrounding the hyperlink text or the associated diagram.

Some of the slides are shown to illustrate how the links between the slides work. Screen shots of some of the hyperlinks being set up are also shown.

E(vi) - Output format (3 marks)

3 Justification for the design and use of a range of customised output formats

2 Evidence of the design and use of a range of customised output formats

1 Evidence of the use of a range of default output formats

0 No evidence of output formats

In this section the candidate should be aware that the default outputs from application software are not always appropriate and that the output should be designed with the needs of the intended audience in mind, i.e. in databases the reports do not always have to include all of the database's fields. In measurement and control tasks, these marks can be awarded for the selection of appropriate physical outputs (such as lights, sound or movement) as well as printed output. Output in the presentation context is the actual slides (including output animations and transitions) together with any sound generated.

The majority of output provided by candidates will have been significantly modified from the software default outputs (such as slide templates) so careful checking is needed to establish design and fitness for purpose before awarding 2 marks for output. 3 marks can be awarded when candidates have clearly explained why the output formats were so designed.

Whilst it may be necessary to print out some of the slides in A4 size to clarify some points, most slides can be printed much smaller.

Evidence in report and screen dumps, printouts, photographs

1 mark minimum requirements - work showing less evidence could be worth no marks
Evidence of the output of the presentation will satisfy the requirements for 1 mark if there is more than one slide using two or more different default outputs e.g. all slides have used templates.

2 mark minimum requirements - work showing less evidence may be worth 1 mark
At least two different types of non-default output on the slides e.g. at least two slides in which the template has either not been used or has been altered. It is likely that different slides will show different combinations of some of text, graphics, photographs, bulleted points, tables, animation, etc.

3 mark minimum requirements - work showing less evidence may be worth 2 marks
The above outputs are accompanied by explanations which clearly show that the needs of the user have been considered in the design of the output.

I designed the opening slide so that when a user first uses the system she can easily access the help section if she needs to. The main menu text is in yellow so that it stands out from the royal blue background and this will avoid problems for people who are colour blind. Similarly the text uses as few words as possible in a large font size of 20 so that it can be read by most old people without the need for reading glasses.

The activity slide lists all the data for that activity in the same order for each activity so that comparisons are easier to make. Each activity area has been designed with a different background colour so that the user is aware of the type of activity involved. This background colour coding also makes it easier and quicker to use to use when the user revisits the terminal on another day.

F - Testing (4 marks)

4 Evidence of testing of the solution using a clearly defined, comprehensive and fully justified strategy

3 Evidence of testing of the solution using a clearly defined and comprehensive strategy

2 Evidence of testing of the solution using a defined strategy

1 Evidence of some testing of the solution

0 No evidence of any testing of the solution

To be worth 4 marks there must be a justified and appropriate testing strategy, with evidence of its use. If the strategy does not cover most of the requirements, or is not explained clearly then only 2 or 3 marks can be awarded. Random testing can be awarded only 1 mark at the most, but candidates must indicate in the report that testing has taken place if this mark is to be awarded.

Comprehensive at this level should include testing a range of data input (valid, invalid, etc.) correct output and most of the specification.

Evidence in report and printouts showing testing

It is essential to have evidence of the testing that was carried out to gain marks. An absence of printouts or signed teacher-authenticated statements leads to an absence of marks. To gain any marks candidates are required to show that they understand the concept of testing in that they should know what the outcome will be before a test is carried out. Simply showing that the presentation works is not a test.

1 mark minimum requirements - work showing less evidence can be worth no marks
I tried out the presentation by selecting the swimming fitness category and then selecting the synchronised swimming activity for teenagers to see if the links worked properly and the information for the synchronised swimming activity came up on the screen. The printout shows that it worked as expected. I did the same thing for all of the other categories and activities. They all worked properly as shown in the printouts.

2 mark minimum requirements - work showing less evidence may be worth 1 mark
First of all I decided to test the system by testing against the assessment criteria in my specification. I tested the data input part of the system, the hyperlinks, the content of the slides and then the editing and updating of the presentation slides. When entering data from the activity data collection form I used valid data for the times – start times of 9.00, 13.00 and 21.00. This worked fine as shown in the screen shots. I then used some stupid start times of 9.47, 2300 and 2611 to see if these worked. The validation checks prevented these from being entered. I tried out the hyperlinks for all of the other categories and activities in the presentation. For example, by selecting the swimming fitness category and then selecting the synchronised swimming activity for teenagers to see if the links worked properly and the information for the synchronised swimming activity came up on the screen. The printouts show that they all worked as expected.

Test no.	Test	Expected Output	Actual Output
1	Valid data	Start times added	Start times added
2	Invalid data	Start times rejected	Error message
3	Adding a new activity	New activity added	New activity slide
4	Hyperlinks	Moves to correct slide	Moved to correct slide

3 mark minimum requirements - work showing less evidence may be worth 2 marks
First of all I decided to test the system by testing against the assessment criteria in my specification. I tested the data input part of the system, the hyperlinks, the content of the slides and then the editing and updating of the presentation slides. When entering data from the activity data collection form I used valid data for the times – start times of 9.00, 13.00 and 21.00. This worked fine as shown in the screen shots. I then used some stupid start times of 9.47, 23.00 and 26.11 to see if these worked. The validation checks prevented these from being entered. I tried out the hyperlinks for all of the other categories and activities in the presentation. For example, I selected the swimming fitness category and then selected the synchronised swimming activity for teenagers. The information for the synchronised swimming activity came up on the screen. The printouts show that they all worked as expected. Next I tried adding a new activity, deleting an activity and changing the times of one activity. Once again, all these operations worked OK. These met most of my specifications

Test no.	**Test Input**	**Test Data**	**Expected Resultt**	**Actual Result**
1	Start time - valid data (extreme)	9.00	Start time added	Start times added
2	Start time - invalid data	9.47	Start times rejected	Error message
3	Start time - invalid data	26.11	Start times rejected	Error message
	Test Hyperlinks	**Hyperlink**	**Expected Output**	**Actual Output**
4	Main menu - swimming	Select swimming	Swimming slide	Swimming slide
5	Main menu - border	Select border	Nothing	Main menu
	Test New/Delete/Amend Slide	**Slide**	**Expected Output**	**Actual Output**
6	Insert new activity	Kung Foo	Kung Foo added	Kung Foo added
7	Delete Lads Handball	Lads Handball	No Lads Handball	As expected
8	Bodden Yoga	Start 10.00	Yoga Start at 10.00	As expected

4 mark minimum requirements - work showing less evidence may be worth 3 marks
First of all I decided to test the system by testing against the assessment criteria in my specification. I tested the data input part of the system, the hyperlinks, the content of the slides and then the editing and updating of the presentation slides. When entering data from the activity data collection form I used valid data for the times – start times of 9.00, 13.00 and 21.00. I chose 9.00 as this is the lowest extreme value and 21.00 is the highest extreme value. This testing worked fine as shown in the screen shots. I then used some stupid start times of 9.47, 23.00 and 26.11 to see if these worked. They should all be rejected. The validation checks prevented these from being entered. I tried out the hyperlinks for all of the other categories and activities in the presentation to make sure that when a user selected an option it went to the correct slide. For example, by selecting the swimming fitness category and then selecting the synchronised swimming activity for teenagers to see if the links worked properly and the information for the synchronised swimming activity came up on the screen. The printouts show that they all worked as expected. Next I tried adding a new activity as the activities often change monthly. I tried deleting an activity to make sure that this did not affect the rest of the presentation. I then tried changing the times of one activity to make sure that there were no problems. Once again, all these operations worked OK. Finally I will test that the noticeboard printouts of the activities contain accurate information so that nobody receives the wrong information. Finally I will test that the system meets all the specifications I mentioned earlier.

Test no.	**Test Input**	**Test Data**	**Expected Output**	**Actual Output**
1	Start time - valid data (extreme)	9.00	Start time added	Start times added
2	Start time - valid data	13.00	Start time added	
3	Start time - valid data (extreme)	21.00	Start time added	
4	Start time - invalid data	9.47	Start times rejected	Error message
5	Start time - invalid data	26.11	Start times rejected	Error message
6	Adding a new activity		New activity added	New slide
	Test Hyperlinks	**Hyperlink**	**Expected Output**	**Actual Output**
7	Main menu - swimming	Select swimming	Swimming slide	Swimming slide
8	Main menu - border	Select border	Nothing	Main menu
	Test New/Delete/Amend Slide	**Slide**	**Expected Output**	**Actual Output**
9	Insert new activity	Kung Foo	Kung Foo added	Kung Foo added
10	Delete Lads Handball	Lads Handball	No Lads Handball	As expected
11	Bodden Yoga	Start 10.00	Yoga Start at 10.00	As expected
	Test Specification	**Test**		
12	Disabled symbol	Select each slide	Symbol displayed	As expected
13	Main Menu hyperlink	Select main menu	Main Menu slide	Main Menu slide
14	Three taps	Select dancing	Selected in 3 taps	Selected in 3 taps

G - User documentation (3 marks)

3 Clear and logical instructions as to how to use the ICT system, and how to amend the ICT system if necessary including the technical aspects of the use of the ICT system.

2 Clear instructions as to how to use the ICT system, and how to amend the ICT system if necessary

1 Some simple instructions as to how to use the ICT system

0 No evidence of any user documentation

To be awarded marks in this section there must be separate and identifiable documentation that would enable an unfamiliar user to operate and adapt the ICT system designed.

Trivial documentation which simply gives instructions on how to use the software and is inadequate for an unfamiliar user to make appropriate use of the system that has been created can be awarded no marks.

Evidence in supporting documentation and possibly report

There is no need for candidates to include any commentary on their documentation within the report. Although there may be justification for the content of the documentation, this is not necessary for the award of marks.

It is likely that the user documentation will be well presented and include a title page, a list of contents, page numbers, section headings and appropriate screenshots

The user documentation including the technical aspects does not need to occupy more than a side or two of A4. The expectation is that, in each case, the support given would be sufficient to enable an unfamiliar user to run the system and carry out appropriate basic functions. For the context of the Cayman Fitness Centre, the user documentation would be as follows:

1 mark minimum requirements - work showing less evidence can be worth no marks
This will be task orientated, showing how the software is used for the specific task. It will probably give instructions that allow an unfamiliar user, in this case the receptionist, to run the system (assuming that the operating system was already running) by double-clicking on the correct icon, how to produce an activity noticeboard printout and how to search for details of an activity in the event of a query.

2 mark minimum requirements - work showing less evidence may be worth 1 mark
In addition to the work above, the documentation should show how to add a new activity, how to delete an activity and how to edit some of the details of an activity.

3 mark minimum requirements - work showing less evidence may be worth 2 marks
In addition to the work of both sections above, instructions on the technical aspects should be included. This could be done by including FAQs or a troubleshooting guide. This section will be more system-orientated. It will probably include some of the following: instructions that allow an unfamiliar user to add new details to all activities in the existing presentation by changing the master slide, add/delete/amend hyperlinks, alter validation criteria, change printers, back up the data file, etc.

H - Evaluation (3 marks)

3 An evaluation of the ICT system based on the specification with suggestions for future refinements

2 An evaluation of the ICT system based on the specification

1 Some evaluation of the ICT system, without reference to the specification

0 A cursory or no evaluation of the ICT system

In this section the candidate should refer to the evaluation criteria provided in Section C of the assessment criteria.

The maximum mark available if no evaluation criteria are given is 1. The criteria for evaluation must have been defined prior to implementation if more than 1 mark is to be awarded, this is normally done in Section C - Specification of the report. If 3 marks are to be awarded then the suggestions for refinements should clearly arise from the evaluation.

Evidence in report

1 mark minimum requirements - work showing less evidence can be worth no marks
My solution is successful because the testing shows that it does work properly. The new system is easy to use providing that the receptionist has reasonable computer skills. Certainly it will take less time for her to look up details of each activity. The Cayman Fitness Centre clients will find that the touch screen terminals mean that it is much easier to find out all the activity information that they need to keep fit. The new system should also mean that the information displayed is more accurate and up-to-date. Because of all this I have decided that my solution is successful.

2 mark minimum requirements - work showing less evidence may be worth 1 mark
When I first investigated this project I decided that I would evaluate it by comparing it to the points mentioned in the specification:
The new system should also mean that the information displayed is more accurate and up-to-date as the receptionist will have more time to enter the data and also all of the touch screen terminals can be updated simultaneously.
The new system is easy to use providing that the receptionist has reasonable computer skills. The Cayman Fitness Centre clients will find that the touch screen terminals mean that it is much easier to find out all the activity information that they need to keep fit.
It holds details about each activity including the name, dates, times, cost and who can take part.
The new computerised system is able to update the touch screen terminals from a central computer whenever new information is added or an activity is updated.
It is faster in finding details of a particular activity than the existing system and can list details of an activity within three taps of the screen.

3 mark minimum requirements - work showing less evidence may be worth 2 marks
When I first investigated this project I decided that I would evaluate it by comparing it to the points mentioned in the specification:
The new system should also mean that the information displayed is more accurate and up-to-date as the receptionist will have more time to enter the data and also all of the touch screen terminals can be updated simultaneously.
The new system is easy to use providing that the receptionist has reasonable computer skills. The Cayman Fitness Centre clients will find that the touch screen terminals mean that it is much easier to find out all the activity information that they need to keep fit.
It holds details about each activity including the name, dates, times, cost and who can take part.
The new computerised system is able to update the touch screen terminals from a central computer whenever new information is added or an activity is updated.
It is faster in finding details of a particular activity than the existing system and can list details of an activity within three taps of the screen.

A possible future refinement is using a database to hold all the information about each activity. Each activity could be held as a record. The database could then be linked to the presentation. This would make it easier for the receptionist to add new activities as she wouldn't have to bother about formatting of the slide and other things like animation and hyperlinks because it could be done automatically. Another refinement is to allow staff to update their own activities on-line from their own computers. Video-clips could be included so that clients could see what the activity is like. This would mean that they may not waste their money on a fitness activity that they won't like.

J - Communication within the report (3 marks)

3 Presentation of the report is of a high quality and uses a varied range of techniques. The needs of the intended audience are catered for and spelling, punctuation and grammar is used with consistent accuracy

2 Presentation of the report is good and uses a range of techniques, and spelling, punctuation and grammar is used with accuracy

1 Presentation of the report uses a limited range of techniques, and spelling, punctuation and grammar is used with reasonable accuracy

0 Presentation of the report is basic with inaccurate use of spelling, punctuation and grammar

1 mark minimum requirements - work showing less evidence can be worth no marks
A report that uses some of the headings supplied but has a number of spelling errors and generally seems to just about communicate the concepts

2 mark minimum requirements - work showing less evidence may be worth 1 mark
A report that uses all the headings supplied and has few if any spelling errors or grammatical errors The headings are clear and the text is understandable. Diagrams and screen shots are reasonably well used.

3 mark minimum requirements - work showing less evidence may be worth 2 marks
Using sensible headings there are almost no spelling or grammatical errors. Each section is clear and the wording clearly indicates that the candidate can communicate their ideas in an unambiguous manner. Diagrams and screen shots are well used to illustrate the points made in the report and, in general, the report is well written.