

A level ICT Coursework Guide

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If you use the headings built into Microsoft word you can draw up a lovely table of contents like the one below by following these simple instructions:

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Then select the "table of contents" tab and put in the relevant options

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Reasoning of choices

Throughout the project you have to explain your reasoning for choices even if the final choice seems obvious. This ranges from what software solution to use (word processor, spreadsheet, database, create program in high level language) to what input method to use to get information (tick box, option box [where you have the choice of one of a number of options], drop down box, text box). At all times using screen dumps to demonstrate each. An example is given below.

Inputting the gender of a person

To input the gender of people in my system a number of options are available such as

Tick box

This is good for storing values in a database as it allows for Boolean (yes/no) options and saves space while increasing searching speed. The only down side of this method is that the question will be something like "is the person male?" which could be found sexist.



Is the person male?

Option box

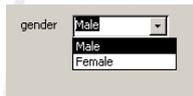
This is a common method for a small number of choices allowing someone to select one option from a list which all the options are visible. This can take up a large amount of the screen if there are a lot of options



gender
 Male
 Female

Drop down menu

This is good for if you have a lot of choices as it saves space on the screen. The down side is that all the choices aren't immediately visible.



gender Male
Male
Female

Text box

This allows for infinite choices and saves space on the screen. The disadvantage is that it doesn't prompt the user with possible inputs.



Gender Male

Comparison

All these methods are good for different purposes, however for a gender with only two options (we are ignoring those people who have the NHS help them when they are unhappy with what god gave them). This in mind a text box which doesn't prompt for choices is not helpful. All the other options are viable here.

Chosen method

I have chosen to use an option box as it displays both choices clearly and only allows the user the displayed choices.

Using correct terminology

When working with your report you have to make sure you use the correct words for aspects of software and hardware. If you use the wrong or inappropriate terminology your report can look unprofessional and you can risk losing marks if your wording is too ambiguous. Common mistakes are in naming software solutions for example saying "word" when you mean "a word processor". This may sound trivial but it is important to remember that Microsoft™ Word™ is a Trade Marked name for a product that is part of a generic type of software known as a word processor.

A note on screen dumps

Screen dumps (screen shots/grabs) are integral for your reports. A picture speaks a thousand words. However keep your screen dumps small and to the point. Don't include lots of other aspects of the screen in your image for these reasons:

- ❖ It looks untidy or unprofessional.
- ❖ It wastes paper.
- ❖ You can distract the examiner with superfluous information.

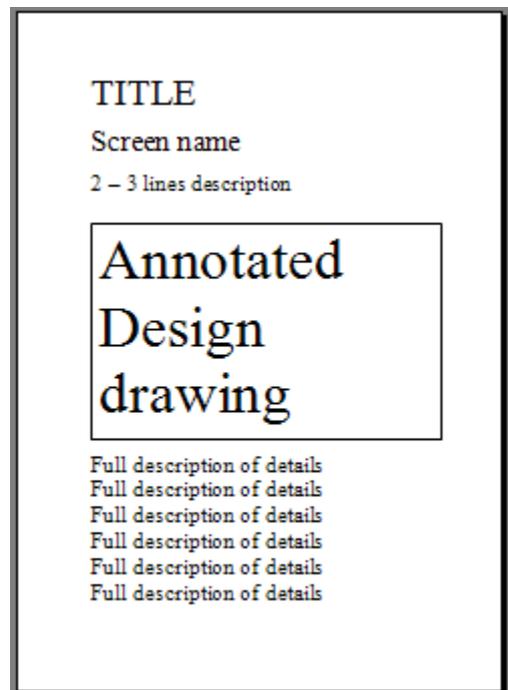
At the same time don't cut off too much information so that the reader can't see what is happening in the program. See the screen shots above for examples of small informative screen shots. A quick tip is to not over enlarge your screen dumps as you can end up with uneven sizing and the default size is perfectly readable (see the above examples which have not been resized only cropped).

Layout of report

It is important to maintain a consistent layout to your report. Using headings and other formatting settings can make this easy along with many other benefits.

The actual page layout is important with the design of a prototype. My advice is to spread out the information and to keep your designs clear. Here is an example of how I lay out screen designs when I'm proposing a solution (see image on right).

It is important for clarity to have only one screen per page. Each screen must be clearly annotated. The annotation must include what happens when a button is pressed and what information is entered. The space at the bottom can be blank or it can contain lots of details about advanced concepts within the screen. It is important that a reader can understand fully how your system works visually from these designs.



Contents of the report

Analysis

Note: A questionnaire could be used to help gather the information required to complete this phase of the project, and where possible is recommended.

Introduction

You have to state who you are doing the work for and what they do I.E. "Fred Smith is the owner of a garage". You also have to state the tasks that the company does e.g.

- ❖ Sells new cars
- ❖ Fits New tires
- ❖ Repairs cars including
 - Exhausts
 - Engines
 - Etc...
- ❖ Does MOT (Ministry Of Transport) Tests

Description of the current system

Describe the current system, which may be paper based or computer based, and what it aims to do. What are the shortcomings of the old system?

Describe how the current system works in detail. Describe the people involved and what they do; what forms have to be filled in; what happens to any paperwork; what data is stored and how;

Describe how you carried out this analysis.

Include data flow diagrams; questionnaires; transcripts of interviews.

Inputs, Processing, Outputs of the current system

Describe what data is collected, what processing is done and what outputs are produced. This may include examples of order forms and invoices from the current system. Include here all the mathematics for your spreadsheet.

Objectives of the new system

What will the new system do? It may be just a matter of streamlining or automating what the previous system did. How will the new system improve upon the old system?

ICT requirements of the new system

What are the hardware & software requirements of the new system? What is the minimum specification of computer it will work on? What are the minimum software requirements? Try to sound like you know what you are talking about here. Research the minimum hardware requirements of the version of excel and operating system you are using.

Differences & similarities between the current system and the proposed new ICT based system

There should be many things the old and new systems have in common, but also there will be differences. Will the new system add new features the previous system did not?

Performance criteria (qualitative and quantitative) & Evaluation Criteria

You need to list performance criteria that can be measured against when you come to evaluate your project. Qualitative criteria deal with things like

ease of use, house style and how the finished documents look. Quantitative criteria can be measured using values. For example you could say that it will take less than a minute to process an order **compared with** 5 minutes using the old method or it will produce 100% accurate quotes.

ICT skills of the user

You will need to say how competent the end user is with computers and the software in question. If the user is not very confident or able then the system will need to have a greater level of automation (therefore more complexity) and be more user friendly in its design.

Hardware & Software needs.

What is the minimum specification of the computer and software requirements to run the proposed system?

Testing strategy

Describe the importance of testing programs and systems. Describe in general terms how you intend to do it.

Design

Sketch Designs of Worksheets

You will need to sketch out what each worksheet will look like. For each worksheet you will need to show:

- ❖ Where input data is entered
- ❖ Where processing takes place. Include sample formulae to show what is going on.
- ❖ What outputs there are on the worksheet
- ❖ Description of any macro processing that takes place on the sheet.
- ❖ Show examples of the formulae that you are using on each sheet.
- ❖ Show which cells have validation rules attached to them.

Macro Requirements

Explain what macro's you are going to have in the workbook and describe in as much detail as you can what the macro should do.

Navigational Diagrams

Diagrams explaining how the user will navigate through the system. How will you make it easy for the user (particularly one with little experience of Excel) to get around your multi-sheet workbook without getting lost?

Testing Plan & Test Data

Each formula, validation rule and macro needs to be tested. In a test plan you will need to state how you are going to test each part of your system. If it is a formula you will need to test it with test data and show what the expected result will be. Try to test formulae with expected data, boundary data and invalid data.

Explain how you will test validation rules and macros.

Schedule of Activities

You will need to state what it is that you will be doing over the next few months to implement and test your project. This may include having to learn some new skills.

Implementation

Commentary of the implementation process

Provide a commentary on how every single part of the project was implemented. Provide printouts of formulae and screen grabs of other features like forms and validation rules being put into your system. Your commentary could be a diary. The aim is to show the examiner that you

know and understand how to build a spreadsheet system by documenting how you put your together. Explain everything in detail. This section carries a third of the marks and so needs to be detailed.

Problems and how they were solved

Any problems that arise in the implementation need to be stated along with your solution. Your solution may mean redesigning part of your system. If so draw up the new designs like you did in the specification.

Testing

Commentary on Testing & outcomes

Go through your testing plan and provide screen grabs of the tests working. Provide commentary to show what is being done and if a test has worked or not. If a test fails explain how to put it right.

Evaluation

Evaluate Objectives

Did you achieve all your objectives? Go through each one providing a commentary on how it was achieved. Comment on any objectives not met.

Evaluate Performance criteria

Comment on how well your system matches the performance criteria. It would be good if the end user tested the system and gave feed back on how the new system compares with the old system.

Usability

This can be done through user testing and feedback into how useful the new system is compared with the old system.

Reliability

Is the system reliable? Can a user make the system fall over and become unworkable?

Performance

How does the system perform? Is it slow? Is it easy to use? Provide end user comments to help prove your evaluation.

Maintainability

How easy is it to update and maintain? For example what is someone wanted to add more items to the stock in a stock control system. Will the new system cope with more stock?

User Documentation

Installation Guide

Explain to the user how to install the system for the first time and any set up procedures that need to be done.

User Guide

Provide a guide to explain to the user how the system should be used. Include in a troubleshooting guide any help for possible problems that you have noticed.