

GCSE ICT

HOW TO CREATE THE COURSEWORK

Writing the Introduction and Analysis Section

Statement of the Problem and Analysis (10 marks)

This will be for the spreadsheet, database and the presentation work

The title and Background to the problem. **2 marks.**

Here you must explain a bit about the business you are going to solve the problem for. Think of a realistic title for your project; link it to what you are aiming to do.

Title and Background.

An introduction to what the business does

Create a Project title on front cover using Publisher or any desk top publishing software of your choice. Include your name, the project title and the schools name.

Include text, pictures and graphics

The General background [$\frac{1}{2}$ to 1 page].

Here you must explain things like:

- *what the business does,*
- *who owns it,*
- *where it is located,*
- *what sort of customers it has,*
- *how long it has been in business*

You need to develop an introduction which allows the reader of your work to understand the purpose of the business

Analysis of the current system. 4 marks

Here you must say what currently happens and why you can provide a solution to the problems. Say what information is normally used and what happens to it. For example the owner collects sales figures from the till and uses a calculator to work out his profits. This is not very efficient because..... The owner of the business could use a spreadsheet to do this because....

You need to explain why a database is also useful as well. What information is to be communicated through the slide show and publications you will create?

You need to provide a detailed description of current manual system.

If they currently store all of their customer records in a filing cabinet instead of a database, say how;

- New customer details can be added or amended.
- How the information is kept in order
- How the information can be used by the office workers.
- How copies of the information can be created

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For the financial information, if they don't use a Spreadsheet say how they calculate their sales figures or other similar types of calculations.

- What do they currently use to calculate this information
- How do they present this information?
- How often is it updated?
- How do they store this information?

For the promotional material which advertises what the shop does:

- Who creates price lists, brochures or posters?
- How often do they get updated
- Who are the main audience for these materials?

An interview and/or questionnaire to gather facts from the owner of the business is a good way of showing you have found this out

You need to be able to explain how the current system works. It must be detailed as the parts of their system you identify as currently not very good will become your suggestions for future improvements.

If you use a questionnaire, it will help you show evidence of what the end user will want and expect from a new solution. The questionnaire could have a section asking what currently happens and what would they like to happen in the future.

Explain the Problems with and the limitations to the current system. 2 marks.

Assume the owner currently has a paper based system, how will using ICT improve what he does. Explain how a spreadsheet, a database and publisher/PowerPoint will improve things.

List the typical problems which are found in their current system.

They could be things like:

- Membership cards getting lost, damaged or defaced.
- Difficulty of updating records
- Repetitive work being undertaken.
- Information not being readily available.
- Small tasks taking a lot longer than necessary

This is where you show you understand the limitations of an old fashioned paper based system and how it affects the way the business can run smoothly. Break these problems in to separate paragraphs which relate to the Database, the Spreadsheet and the Publishing materials. State the

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problem, explain the effects of the problem, explain the potential longer term problems if the current system is not changed.

Such as:

- Lost revenue
- Fewer customers
- Increased workload
- Inefficient business practices

Not keeping up with the competition

Aims and Objectives 2 marks

What do you hope to do with this coursework? What do you expect the shop owner to be able to do once as parts of the coursework are finished?

What will your spreadsheet actually do?

What will your database actually do?

How will PowerPoint/publisher improve things?

A Detailed list of what is required from your recommendations.

You must set objectives which can be measured for success, such as:

- It is faster to update customer details.
- in-house advertising can change quickly to customer needs
- improved management of accounts

This must be what you want your improvements to do.

They should be specific and detailed.

They should be easy to measure whether they are successful.

They should be attainable.

They should be time dependant

They should be realistic

Remember S M A R T!

Design of the Solution (12 Marks)

Alternative methods (1 mark)

Explain how you could improve the current manual system. What improvements could be made without having to use a computer?

Rather than use the computer system you have suggested, what other types of software could they have used?

- Specialist packages
- Bespoke software
- In house designs

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Software (1 mark)

List all software you will use and describe the uses of each one you identify

e.g. MS Word, MS Excel, MS Access, MS publisher etc.

Information Handling 3 marks (Database)

Data capture form (1 mark)

Design a form which will allow you to collect data from your customers.

This is the sort of data you will store in the database.

Explain what your data capture form does and why it has been designed in the way it has.

Data structure form (1 mark)

Design a table which will show all of the fields to be included in each database table, the data-types you will select and the amount of characters which can be entered in to each field

Design of data validation techniques (1 mark)

On your data structure form, also show any of the validation techniques you expect to use:

- Less than, greater than
- Drop down lists
- Input masks
- Date and time formats

You should show the different data types you will use in your database for every field you will create and for every new table. This can in the form of a table. Use text, numbers, date and time, yes and no etc to show the data types.

Show how you will ensure valid data is entered in to the database. What techniques will you use and for which fields. This can be added to the table you will create for the field data types. Think about the validation rules and use of input masks.

What software are you using for this task? What other software could you have used be decided against using?

Modelling and Spreadsheet Design 3 marks

Hand drawn design of all of your sheets (1 mark)

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You must show the exact layout of your spreadsheet. Where do the headings will go, the column widths, the type of data to be entered in the columns, any formatting which changes the appearance of the sheet from its original layout.

It must be clear enough so anybody could design the same thing from your plans

Design of formulae (1 mark)

You will need to show the Formulae you expect to use and where they will appear on the spreadsheet

Use of more complex designs or formulae (1 mark)

Where more complex formulae have been used you must explain their use and show where they will be on the sheet, how they link to other cells. Plans of 'If' functions etc.

Show some hand drawn designs of you spreadsheet layout. These do not have to contain the data, just the layout.

On your designs you can show where you expect to use formulae. State what sort of formula and functions you will use and where they will appear on the sheet.

Show the more complicated formulae you will use, such as absolute formula, dynamic links and if functions

What software are you using for this task? What other software could you have used be decided against using?

Communicating Information Publications and presentation design

4 marks

Design of first presentation (1 mark)

You need two different documents. Include a description and a plan of the layout of a poster, or a flyer, or a brochure etc.

Design of second presentation (1 mark)

A second design needs to be designed which can be a more complicated brochure or a PowerPoint presentation. It must be explained who it is aimed at, who will respond to the message in the presentation and brochure?

Quality of annotation on the designs (1 mark)

Above designs should contain detailed descriptions of the different techniques used.

Fonts, sizes, scanned images, backgrounds, colours etc.

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Design of data flow (1 mark)

Show what information is needed, what you will do with it and what the outcome will be. This could be a Design of standard letter for mail merge

Sketch out a design of your first presentation, or print out a first version and annotate what changes you will have to make to improve it.

Draw up a second version with your changes fully implemented.

The annotation must be of a higher quality rather than simple one word descriptions, show the development in your work

What software are you using for this task? What other software could you have used but decided against using?

Show a design of the data flow in your documents. For each task show an input process and output diagram which summarises what information you need, what you will have to do with it and what the end out come should be.

Development of the Solution (30 marks)

User documentation (4 marks)

Environment (1 mark) Include Screen shots showing users the user environment and how to use the features you have included. From this they should be able to find all of the files needed to use all parts of your solution

Access and security (1 mark) How to start up system & description of security features such as passwords included to protect the files

Instructions on its use (1 mark) Screen shots and text showing users how to use the system, where to enter data, how to save etc.

Advanced features (1 mark) Screen shots showing users how to use advanced features such as a complex database search

You must put together some user documentation.

This will show where the work is saved and give things suitable file and folder names. It should explain the way each aspect of the coursework should be used and for what purpose

It should show and explain complex feature such as what a goal seek does, or the use of a related table in a database.

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Data flow (mail-merge) [2 marks]

A Template (1 mark) A standard letter. A Print out of standard letter template showing location of database fields

Use (mail-merged letters) 1 mark. A Small sample of mail-merged letters

You should show how you have used a common data flow diagram for each of the three tasks, spreadsheets, databases and publications

Information and Data handling 8 marks (Database)

Create database (2 marks): A Print out of the two database tables you have created. These could be sorted alphabetically and should have headers and footers to add quality to the presentation of your work.

Variety of fields (1 mark): Make sure the database has a variety of suitable fields - numeric, alphabetic, currency, calculated etc. you should use a data dictionary to help display this and include any validation rules and other formatting features you expect to use.

Test plan:

Editing and deleting (1 mark): you should have a description of intended editing and amendments to existing records in your database.

You should show here that your input masks, validation rules and other incorporated features actually work correctly and you can have evidence to prove this.

Simple search (1 mark): this should be a plan of how you will know if your sorting or searching actually works correctly. It should contain a Description of intended searches and sorts + table of expected results.

Complex search (1 mark): you should have a Description of intended complex searches

Such as Town/City = "Chepstow" AND Price < £300 000. You should then show you know what the expected results should be and how you will know if the search is accurate

Implementation of test plan (2 marks): Evidence of above tests being carried out to show they have been implemented for the queries, the sorts and the validation techniques (in the form of print outs)

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Using a test plan to;

- Edit or delete data. This is where you amend your work to make improvements. You must explain the changes made and why.
- Carry out simple searches and sorting information This can be a search on one table or a sort for a specified reason
- Carrying out complex searches. This must involve a relational database with two tables
- Implementing the test plan. This shows you have proved it works as you planned with evidence in the form of screen shots or print outs

Modelling 8 marks (Spreadsheet)

Create a spreadsheet for your business (1 mark); this should be a print out of the spreadsheet page

Check plausibility/accuracy of sheet (1 mark); Make sure it is has correct data through proof reading and data validation techniques to reduce the likely hood or errors

Test plan:

Generate a chart or graph from data for a stated purpose (1 mark);

Description of intended graph for a stated purpose e.g. to provide a visual representation of house variation in a particular Town/City.

This could also be a summary of a businesses sales figure

Plan a *what if* investigation including a change of data for a stated

purpose (1 mark); Description of an investigation involving changing data e.g. what will happen to total profits if an item has its price changed?

This can lead to changes in cost or selling prices

Plan a *what if* investigation involving a change of formula for a stated

purpose (1 mark); Description of an investigation involving changing a formula e.g. what will happen if V.A.T. changes from 17.5% to 20% ?

Evidence of the three tasks (1 mark); Print out of planned investigations carried out showing the results of your findings which will include a commentary.

This relates to your spreadsheet work.

- You must create a spreadsheet

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- You need to check the accuracy and plausibility (it contains believable and valid data) of the spreadsheet. You must explain how you can do this, such as double checking calculations, validating data entries.

You must include a test plan which shows the spreadsheet actually works. It should contain;

- A chart or graph, which has a clear specific purpose, and uses data from the sheet
- Show you have planned to investigate the effects of changing data in the spreadsheet for a particular purpose. You must explain what the purpose of the investigation is. This could be the use of an "if" function and then using the goal seek function to change prices to give an expected level of profit.
- Plan to use a "what if" investigation which involves the change of a formula. This must be for a clearly stated purpose. This could involve the use of absolute formula or a macro
- You must show evidence of these three tasks in printed form

Communicating information 8 marks (Publisher and PowerPoint)

Create presentation one (1 mark); Create and print out the document designed in Design Section. It should look something like that design or you should be able to explain any changes you have made and why.

Create presentation two (1 mark); Create and print out the document designed in Design Section

Plausibility/Accuracy of both presentations (1 mark); Check data is accurate and spelling is correct. Show some evidence the end user has approved of your design or has suggested amendments which you have implemented.

Simple presentation (one form of electronic communication), (1 mark); the suitable use of text only in one of the presentations -printed evidence

Complex presentation *(more than two electronic combinations in one presentation), (2 marks); Text + graphics or video clips or sound effects etc.

Advanced techniques for formatting and layout such as formatting, layout, hyperlinks, hover buttons, etc (2 marks); Ensure one of the presentations contains at least two of these features

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Evaluation (8 marks)

Databases

Evaluate the appropriateness of data in the database (1 mark)

- You must include an evaluation of the usefulness of the data in the database. Was there too many text fields, could you have used more validation techniques etc State the success or otherwise of the data & suggest possible modifications

Comment on how well the database system worked (1 mark)

- You must evaluate how well the database worked in practice. Were you able to sort the data? Could you use the query function properly? Don't be vague here - how did the database meet your objectives? Be SMART - specific, measurable, achievable, realistic, time - bonded.

Spreadsheets

Evaluate the appropriateness of data in the spreadsheet (1 mark)

- You must evaluate how suitable the data was in the spreadsheet. Did it allow the spreadsheet to look realistic? State the success or otherwise of the data & suggest possible modifications

Comment on how well the spreadsheet worked (1 mark)

- You must evaluate how well the spreadsheet worked. Did it solve all of the problems you identified? If not, why not. How did the spreadsheet meet your objectives? Again be SMART - specific, measurable, achievable, realistic, time - bonded

Presentation

Evaluate the appropriateness of data in the presentation (1 mark)

- Evaluate how suitable the data was in your presentation. Was it accurate and up to date? State the success or otherwise of the data & suggest possible modifications

Comment on how well the presentation worked (1 mark)

- How effective was the presentation? Did it work as planned? Was it eye catching to potential customers? How did you test the

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effectiveness of the presentations? E.g. asking peoples opinions, interviews questionnaires etc.

Identify future modifications & developments for the system (2 marks)

- What overall future changes would you now make for the whole project and what would you need to do to make these changes work?
- This could be you data collection, the skills you used, the quality of the outcomes, pretty much anything.
- What additional features & modifications would you make to the system if you had more time? Must be detailed