



GCE TEACHERS GUIDE

New Specifications:
for teaching from September 2008

Information & Communication
Technology

Contents

04/02/2010

GCE AS and A Level Information and Communication Technology Teachers' Guide

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Rationale

The WJEC GCE ICT Specification has been drawn up by a team of serving teachers and examiners of AS/A2 ICT.

The study of ICT encompasses a substantial accepted body of knowledge. We recognise that ICT as a subject has grown and developed since its introduction as an A level specification. It is a subject that by its nature requires candidates to consider individual, moral, ethical, social, cultural and contemporary issues. The specification provides a framework for exploration of such issues and includes specific content through which individual courses may address these issues.

In designing the specification, the following elements of good practice in the delivery of ICT at AS/A level have been borne in mind:

- Collaboration between students – There should be opportunities for students to work in such a way as to support their own and each other's learning.
- Collaboration with staff – There should be opportunities for students to work with their teaching staff
- Active learning techniques
- Independent learning
- Organised and planned teaching
- Prompt feedback to students
- High expectations of student achievement
- Respect for different ways of learning
- An awareness of key skills including the wider skills
- The need to reflect upon topics studied and students' own life experiences
- Respect for other cultures
- Moral and ethical awareness should be encouraged
- The importance of life long learning

ICT is widely used in all aspects of government, business, industry, education, leisure and the home. In this increasingly technological age a study of ICT and particularly how it can be used in the solution of a variety of problems is worthwhile.

ICT demands both logical discipline and imaginative creativity; it encourages an awareness of the management and organisation of systems; it extends the students' horizons beyond the school or college environment in the appreciation of the effects of ICT applications on society and individuals.

We are responsive to teacher concerns and welcome constructive feedback from centres and students who are following our specifications.

Overview of the Specification

Unit	Specification content
<p>Unit IT 1</p> <p>2¼ hour written paper</p>	<p>Data , information and knowledge The value and importance of information Quality of information Validation and verification Capabilities and limitations of ICT Uses of ICT</p> <ul style="list-style-type: none"> Business <ul style="list-style-type: none"> CAD/CAM Computer based shopping systems Education <ul style="list-style-type: none"> Uses of computers for teaching and learning School / college administration Health <ul style="list-style-type: none"> Scanning, life support, computer controlled equipment Medical databases Expert systems Home <ul style="list-style-type: none"> Entertainment Home on-line banking <p>Presenting Information Networks Human Computer Interface (HCI) Social Issues Database Systems Modelling <ul style="list-style-type: none"> Spreadsheet features and functions Methodology and Practice Simulation modelling </p>
<p>Unit IT 2</p> <p>Internal Assessment Task</p>	<p>Solution to a problem involving three separate tasks</p> <ul style="list-style-type: none"> Background Analysis of existing data processing activities Desk top publishing Automated documents Presentation Evaluation Compression and storage techniques
<p>Unit IT 3</p> <p>2½ hour written paper</p>	<p>Networks <ul style="list-style-type: none"> Choosing a network for a company Types of network available and use of associated software Software components <p>The Internet <ul style="list-style-type: none"> The impact of the Internet upon business Connecting to the Internet Moral, Social and Ethical Issues associated with the Internet <p>Human Computer Interface (HCI)</p> </p></p>

	<ul style="list-style-type: none"> Working with ICT <ul style="list-style-type: none"> Telecommuting Codes of conduct ICT Security Policies Database systems <ul style="list-style-type: none"> Databases Distributed databases Management of change Management Information Systems System Development Life Cycle (SDLC)
<p>Unit IT 4</p> <p>Internal Assessment ICT Project</p>	<ul style="list-style-type: none"> A database project based in an actual commercial context <ul style="list-style-type: none"> User Requirements Design specification Implementation Testing User documentation Evaluation Project planning

A PowerPoint presentation 'Overview of ICT Specification' giving an overview of the new specification can be found on the CD issued at INSET events.

Changes to the specification for delivery in September 2008

IT1

4.1.7 Presenting Information

Spreadsheets moved and editing and formatting taken out of the others

The use, key functions, advantages & disadvantages of:

Word processing / DTP

Macros.

Differentiate between the functions found in home DTP software and large-scale professional DTP software;

Presentation

importing files, (including video and sound files), exporting files, data compression techniques;

Types of HCI

Candidates should understand the appropriate applications, input devices, advantages and disadvantages associated with the use of;

- command lines such as MsDos
- GUIs - graphical user interfaces including Windows, Icons, Menus, Pointers;
- voice interfaces:
 - speech recognition systems
 - natural language interfaces
 - speech synthesis;
- graphical devices such as graphics pads
- game playing devices such as joysticks, steering wheels, game pads;
- touch sensitive screens such as public information systems; POS systems at retail outlets;
- biometric devices such as iris recognition, hand prints.

Database Systems

Definition of a database

Candidates should be able to define a database as a large collection of data items and links between them, structured in such a way that allows it to be accessed by a number of different applications programs.

Advantages and disadvantages of a database approach over flat files

Database security

Hierarchy of passwords

Storage of data separate to programs

4.1.12 Modelling *This Section will account for 25% of the marks for IT1.*

Spreadsheet features and functions When undertaking this unit candidates should; understand and use the following the spreadsheet modelling concepts;

- cell
- label
- data formats
- common formulas (as listed below)
- absolute cell referencing
- relative cell referencing
- single and multi-level sorting of data
- searching for data
 - 3D referencing
 - named cell ranges
 - data validation techniques
 - graphing techniques
 - macros to initiate automated routines

Candidates should also understand and use:

- the concept of workbooks
- a variety of spreadsheet facilities used for data entry including spinners, list boxes or combo boxes
- a variety of formulas and functions of a spreadsheet
- various formatting options of their spreadsheet to display a professional presentation

Methodology and practice

This unit requires candidates to use ICT hardware and spreadsheet modelling software to solve a realistic problem and answer questions on their solution in the written examination. The spreadsheet solution must be prepared under supervised conditions as it will be taken into the written part of the examination. Solutions produced by the candidate will be used during the examination to answer questions in Section B of the paper. A hard copy of the spreadsheet workbook, including formula views must be submitted to the examiner, along with the candidate's script.

Instructions about the permissible content, layout and authentication of the spreadsheet workbook are provided in the Teacher's Guide.

The context for the task in 2009/2010 is 'business modelling'.

Care must be taken to ensure an appropriately demanding task is undertaken which addresses the features listed below.

Candidates will be given credit when providing practical evidence from their task to support their answers in the written examination. Candidates should produce a spreadsheet workbook which contains **evidence** of;

- worksheets showing labels, data, formula
- multiple sheets and the use of 3D referencing between them
- lookup or vlookup or hlookup tables
 - drop down list boxes
 - spinners for data entry
 - logical True or False or Tick Boxes or Option boxes
- startup user interface
- validation techniques and error messages produced
- sorting techniques
- Search for specific criteria
- Control buttons should be used to initiate macros.
- Appropriate use of graphs such as bar or column graphs, line graphs, pie charts, scatter graphs, pictographs

Candidates should be familiar with the following formulas / standard functions:

A	B
SUM	SINGLE IF
COUNT	MULTIPLE IF
MAX	DATE
MIN	ROUND
AVERAGE	
RAND	

and should include evidence of at least two formulas or standard functions from list A and two from list B in their workbook.

Simulation Modelling Candidates should understand and be able to discuss the following;

- Definition of a simulation model.
- Uses of simulation modelling for weather forecasting, car crash analysis and financial forecasting.
- Advantages and disadvantages of using simulation models.
- Issues relating to hardware used for simulation modelling, including parallel and distributed processing.

IT 3

4.3.3 Human Computer Interface (HCI)

The factors to be taken into account when designing a good user interface
Candidates should understand the importance of:

- **use by disabled people (added)**

Types of HCI moved to IT 1

4.3.6 Database systems

Databases

Explain the terms data consistency, data redundancy, data integrity and data independence.

Explain the terms relational database organisation and data normalisation.

Restructure data into normalised form.

Describe the use of primary keys, foreign keys and links.

Describe the advantages of different users having different views of data.

Database security. Recognise that the individual user of a database may be prevented from accessing particular elements of the information.

Data warehousing and data mining.

The purpose of a database management system (DBMS), query languages and data dictionaries.

Distributed databases Candidates should be able to define a distributed database and discuss their advantages and disadvantages with reference to suitable examples.

4.3.8 Management Information Systems

Candidates should recognise Management Information Systems as organised collections of people procedures and resources designed to support the decisions of managers;

Features of an effective Management Information System

Candidates should appreciate that Management Information Systems should:

- include data that is relevant and accurate
- give information when required
- be accessible to wide range of users
- present data in the most appropriate format
- be flexible

Understand the flow of information between external and internal components of an MIS - be able to draw and interpret data flow diagrams.

Features of good MIS

To include;

- accuracy of the data
- flexibility of data analysis
- providing data in an appropriate form
- accessible to a wide range of users and support a wide range of skills and knowledge
- improve interpersonal communications amongst management and employees
- allow individual project planning
- avoid information overload

Factors which can lead to poor MIS

To include;

- complexity of the system
- inadequate initial analysis
- lack of management involvement in initial design
- inappropriate hardware and software
- lack of management knowledge about computer systems and their capabilities
- poor communications between professionals
- lack of professional standards

4.3.9 System Development

Life Cycle (SDLC)

Candidates should understand the main components of the SDLC and how they may be applied to the development of a computerised solution as listed below.

System Investigation

Analysis of existing system and feasibility report

- (a) Existing Hardware and Software
- (b) Definition of the scope of the present system
 - Organisational chart
 - Define sources of data.
 - Methods of data capture
- (c) Major data processing functions and processes
 - High level (contextual view) data flow
- (d) Identification of problems with the present system
- (e) Identify user requirements for the new system
- (f) Analysis of costs and benefits of the new system

System Analysis

Identify and understand tools and techniques used to analyse a system.

Identify external and internal components to a system and the flow of data between them including Data Flow Diagrams (DFDs), including High level (contextual view) DFDs and low level (detailed view) DFDs, decision tables and systems diagrams.

Candidates must be able to use all of the elements of a Data flow diagram correctly including:

- flow direction line
- process
- entity
- data store

Data dictionaries.

Entity Relationship diagrams.

Candidates should understand that a 'Data Model' includes an:

Entity - Places, object or people represented by data in a spreadsheet or database

Attribute - Information of facts about an entity

Entity relationship modelling - candidates should be able to draw and interpret ERM diagrams: one to one, one to many, many to many.

System Design

Design of hardware, software, data and file structures, information systems, network and data transmission issues, personnel issues and security processes and procedures.

System Implementation

Acquisition and installation of hardware and software re-training.

Appropriateness of different changeover strategies including 'direct' and 'parallel running'.

System Maintenance

Technical and User Documentation.

Maintenance issues including identification of errors, security issues, changes in the business environment, dissatisfaction with hardware and software, updating the system

Perfective, Adaptive, Corrective maintenance

System Evaluation

Criteria for evaluating a system.

Understand the tools and their appropriateness for gathering information for the evaluation report including quantitative test, Error Logging Interviews, Questionnaires

Methods of avoiding post implementation cost

Revision Material

AS and A Level ICT
Oxford Revision Guides

ISBN: 9780199150748

Candidates should also be encouraged to read newspapers and magazines with a critical eye.

In addition, teachers and lecturers of ICT may find useful support from their subject association.

Websites

WJEC for specifications and specimen assessment materials. Other materials such as past papers, mark schemes and item level data are made available free of charge to registered centres through the secure web site.

For other enquiries or information, visit

<http://www.wjec.co.uk>

<http://www.wjec.co.uk/index.php?subject=72&level=21&imageField2.x=25&imageField2.y=11>

The WJEC Website also gives information on courses and INSET.

<http://www.wjec.co.ukdevelopment>

National Grid for Learning - Cymru

A particular source of resources and support for teachers of WJEC ICT GCE AS/2 can be found on the National Grid for Learning Cymru by teachers of ICT in both Welsh and English. Additional material is planned and is being prepared for the site. Much of this material is intended to be downloaded so that it can be edited by teachers to suit the needs of their own candidates and centres.

<http://www.ngfl-cymru.org.uk>

http://www.ngfl-cymru.org.uk/eng/vtc-home/vtc-aas-home/vtc-as_a-ict/vtc-as_a-ict-wjec

Of particular note is the material prepared by Cynnal:

http://www.ngfl-cymru.org.uk/eng/as_unit_ict1

The list of websites is comprehensive and the links are checked regularly to ensure that they are still live and of use to teachers. Please contact NGfL Cymru if you become aware of new and useful sites.

Please keep returning to this site as new materials become available. It is hoped that teachers will be willing to contribute their own work and ideas to this site for the benefit of colleagues in other centres.

General Websites

Theteacher99 web site is an extensive on line teaching resource with CD support.

<http://www.theteacher99.btinternet.co.uk/theteacher/index.htm>

Other Resources

As more resources and materials suitable for teachers become available, this support booklet will be updated to take account of new ideas. Teachers may wish to bring their ideas and suggestions to INSET sessions so that they can be more widely disseminated to support colleagues. We would be pleased to receive further suggestions and ideas in order to improve future editions of this guidance material.

Please Note: There is no obligation on either teachers or students to work their way through this material. Whilst some of the texts suggested might not be suitable for candidate use, they would be appropriate for teachers who are interested in refreshing or extending their knowledge of more recent developments in ICT.

3. ASSESSMENT GUIDANCE

All WJEC mark schemes are published, and centres are advised to make use of this facility. Part of the purpose of the mark scheme, therefore, is to demonstrate good responses. Centres should note, however, that the primary purpose of the mark scheme is for the examiners, who are required to attend a full-day conference to establish the agreed mark scheme. Reading the mark scheme alone cannot reproduce this experience.

Examiners' Report

A report is produced by the Chief and Principal Examiner each session (i.e. after the January and the Summer examinations). This is available on the WJEC web site, and provides useful information to centres, both at the individual question level and more generally.

General Points

The IT1 paper uses the question and answer booklet format, where candidates answer in the spaces provided. IT3 requires candidates to write their response in a conventional answer booklet, and there are currently no plans to change to a question and answer booklet format for IT3.

Candidates should be reminded to pay attention to the maximum number of marks available in each part question, as stated in the rubric for each paper. Experience suggests that, whereas most candidates tailor their answer to the number of marks available, some appear to spend disproportionate amounts of time on some part questions which have only one mark allocated to them. On other occasions candidates give very brief answers to parts where two or more marks are available.

In the case of the IT1 paper, the number of lines printed under each question / part question should also be noted by candidates, since it should provide an indication of the length of the response expected.

Each year, some candidates lose marks in not relating their responses to the question context. If a question describes a specific context, and invites the candidates to refer to the context then marks will be lost if this is not done.

It is always the case that some weaker candidates lose marks through the apparent inability to express themselves clearly. Candidates should be reminded that legible handwriting is important throughout the whole paper. Examiners will not guess the word: if it is not clear, then no mark will be awarded.

Two questions on each paper, only, involve specific language assessment. Up to five percent of marks may be lost if the quality of written communication in the response is inadequate.

To gain high marks, candidates need to write extended answers where appropriate. It should be noted that answers do not need to be in standard prose, and in fact the use of bullet point form is often acceptable and can help the candidates in shepherding their thoughts. However, it is not seen as desirable for candidates to be able to gain full marks by giving, for instance, one word or a short phrase (or a number of one word/phrase bullet points) when an extended answer is required in the question. Furthermore, centres and candidates are reminded of the value of giving examples. A good example, even if not specifically requested, can often help to secure a mark when a description is lacking in clarity or detail. This approach is not required for *all* questions. It is important to remember that if a part question asks the candidate to *name* three items, with three marks, one word or phrase answers will be perfectly acceptable. Similarly, a question may ask for the *definition* of a term for one mark. Again, a short response is all that is required. Further guidance on suitable level of response is given in the mark schemes accompanying the Specimen Assessment materials available on the WJEC website.

4. IT1 SPREADSHEET MODELLING

Questions in Section B of the unit 1 examination will relate to a spreadsheet modelling task carried out by the candidate. The questions will focus on the following areas.

USER REQUIREMENTS
What the purpose of the spreadsheet is?
What are the detailed outcomes? <ul style="list-style-type: none"> • <i>User interface, sheets, features to be used,</i> • <i>Processes including searches sort validations automated processes</i> • <i>Outline calculations and results required</i> • <i>Reports to be printed.</i>
DESIGN and IMPLEMENTATION
Identify and explain the purpose of; <ol style="list-style-type: none"> 1. Labels, data, 2. Formulas Any two from Group A and two from Group B <p>Group A</p> <ul style="list-style-type: none"> – <i>SUM</i> – <i>COUNT</i> – <i>MAX</i> – <i>MIN</i> – <i>AVERAGE</i> – <i>RAND</i> <p>Group B</p> <ul style="list-style-type: none"> – <i>SINGLE IF</i> – <i>MULTIPLE IF</i> – <i>DATE</i> – <i>ROUND</i> <ol style="list-style-type: none"> 3. Multiple sheets and 3D links (<i>Sheets!</i>) 4. Simplification of data entry <ul style="list-style-type: none"> • <i>drop down list boxes</i> • <i>Lists</i> • <i>Spinners</i> • <i>logical True or False or Tick Boxes or Option boxes</i> • <i>lookup or vlookup or hlookup tables</i> 5. Ease of use and professionalism <ul style="list-style-type: none"> • <i>startup user interface</i> • <i>data entry forms</i> • <i>Control buttons should be used to initiate macros. e.g. navigation / print / data transfer</i> 6. Error trapping e.g. <i>validation techniques and error messages produced</i> NOT spinners or lists 7. Processing <ul style="list-style-type: none"> • <i>sorting techniques</i> • <i>Search for specific criteria e.g. single and multiple criteria</i> 8. Appropriate use of graphs <i>such as bar or column graphs, line graphs, pie charts, scatter graphs, pictographs.</i> Must relate to own spreadsheet not general descriptions and must be clearly evidenced in the submitted spreadsheet.

EVALUATION

1. Reflect on what they did or what worked
2. Be **critical** on some aspects of the spreadsheet or system which could be improved
3. Future developments to the spreadsheet or system

GENERAL QUESTIONS ON SIMULATION MODELLING

Candidates should understand and be able to discuss the following;

- Definition of a simulation model.
- Uses of simulation modelling for weather forecasting, car crash analysis and financial forecasting.
- Advantages and disadvantages of using simulation models.
- Issues relating to hardware used for simulation modelling, including parallel and distributed processing.

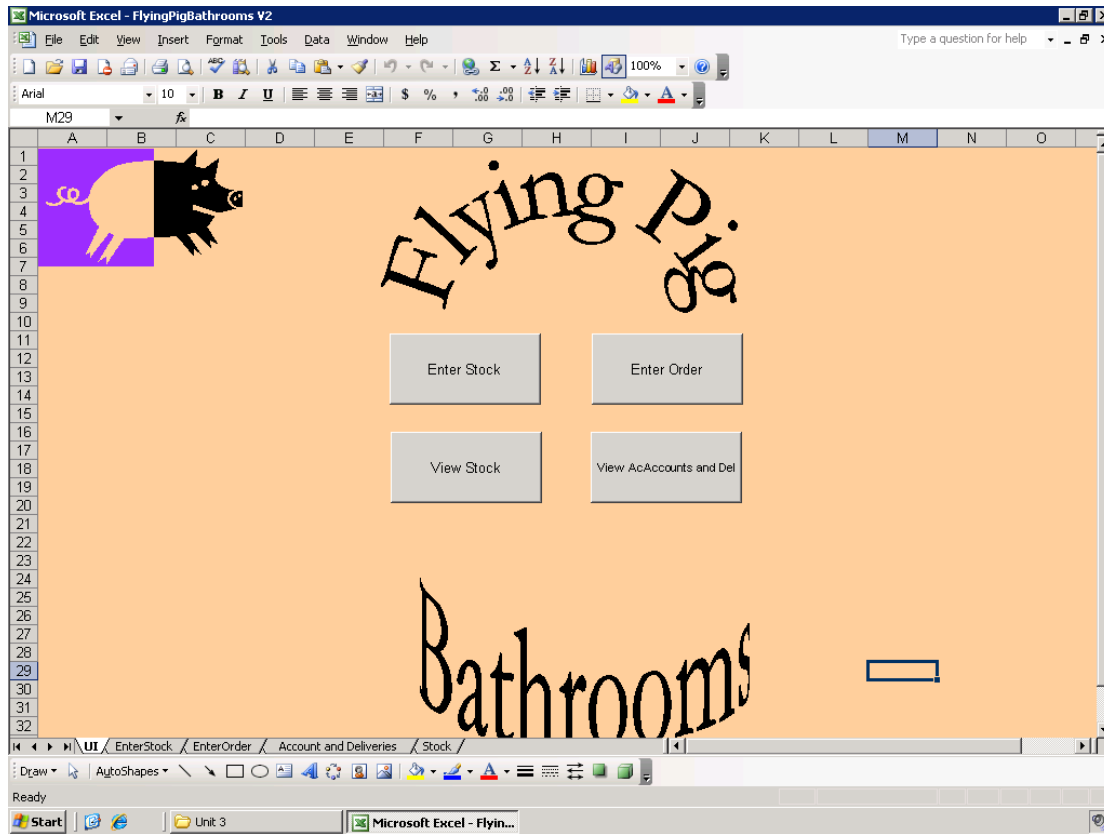
Spreadsheet evidence for ICT Unit 1

- **Spreadsheet evidence should be restricted to printouts or screenshots in both ordinary and formula view with no annotation other than the headings. The centre is responsible for ensuring that the candidate has not annotated the printouts.**
- **It is up to the candidate to ensure that all features and formulas are readable and visible to the examiner.**
- **The printouts should be attached to the declaration sheet provided by WJEC.**
- **These should then be given to the examinations officer who will give them back to the pupils at the beginning of the examination.**
- **The spreadsheet printouts and declaration sheet, signed by both the teacher and the candidate, must be attached to the candidates script and sent with it to the Examiner notified by WJEC.**

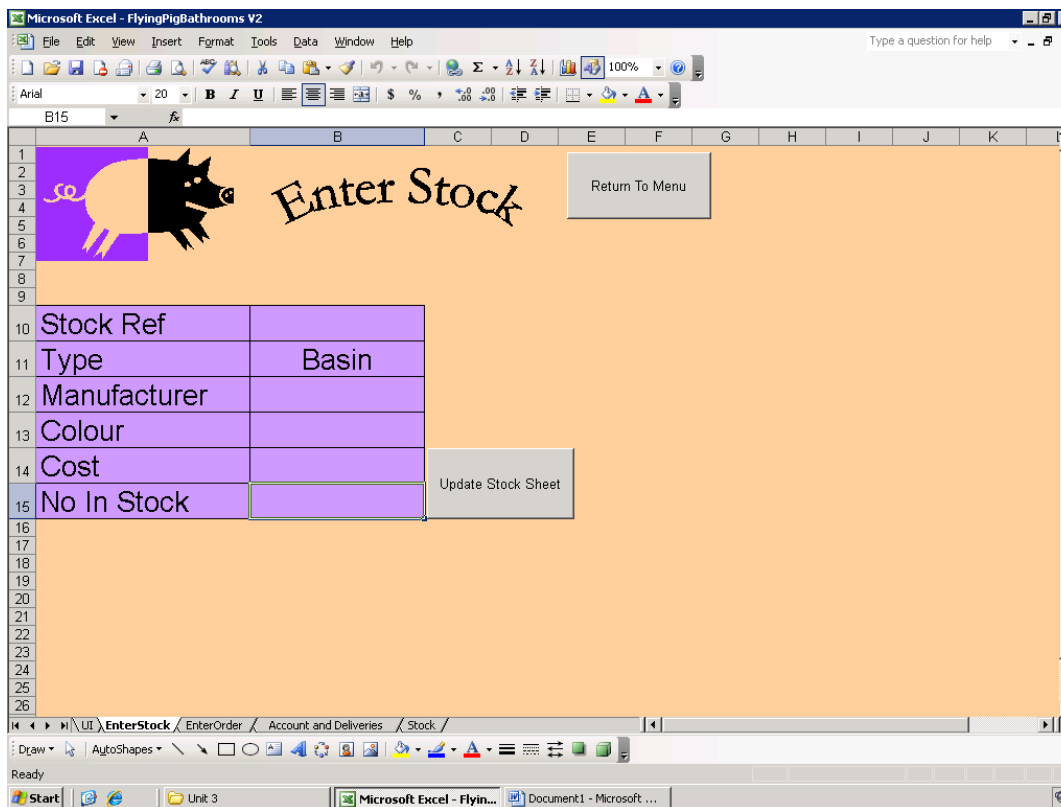
The following is an example of what the portfolio might look like.

Thanks to Wales High School for the use of this spreadsheet.

User interface



Sheets in data view




Microsoft Excel - FlyingPigBathrooms V2

File Edit View Insert Format Tools Data Window Help

Type a question for help

Arial 10 B U

H29 =IF(B13="Trade",0.2*H28,IF(B13="Regular",0.1*H28,IF(B13="Builder",0.05*H28,0)))



Flying Pig Bathrooms

Print Order

10	Order Number	1234			Customer Name	Mrs G Hemming
11	Date of Order	9/12/2007			Address 1	19 West Bank Drive
12	VAT Rate	17.5			Address 2	South Anston
13	Discount Rate	Builder			Address 3	Sheffield
14					PC	S25 5HT

15	Stock Ref	Description	Cost Per Unit	Units Required	Subtotal Inc VAT	
16	1234	Dolphin Basin White	£45.99	1	£54.04	
17	1200	Stalrad Doulton Basin Ped Blue	£67.00	1	£78.73	
18	1001		£0.00	0	£0.00	
19	1001		£0.00	0	£0.00	
20	1001		£0.00	0	£0.00	
21	1001		£0.00	0	£0.00	
22	1001		£0.00	0	£0.00	
23	1001		£0.00	0	£0.00	
24	1001		£0.00	0	£0.00	
25					Total Ex Del	£132.76
26					Del Reqd	<input checked="" type="checkbox"/>
27					Cost Delivery	£50.00
28					Total Inc Del	£182.76
29					Discount	£9.14
30	Date Required	9/15/2007			Amount Owing	£173.63

Ready

Unit 3 Microsoft Excel - Flyin... Document1 - Microsoft ...


Microsoft Excel - FlyingPigBathrooms V2

File Edit View Insert Format Tools Data Window Help

Type a question for help

Arial 10 B U

H12 No



Accounts

11	Order Number	Amount Owing	Customer Name	Date Required	Delivery Reqd	Paid
12	1234	£173.63	Mrs G Hemming	9/15/2007	TRUE	Yes
13	1675	£234.99	Mr T Booth	10/19/2007	FALSE	No
14	1788	£569.76	Mrs J Evans	8/14/2007	TRUE	Yes
15	1244	£221.50	Mrs G Hemming	8/19/2007	TRUE	No
16	3456	£456.70	Mr T Booth	11/15/2007	FALSE	Yes
17	3425	£564.60	Mrs G Hemming	9/15/2007	FALSE	No
18	6665	£231.50	Mr T Booth	10/19/2007	TRUE	Yes
19	5454	£123.50	Mrs J Evans	8/14/2007	TRUE	No
20						No
21						No
22						No
23						No
24						No
25						No
26						No
27						No
28						No
29						No
30						No
31						No
32						No

Ready

Unit 3 Microsoft Excel - Flyin... Document1 - Microsoft ...

Sheets in formula view

Microsoft Excel - FlyingPigBathrooms V2

File Edit View Insert Format Tools Data Window Help

Type a question for help

Arial 10 B I U

H29 =IF(B13="Trade",0.2*H28,IF(B13="Regular",0.1*H28,IF(B13="Builder",0.05*H28,0)))

Stock Ref	Description	Cost Per Unit	Units Required
1234	=VLOOKUP(A16,Stock,3)	=VLOOKUP(A16,Stock,2)	=VLOOKUP(A16,Stock,4)
1200	=VLOOKUP(A17,Stock,3)	=VLOOKUP(A17,Stock,2)	=VLOOKUP(A17,Stock,4)
1001	=VLOOKUP(A18,Stock,3)	=VLOOKUP(A18,Stock,2)	=VLOOKUP(A18,Stock,4)
1001	=VLOOKUP(A19,Stock,3)	=VLOOKUP(A19,Stock,2)	=VLOOKUP(A19,Stock,4)
1001	=VLOOKUP(A20,Stock,3)	=VLOOKUP(A20,Stock,2)	=VLOOKUP(A20,Stock,4)
1001	=VLOOKUP(A21,Stock,3)	=VLOOKUP(A21,Stock,2)	=VLOOKUP(A21,Stock,4)
1001	=VLOOKUP(A22,Stock,3)	=VLOOKUP(A22,Stock,2)	=VLOOKUP(A22,Stock,4)
1001	=VLOOKUP(A23,Stock,3)	=VLOOKUP(A23,Stock,2)	=VLOOKUP(A23,Stock,4)
1001	=VLOOKUP(A24,Stock,3)	=VLOOKUP(A24,Stock,2)	=VLOOKUP(A24,Stock,4)

Order Number: 1234
 Date of Order: 39337
 VAT Rate: 17.5
 Discount Rate: Builder
 Date Required: 39340

Microsoft Excel - FlyingPigBathrooms V2

File Edit View Insert Format Tools Data Window Help

Type a question for help

Arial 10 B I U

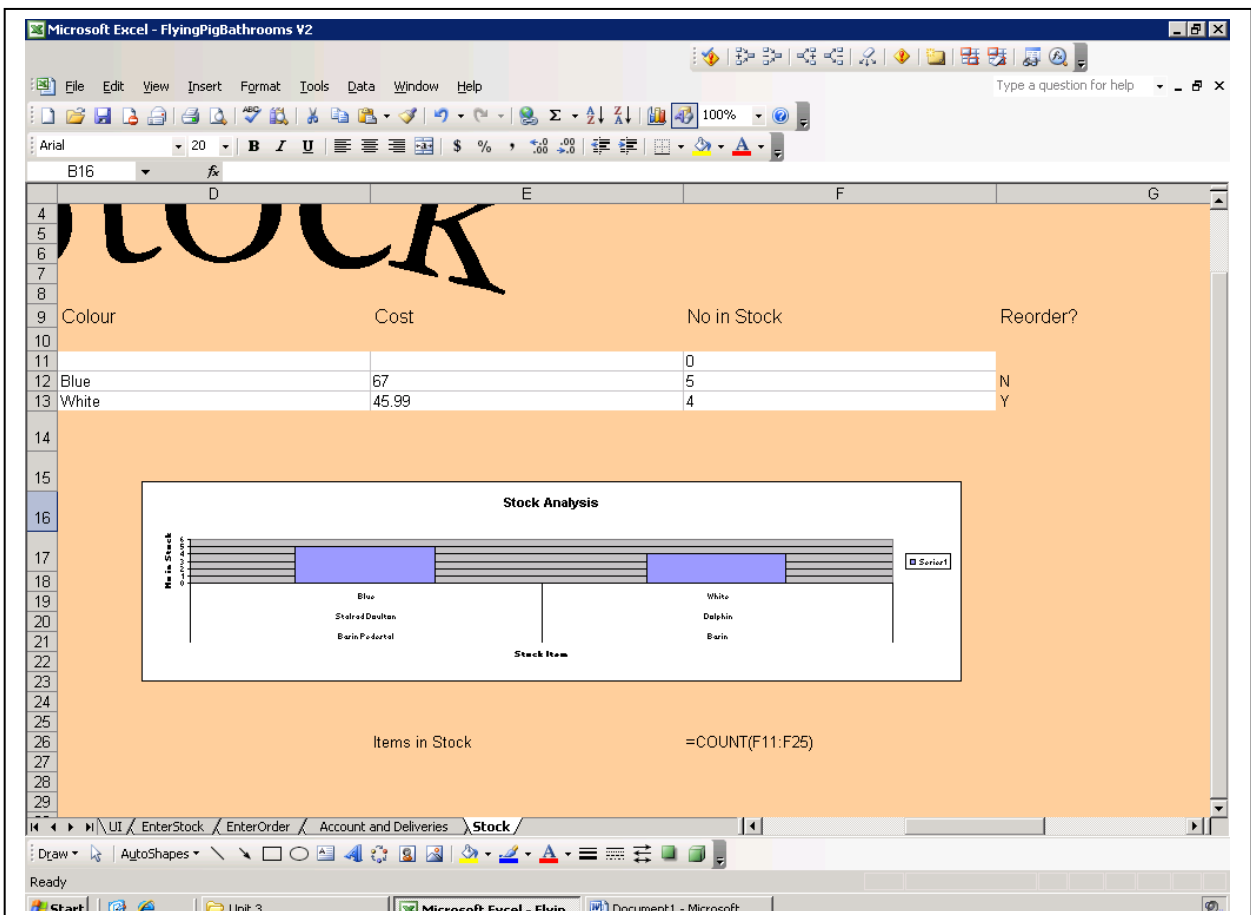
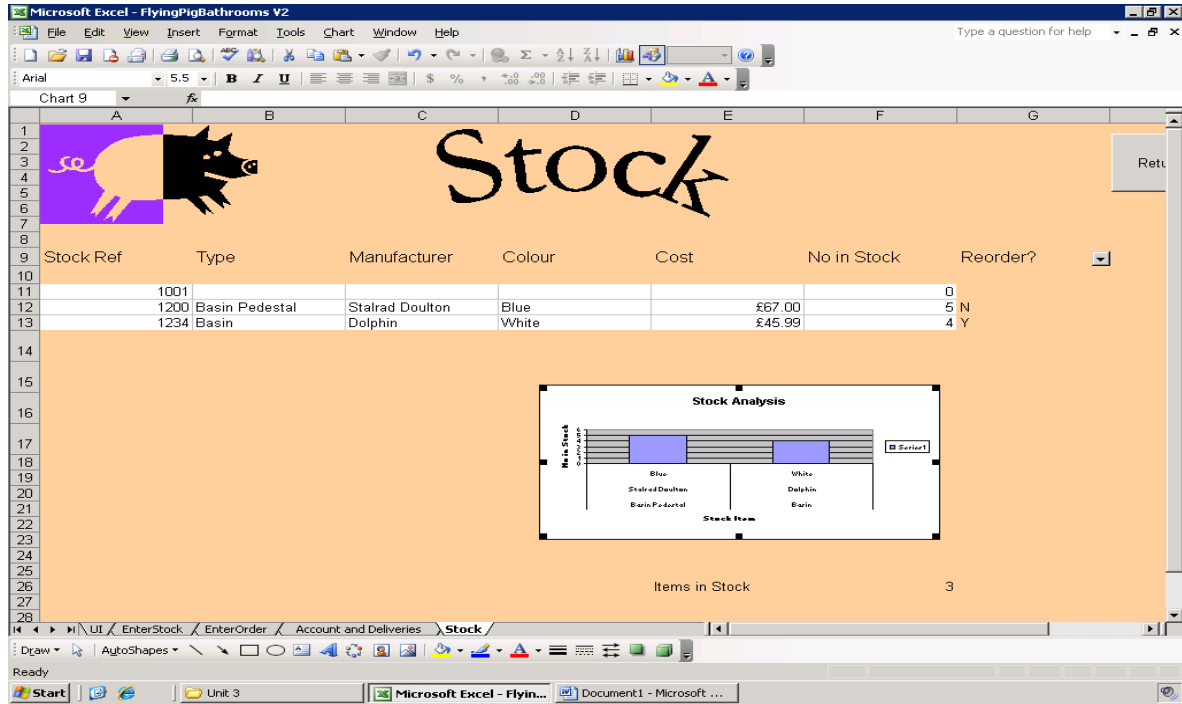
H29 =IF(B13="Trade",0.2*H28,IF(B13="Regular",0.1*H28,IF(B13="Builder",0.05*H28,0)))

Bathrooms

Customer Name: Mrs G Hemmin
 Address 1: 19 West Bank
 Address 2: South Anston
 Address 3: Sheffield
 PC: S25 5HT

Cost Per Unit	Units Required	Subtotal Inc VAT
=VLOOKUP(A16,Stock,5)	1	=(1+\$B\$12/100)*E16*G16
=VLOOKUP(A17,Stock,5)	1	=(1+\$B\$12/100)*E17*G17
=VLOOKUP(A18,Stock,5)	0	=(1+\$B\$12/100)*E18*G18
=VLOOKUP(A19,Stock,5)	0	=(1+\$B\$12/100)*E19*G19
=VLOOKUP(A20,Stock,5)	0	=(1+\$B\$12/100)*E20*G20
=VLOOKUP(A21,Stock,5)	0	=(1+\$B\$12/100)*E21*G21
=VLOOKUP(A22,Stock,5)	0	=(1+\$B\$12/100)*E22*G22
=VLOOKUP(A23,Stock,5)	0	=(1+\$B\$12/100)*E23*G23
=VLOOKUP(A24,Stock,5)	0	=(1+\$B\$12/100)*E24*G24
Total Ex Del		=SUM(H16:H24)
Del Req		<input checked="" type="checkbox"/>
Cost Delivery		=IF(H26=TRUE,50,0)
Total Inc Del		=H25+H27
Discount		=IF(B13="Trade",0.2*H28,IF(B13="Regular",0.1*H28,IF(B13="Builder",0.05*H28,0)))
Amount Owing		=H28-H29

Graphs



Sorting Evidence

Before sort

	A	B	C	D	E	F
1	Member no.	Member name	House name/No.	Street/Village	Town	Phone No.
2	4	Adrian Sutton	Caemadog house	Cilcennin	Lampeter	01570 471 156
3						
4	Name of product	Product price code	Product price	Quantity	Total price	Date of order
5	Pirates	6745	£5.00	2	£10.00	10/04/07
6	King Arthur	1254	£4.00	1	£4.00	09/06/07
7	Shrek	5643	£6.00	2	£12.00	03/11/07
8	Legally Blonde	2000	£5.00	4	£20.00	09/12/07
9	Braveheart	1099	£3.00	1	£3.00	11/12/07
10				Subtotal	£49.00	
11				Delivery charge		
12				VAT	£8.58	
13				Total	£57.58	

After sort

	A	B	C	D	E	F
1	Member no.	Member name	House name/No.	Street/Village	Town	Phone No.
2	4	Adrian Sutton	Caemadog house	Cilcennin	Lampeter	01570 471 156
3						
4	Name of product	Product price code	Product price	Quantity	Total price	Date of order
5	Braveheart	1099	£3.00	1	£3.00	11/12/07
6	King Arthur	1254	£4.00	1	£4.00	09/06/07
7	Legally Blonde	2000	£5.00	4	£20.00	09/12/07
8	Shrek	5643	£6.00	2	£12.00	03/11/07
9	Pirates	6745	£5.00	2	£10.00	10/04/07
10				Subtotal	£49.00	
11				Delivery charge		
12				VAT	£8.58	
13				Total	£57.58	

Search

Member no.	Member name	House name/No.	Street/Village	Town	Phone No.
4	Adrian Sutton	Caemadog house	Cilcennin	Lampeter	01570 471 156
Name of produ	Product price code	Product price	Quantity	Total price	Date of order
King Arthur	1254	£4.00	1	£4.00	09/06/07

Validation

Member no.	Member name	House name/No.	Street/Village	Town	Phone No.
4	Adrian Sutton	Caemadog house	Cilcennin	Lampeter	01570 471 156
Name of produ	Product price code	Product price	Quantity	Total price	Date of order
Pirates	6745	£5.00	2	£10.00	10/04/07
King Arthur	1254	£4.00	1	£4.00	09/06/07
Shrek	5643	£6.00	2	£12.00	03/11/07
Legally Blonde	2000	£5.00	4	£20.00	09/12/07
Braveheart	1099	£3.00	1	£3.00	11/12/07
Subtotal				£49.00	
Delivery charge					
VAT				£8.58	
Total				£57.58	

NB Construction of validation techniques would also be permissible. Remember validation is not a spinner or list box as these are recorded as a feature

5. IT2 ASSESSMENT GUIDANCE

The following guidance amplifies the mark scheme for the unit 2 coursework.

This unit requires candidates to use ICT hardware and software applications to solve a problem involving three separate tasks: the production of (i) a document such as a leaflet or magazine (ii) a document containing automated routines, such as a mail merged letter. (iii) a presentation to an audience, such as a web page or PowerPoint type show.

An outline of the requirements of the three tasks is presented in the table below, which lists the features (basic and advanced) that should be included in each submission.

ICT2 Presenting Information			
Background			
Existing data processing activities			
Tasks	Examples	Basic features	Advanced Features
	<i>Candidates must do all tasks</i>	<i>Candidates should use all of these features</i>	At least five of the following are required to access the higher mark ranges.
Task 1 DTP Design & produce a document of at least two A4 sides and containing at least 150 words	<ul style="list-style-type: none"> ▪ Leaflet or magazine 	<ul style="list-style-type: none"> ▪ Use of different font styles ▪ Use of different font sizes ▪ Use of bold, centre & underline ▪ Right or fully justify ▪ Autosshapes ▪ Bullet points ▪ WordArt ▪ Shading effects ▪ Headers and footers ▪ Use of at least two forms of electronic combination of graphical images e.g. scanned images, graphics from the Internet, clipart from disc, digital camera images, graphs from a spreadsheet, graphics from a paint or CAD package ▪ Tables 	<ul style="list-style-type: none"> ▪ Customised tables ▪ Different paragraph formats ▪ Different line spacing ▪ Superscript and subscript ▪ Page or frame borders ▪ Set and use own tabs ▪ Set and use own indents ▪ Watermarks ▪ Pagination ▪ Use of layering (<i>forward and behind</i>) ▪ Create own style sheets
Task 2 Automated documents Design & produce documents containing automated routines	<ul style="list-style-type: none"> ▪ Mailmerge letters 	<ul style="list-style-type: none"> ▪ Import data from an external source ▪ Design and use of suitable format and layout for data ▪ Ensure automated routines work 	<ul style="list-style-type: none"> ▪ Individual macros or modules created using internal programming capabilities of the software package ▪ Individually designed templates (<i>other than the normal template or standard templates provided by wizards in the software package</i>)
Task 3 Presentation Design & produce a presentation of at least six slides / pages for an audience	Either a <ul style="list-style-type: none"> ▪ PowerPoint type presentation Or <ul style="list-style-type: none"> ▪ Web pages 	<ul style="list-style-type: none"> ▪ Background styles ▪ Animation effects ▪ Transition effects ▪ Hypertext ▪ Hotspots ▪ Bookmarks 	<ul style="list-style-type: none"> ▪ Use of sound ▪ Use of original video ▪ Use of original animation / Flash graphics

General Points

Work should not be submitted in ring binders or bound in such a way that it is not possible to detach evidence.

Candidates should;

- not waste time providing evidence which is not required (see later section).
- avoid cropping their work too much thus destroying the evidence.
- provide screenshots which were so small they were not readable.

Sometimes it is difficult to distinguish between implementation and design. Showing evidence of something implemented is not evidence of the design of user requirements.

Again candidates should clearly explain or justify their 'ethos' and house style. The ethos must be explained for all three tasks not just one global statement at the start.

Candidates should note that age group or target audience is not ethos or house style.

Two useful PowerPoint presentations produced by the senior examining team can be found on the CD issued at INSET events.

'Unit 2 presentation' expands on the requirements of the specification and 'Image and Ethos' is a presentation which can be used with candidates as an introduction to this area of the specification.

Detailed Assessment Grid

Components	Criteria	Mark	
Background	<p>Description of the organisation Candidates should clearly describe where it is and what the organisation is/does.</p>	2	
	<p>Ethos and house style Identification of 3 types of documents used by the organisation and the function or purpose of each.</p>	1	
	<p>Analysis of existing publication(s) to determine 'house style' Candidates must not confuse image/ ethos with the target audience or use vague phrases. Phrases such as '<i>interesting</i>', '<i>informative</i>', '<i>colourful</i>' are not ethos. In order to gain the mark candidates needed to identify the philosophy, vision or persona being reflected by the document or justify why a particular icon or colour scheme has been used.</p>	1	
<p>Data processing activities within the organization</p> <p><i>These could be actual automated documents or manual documents which have the potential to be an automated activity e.g. membership cards.</i></p> <p><i>Alternatively for presentation and web page if none exist at the moment.</i></p> <p><i>What does the user want the candidate to produce?</i></p>	<p>Desktop Publishing 1 mark if candidate identifies at <u>least 2 documents</u> and states the purpose of each. (<i>if only 1 document then 0 marks</i>) 1 mark <u>4 techniques used</u> e.g. tables, bullets, etc.</p>	1	
	<p>Automated documents 1 mark for details of purpose of the document 1 mark for details of data which 'could be' or 'is' merged</p>	1 1	
	<p>Presentation or web page (actual or potential) 1 mark for purpose</p>	1	
	<p>1 mark for data and special features e.g. video, sound, animations which are included or could be included</p>	1	

Use of advanced features	Each of the following may be awarded one mark – up to a maximum of 5 marks for this section. Note that the features must appear on the final document not just in a report. No marks can be awarded for features which do not appear on the final document	MAX 5
Before and after evidence required or no marks will be awarded.	Different paragraph formats	1
	Different line spacing	1
	Appropriate use of superscript and subscript <i>Sensible use - any nonsense use should not be awarded a mark; not automatically produced e.g. 7th – must see before and after.</i>	1
	Set and use own tabs NOT the default tab setting on bullets	1
	Set and use own indents Use of layering (<i>forward and behind</i>) <i>NOT just construction or moving on top</i>	1 1
Construction evidence needed	Watermarks	1
	Own style sheets	1
Can be clearly seen on final printed document so no need for extra evidence	Customised tables <i>NOT shading in tables and border must be cell merging or changing the text orientation inside the table</i>	1
	Page or frame borders	1
	Pagination <i>Must appear on the same place on every page</i>	1

If candidates give detailed explanations of double line spacing or paragraph formatting, etc. and explain how it could be done in general but do not relate it to their document and it does not appear in their leaflet they do not get marks.

Candidates should be aware that dialogue boxes sometimes obscure the feature they are intending to highlight so no before can be seen only an after. In this case they cannot receive a mark.

The following areas require more detailed definition.

- **Setting own indents and tabs.** Candidates need to be careful when setting own indents and tabs and ensure there is before and after evidence and that the indents and tabs can be clearly seen on the final document
- **Own paragraph format** should **not be** just a simple centre right or fully justified alignment which is catered for earlier in the basic skills section. Acceptable formats tend to be paragraphs indented from the main body on both the left and right hand sides or normal text (*not WordArt*) wrapped around a particular shape.
- Both **superscript and subscript** need to be used and it is essential that before and after screenshot evidence is given or candidates will not be awarded the mark. (Centres should discourage candidates from inappropriate or nonsense use of superscript and subscript)
- **Customised tables** involve the idea of merging cells or mixing text orientation. Shading tables or turning on frame borders is not acceptable. Marks are awarded elsewhere for such techniques.

Task 2 – AUTOMATED DOCUMENTS		
Components	Criteria	Mark
Design of document Note all of the underlined in each section must be there in order to give a mark	Purpose of document Image / ethos being conveyed	1 1
	Detailed design of document Note annotation of documents is not design	
	<ul style="list-style-type: none"> 1 mark awarded for the <u>basic layout and page orientation</u> 	1
	<ul style="list-style-type: none"> 1 mark awarded for identification of automated features including <u>both mailmerged fields and macros.</u> 	1
	<ul style="list-style-type: none"> 1 mark for <u>both font styles and sizes to be used</u> 1 mark awarded for the <u>contact data</u> on the document including <u>logo/graphics</u> and description of the <u>data in the letter.</u> 	1 1
Use of basic features	Import data from an external source 1 mark awarded for the word processed template document showing the fields incorporated into the document <i>The letter must not be cropped and should clearly identify both the merged fields and their position on the document; we should see the <u>contact details</u> and the <u>data in the letter/document.</u></i> <i>This cannot just be a letter headed notepaper type document with merged fields. It is the whole letter for the stated task.</i>	1
	1 mark for evidence of the database used, usually a screenshot or printout. <i>No need to show creation of the database.</i>	1
	Use of suitable format and layout for data 1 mark for a suitable letter which addresses all of the following Does it address the stated purpose? Does it have contact details on? If it is a letter does it have a date? Does the body of data contain all the required information e.g. place and time if applicable?	1
	1 mark If there is a suitable format and layout <u>NOT ONE MISTAKE</u> No capital letter or spelling mistakes in the letter or in the data imported from the database. Names and addresses in the database have to be realistic and not nonsense. Basic grammar such as full stops at the end of sentences. Not a mixture e.g. street - Street	1

	<p>Not Dear Mr Davies and Dear Mr Davies, Not mr Not Sa56Fgy (Mixture of upper and lower case characters in postcode) The layout has to be clear not squashed into the top third of the page and should not contain graphics put in as watermarks which obscure the writing. Not inconsistencies e.g. Beach Club / Beach club, or headteacher /head teacher /Headteacher</p> <p>NB Allow Sincerely/sincerely Allow indented and non indented letters Allow 12th of May and 12th of May Allow 7pm and 7 pm and 7 p.m. Allow SA46ODT / SA46 ODT</p> <p>Ensure automated routines work 1 mark for printouts of the letter. There should be <u>6 records / merged documents</u> <u>If less than this do not give a mark</u></p> <p>1 mark given if there are no spacing errors in the merged data. Do not allow double spacing e.g. Dear Mr</p>	<p>1</p> <p>1</p>
<p>Use of advanced features</p>	<p>Individual macros or modules created using internal programming capabilities of the software package To get these marks a candidate could: Either Provide 3 simple play and record macros Or write their own individual code in VB</p> <p>If 3 simple play and record macros on the single document these should show evidence that they work including names of macros, key presses or toolbar icons used.</p> <p>NOTE Do not award marks for macros which already exist on the standard and formatting toolbars, e.g.</p> <ul style="list-style-type: none"> • NO Print macros • NO Save macros • NO Print preview macros, etc, • NO change font macros <p>NO cut and paste macros NO nonsense macros NO date macros except those created by Insert...date.</p> <p>Evidence of recording the three macros with <u>the actual template letter in the background</u> or evidence of testing each macro is required <i>We must see the template document in the background of the screenshot.</i> <i>We must see the result of the macro on the document e.g. the date in the position it was inserted.</i> The code for each of the macros must be included or no marks can be awarded. If macro coded in VB marks awarded for evidence of:</p> <ul style="list-style-type: none"> ▪ a macro using original visual basic code or the 	<p>1</p> <p>1</p> <p>1</p> <p>MAX 3 marks</p>

	<p>programming capabilities of the software. (1 mark)</p> <ul style="list-style-type: none"> ▪ the macro tested and evidenced as screenshots and the code printed out (1mark) ▪ each line of the code annotated by the candidate to show understanding. (1 mark) <p>Individually designed templates (NOT the standard default the normal template) To get these marks the candidate could have</p>	<p>1</p> <p>1</p> <p>1</p>
Any three of the following Max 3 marks		
	Mailmerge document saved as a template document capable of being reused	1
	<p>For one of their macros, a button icon they have designed and added to a toolbar</p> <ul style="list-style-type: none"> • Screen shot evidence has to be provided. • Not the default buttons generated • Note we must see the buttons added to the toolbar with the mailmerged letter clearly also in view. • EVIDENCE MUST NOT BE CROPPED 	1
	<p>Shows use of template document for another use.</p> <ul style="list-style-type: none"> • Must use the same template and database. The data will simply be altered. • Must have new mailmerged template printed out • Must have 6 records printed out. • Must have no spelling, capital letter or basic grammar mistakes 	1
	Created own style sheets - screen shot evidence has to be provided. This could be part of their <u>re-use of the template design</u> (Not original), or a separate document.	1
	<p>Created standard documents such as invoices, application or survey forms and questionnaires which contain automated features such as tick boxes or list boxes or automatically calculated fields.</p> <p>This document should relate to their chosen organization. It could be part of their <u>re use of the template design</u> (Not original), or a separate document.</p>	1

Task 3 – PRESENTATION		
<i>Components</i>	<i>Criteria</i>	<i>Mark</i>
<p>Design of documents</p> <p><i>Must have at least 6 slides or all marks for purpose and design will be lost</i></p>	Purpose of document Image / ethos being conveyed	1
	Detailed design of documents/presentation/web page Note annotation of documents is not design so screenshots or handouts will not be credited.	1
	<ul style="list-style-type: none"> • 1 mark is for the basic background style and outline layout of the presentation with inherent page orientation and identification of which frames are text and which are for pictures 	1
	<ul style="list-style-type: none"> • 1 mark is for details of the data both text and graphics in these frames including original and non original graphics 	1
	<ul style="list-style-type: none"> • 1 mark if there are added details of fonts and font sizes to be used. • 1 mark is for 6 details of the special features they have used e.g. of internal animation, transition, hotspots, hypertext, bookmarks sound, video, animations etc. • Structure diagram showing pathways 	1
<p>Use of basic features</p> <p>Candidates should not produce detailed reports on how they did bold font and how they used Wordart and how they put text boxes in where this bears no relevance to the presentation or web features</p> <p>Must be 6 slides or pages</p> <p>Candidates should be very careful not to crop evidence or make screenshots so small they cannot be read.</p>	<p>Background styles</p> <ul style="list-style-type: none"> • Candidates must design their own and not use a pre defined template. • It must have a consistent theme or house style, e.g. consistent colour scheme, presentation style, logo in same position on every page 	1
	<p>Animation effects</p> <ul style="list-style-type: none"> • Effects must be seen on the slide or web page. If evidence is so cropped that you cannot see part of the slide or web page in the background the mark cannot be awarded 	1
	<p>Transition effects</p> <ul style="list-style-type: none"> • Effects must be seen on the slide or web page. If evidence is so cropped that you cannot see part of the slide or web page in the background the mark cannot be awarded 	1
	<p>Hypertext (Link to external file)</p> <ul style="list-style-type: none"> • Must show object and URL address or directory • Must appear on final presentation or web page 	1
	<p>Hotspots (Picture/graphic which links to internal or external object or file)</p> <ul style="list-style-type: none"> • Must show object and URL address or directory or slide • Must appear on final presentation or web page 	1
	<p>Bookmarks /Anchor(Link to internal slide/object or file)</p> <ul style="list-style-type: none"> • Must show object and URL address or directory or slide • Must appear on final presentation or web page 	1

Use of advanced features	Use of sound 1 mark simple use e.g. <ul style="list-style-type: none"> • Sound coming in automatically from a video accepted only if evidence in transcript or if you see them speaking / they say they gave an introduction. At least 3 sentences and a transcript must be provided. • Internal sound features of PowerPoint or 'Clapping noise' • Import sound files from disc Evidence must show it was used in the presentation or web page	1
	1 mark for how the sound was captured? Note this is NOT for loading a file from a backing store e.g. <ul style="list-style-type: none"> • downloaded music from Internet (MP3) • burned from a CD • Used sound recorder in Windows • Dictated sound using a microphone to overlay in PowerPoint • edited or created own sound files • <u>Evidence must be provided of the capture of the sound</u> • <u>Must show it has been used in the presentation or web page</u> 	
	<p><i>2 marks can be awarded for downloading or burning from CD, etc. if there is evidence that this has happened and that it is in the presentation or on the web page</i></p>	
	Use of original video <i>This video must be taken by the candidate. Candidates will be expected to sign this is all their own work. Shared video is not acceptable.</i> Candidates must record the video and put it into their presentation <u>Evidence must be provided</u> (usually in the form of screenshot of the film in editing software). Note Loading film from a backing store is not sufficient evidence of original video as it could have come from Youtube, etc.	1
1 mark for extra detail e.g. planning/story board This mark can only be awarded if all of the following criteria are covered. <ul style="list-style-type: none"> • There must be an overview or outline of what is going on in each frame of the video either in written form or pictorially. • On the story board there must be evidence of a transcript of what is being said or explanation of sound files to be used • There must be timings between frames • There must be planned transition <i>or</i> special effects <i>or</i> titles and credits 	1	

	<p>Video editing effects put on frames e.g. Titles. credits or frame effects i.e. editing effects such as blurring, old fashioned effects, etc. (effects should be annotated)</p>	1
	<p>Video effects put on transitions between frames (effects should be annotated)</p>	1
	<p>Use of original animation / Flash graphics (<i>must be appropriate to the topic – not just e.g. bouncing balls</i>) Simple animation such as:</p> <ul style="list-style-type: none"> • 3d Textmaker • graphic e.g. Wordart grows and shrinks, or • simple ‘flash type animation (two commands) e.g. create ball then make ball bounce, or • simple 2 frame animation in photo editing software <p>NB animated GIFs not produced entirely by the candidate gain no marks.</p>	1
	<p>1 extra mark for more complex graphical animations As above but with at least 3 frames or commands NB animated GIFs not produced entirely by the candidate gain no marks.</p>	1

COMPRESSION AND STORAGE TECHNIQUES

Criteria	Mark									
<p>Note Centres should not give candidates tables to fill in. This is regarded as too much guidance and candidates will receive no marks.</p>										
<p>Identification of method</p> <ul style="list-style-type: none"> • Must cover at least 3 relevant techniques or else only 1 mark • If techniques are not relevant to the documents produced e.g. Zip files then no marks. • If copied and pasted from the Internet then 0 marks 	1									
<p>Justification of chosen method</p> <ul style="list-style-type: none"> • Justified use of their chosen formats in at least 3 areas? • Note <u>examples must mention specific objects or files</u> which appear in their documents, etc. • If only a general description - no marks • if less than 3 techniques - max 1 mark 	1									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Compression</td> <td style="width: 33%;">Identification</td> <td style="width: 33%;">Justification of own stated <u>examples</u></td> </tr> <tr> <td>Did they explain why we use compression techniques?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> </tr> <tr> <td>3 relevant techniques</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> </tr> </table>	Compression	Identification	Justification of own stated <u>examples</u>	Did they explain why we use compression techniques?	1	1	3 relevant techniques	1	1	1
Compression	Identification	Justification of own stated <u>examples</u>								
Did they explain why we use compression techniques?	1	1								
3 relevant techniques	1	1								

EVALUATION	
<i>Criteria</i>	<i>Mark</i>
A detailed and critical evaluation of all three tasks which examines the data, system and suggests future modifications <i>5-6 marks</i>	6
A detailed evaluation of all tasks, which addresses the system and future modification <i>4- 3 marks</i>	
Not all tasks have been evaluated or only a brief evaluation of all three tasks and limited suggestions for future modifications <i>2-1 marks</i>	

Evaluation	Marks					
	Summary of what they did with no sense of why each feature was valuable and no improvements	Summary of what they did with no sense of why each feature was valuable and only sketchy improvements with no solid examples	Evaluation of the features they have used and saying why they add value and concrete suggestion for improvements in at least one task area	More detailed evaluation of the features they have used and saying why they add value and concrete suggestion for improvements in at least two task areas	They should not start to criticise their work What was not good and why - <u>must be concrete and not general</u> In addition they should be evaluating the features they have used and say why they add value plus concrete suggestion for improvements in all task areas	They should now be giving very detailed criticism of all documents produced What was not good and why - <u>must be concrete and not general</u> In addition they should provide a very detailed evaluation of all of the major features they have used across all documents produced saying why they add value plus concrete suggestions for improvements in all task areas
Task	1	2	3	4	5	6
Task 1	Description of what they did	Description of what they did	Outline evaluation	Detailed evaluation	Critical and detailed evaluation	Critical and Very detailed evaluation
Task 2	Description of what they did	Description of what they did	Outline evaluation	Detailed evaluation	Critical and detailed evaluation	Critical and Very detailed evaluation
Task 3	Description of what they did	Description of what they did	Outline evaluation	Outline evaluation	Critical Detailed evaluation	Critical and Very detailed evaluation
Improvements	No Improvements	Improvements in any section	Some concrete improvements in any section	Some concrete improvements on at least 2 sections	Concrete suggestions for improvements in all areas	Concrete and detailed suggestions for improvements in all areas
Coverage	Not all tasks covered and weak	Not all tasks covered but some detail	All Tasks Covered			

An exemplar project 'Exemplar Unit 2' is available for download in pdf format from the WJEC website. In addition the Chief Examiner has provided a commentary on this example 'Exemplar Commentary Rotherham Scouts' which can also be downloaded.

6. ***UNIT GUIDE: IT3***

Guidance for this unit will be added at a later date.

7. IT4 ASSESSMENT GUIDANCE

General Points

- 1 Database projects must be all of the candidates own work. Chosen topics must be an individual project and not part of group work.
2. Database projects should be in 4 distinct sections.
 - User requirements and Design
 - Implementation
 - Testing
 - User documentation, Evaluation and Project planning
 These may take the form of 4 booklets or 4 distinct sections within 1 project.
3. Work should not be submitted in ring binders or bound in such a way that it is not possible to detach evidence.
4. Candidates should;
 - If presenting outputs in a report then avoid cropping their work too much thus destroying the evidence e.g. queries where the vital field is not seen
 - provide screenshots which were so small they were not readable.
5. Note that showing evidence of something implemented is not evidence of the design of user requirements.

Marks will only be awarded for work in the relevant section and not in other sections.

User requirements			
<u>User Requirements</u> Background	Show a clear understanding of the background to the problem <ul style="list-style-type: none"> ▪ What is the organisation; where is it; who owns or manages it; how big is it? ▪ More detail on what the organisation does i.e. the main functions of the organisation 	1 1	
Expected outcomes/ aims and objectives	A clear statement of the aims and objectives of the system, along with the expected outcomes <ul style="list-style-type: none"> ▪ Data capture and inputs ▪ Processes including security queries calculations sorts etc ▪ Reports and any other outputs ▪ Ethos and house style ▪ Quality and depth of analysis 	1 1 1 1 2	
User Interface requirements	Details of specific user interface requirements of the system and how this reflects the ethos of the organisation.	1	
Hardware	Details of the minimum hardware requirements for the system to function. – must be sensible to chosen topic	1	
Entity relationship diagram	<ul style="list-style-type: none"> ▪ 1 mark for basic One to Many diagram ▪ Second mark for more complex system involving Many to Many relationship <i>If errors or incorrect give no marks</i>	2	

Design			
Design of inputs	Data dictionary for 3 tables Data structure table showing Fieldname + data type <ul style="list-style-type: none"> ▪ 1 mark for each table ▪ 1 mark for design of format of the data in each table 	3	
	Normalisation Diagram/ tables showing normalised tables; <ul style="list-style-type: none"> ▪ 1 mark for normalised form of tables ▪ 1 mark identifying <u>primary key</u> and <u>foreign keys</u> 	2	
	Design of validation techniques At least 2 different types validation techniques <i>Not use the default wizards such as input masks</i> <i>Not drop lists</i>	2	
	Design of security/password protection technique <i>(As a flowchart or pseudo code or list)</i>	1	
	Design of on screen data entry forms (Hand drawn or DTP design) <ul style="list-style-type: none"> ▪ 1 mark design of at least two forms; ▪ 1 mark for form with a sub form ▪ 1 mark is for quality and detail-names of all fields and sample data/ special features on the form/adherence to house style <i>Note this is pre implementation so no screenshots of forms can be counted as design</i>	3	
Design of user interface	Design of user-friendly, menu driven, front end interface (Hand drawn or DTP design) <i>Note this is pre implementation so no screenshots of forms can be counted as design</i>	1	
Design of queries	Design of 6 different of queries. Each must have <u>realistic reason/purpose and structure of the search criteria.</u> NB There must be 6 separate queries for 6 separate distinctive reasons. You cannot double up by saying a single query using a parameter counts as two marks. It is either a parameter query or a single table query and another would have to be done. You could have three single table queries all controlled by a parameter if you wish but you must clearly indicate which are to be counted as the parameter query and which as the two single table queries. The same applies for multiple table queries.		
	<u>Single table queries x 2</u> Each must have realistic reasons for each query not just describing what the query does and not just to display certain fields. The fieldname logical operator and search criteria must be clearly shown in the design.	2	
	<u>Multiple table query using relational links</u> <ul style="list-style-type: none"> • If you use these to create the calculated field. You will need to produce a separate calculation for calculation in report or form 	1	
	<u>Multiple table query using relational links with</u>	1	

	<p><u>search criteria</u> There must be a realistic reason for the search stated in the design. The fieldnames logical operator and criteria must be clearly shown in the design.</p> <p><u>Parameter query</u> Remember to design the statements you will ask as well as the reason for the search and the criteria needed.</p> <p><u>Append or Delete or Update query</u> Identify what you want to search and why you want the data</p>	1	
	<p><u>Design of report.</u></p> <p>There must be a realistic reason why your organisation wants these reports. In addition to reasons, report design must</p> <p>1 mark</p> <ul style="list-style-type: none"> • Clearly display fields and contain reasonable detail • Details of the data/tables or queries required • Allow for suitable headers and footers • Have sorted or grouped <p>1 mark design of a calculations, totals or other statistical fields</p>	2	
Design of processes	<p>Automated routines using programming code Design at least 2 simple Visual Basic / code procedures.</p> <p><i>A screenshot or printout of implemented code is not acceptable as design.</i> Code; pseudo code or flowcharts are acceptable methods of design.</p> <p>Examples could be;</p> <ul style="list-style-type: none"> ▪ code for own validation procedures ▪ toggle buttons to hide data ▪ username and password routines code ▪ own calculation routines written in VB and different from that below <p>NOT MACROS NOT simple things like putting =Now() in a text box</p>	2	
	<p>Design a calculation in a query or form Design at least one calculated field using facilities provided by the software.</p> <p><i>A second needed if mark awarded for this in Multiple tables</i> <i>One calculation cannot be awarded more than 1 mark.</i></p>	1	

Implementation			
<u>Implementation</u>	Create tables and links (<i>Printout all tables and screenshot relational links diagram to provide evidence of links</i>)	4	
	Tables =3 Links =1		
	Two Data validation techniques (<i>screenshot evidence required of construction of both techniques used.</i>)	2	
	<ul style="list-style-type: none"> • Design their own – do not use the wizards • NOT DROP LISTS 	1	
	Calculated field in query or form (<i>screenshot evidence required of construction</i>)		
	Create 2 forms They must look clear and easy to read with no cut off field names or data. (<i>screenshot evidence required</i>)	2	
		1	
	Create form with sub form (<i>screenshot evidence required</i>)	1	
	Create user friendly interface (<i>screenshot evidence required</i>)	2	
	Create two macros For example navigation controls from User Interface and forms. Other macros you have used to enhance your solution e.g. macros to create start up options. <u>Note you can only have one navigation macro</u> the other macro must have a different purpose. (<i>screenshot evidence required of construction</i>)		
	Queries <i>Screenshot evidence of the construction of each of the following types of queries</i>	2	
	<ul style="list-style-type: none"> ▪ Single table queries x 2 ▪ Multiple table query using relational links ▪ Multiple table using relational links with search criteria ▪ Parameter queries ▪ Append. or Delete or Update queries 	1	
	Create a report which must match the stated purpose (<i>screenshot evidence required of construction</i>)	1	
	Report fields	1	
Report H &F	1		
Sorted grouping			
Calculation I			
Provide evidence such as a screenshot or printout of the code written for at least 2 routines implemented.	2		

User Documentation			
User Documentation	Details of where to find the database (directories) and how to start up the database	1	
	Details of how to enter passwords or other security procedures	1	
	Details of how to navigate the user interface	1	
	Details of how to add, delete, edit, print and save data in records via examples given in screenshots of data entry forms	5	
	Examples of two different validation text to support validation procedures	2	
	Instructions about using different types of queries (1mark =2 queries)	3	
	Instructions about how to print one report	1	
	Instructions about disaster recovery techniques	1	
Use lots of screenshots!			
Evaluation			
Evaluation	Evaluation how well you have met the user requirements.	4	
	Describe the problems encountered and strategies used to resolve them.	4	
Total		100	

Evaluation guide				
Marks	1	2	3	4
How well you have met the user requirements.	Summary of what they did with no sense of why each feature was valuable.	More detailed outline of what they did but still not identifying the value of the feature and how this met the user requirement	Evaluation the features they have used and saying why they add value to the system and how this met some of the user requirement	More detailed evaluation of the features they have used and saying why they add value to the system and a detailed discussion of how they met all of the user requirements
Marks	1	2	3	4
Describe the problems encountered and strategies used to resolve them.	Only one or two problems mentioned with no clear strategy of how it was resolved	Two problems mentioned with clear indication of how the problem was resolved.	Critical and detailed They should not only consider at least two problems they encountered and how they resolved it. In addition they should start to criticise their work they should be able to identify more actual or potential future problems with any part of their database solution What was not good and <u>why</u> - <u>must be concrete and not general.</u> How could they resolve or improve this in the future	Critical and very detailed They should not only consider at least two problems they encountered and how they resolved it. In addition they should start to criticise their work. They should be able to identify more actual or any potential future problems in all of the following areas; <ul style="list-style-type: none"> • Data capture or input of data • Processing of data • Output produced What was not good and <u>why</u> - <u>must be concrete and not general.</u> How could they resolve or improve this in the future

Overview of database structure

Tables	3	Identify primary and foreign keys
User interface	1	Usually extra switch board or Main Menu type form
Forms	3	At least one being a form with a sub form
Queries	6	If multiple table query used to create calculated field still need to do a calculation on report or form
Calculations	2	1 in a report 1 in query or form
Validation techniques	2	Not input mask wizards Not lists or combo boxes
Code /VB	2	Usually password routines but note if use code to do a calculation still need to do another calculation of report or form
Reports	1	Could be to display data from tables or queries.

A note about;

Calculated fields

It is possible to get 4 marks here but only if there are 4 separate and different calculations.

1 mark if one calculated field is on a form or query

1 for the calculation in a report

1 mark if you use visual basic to produce a calculation

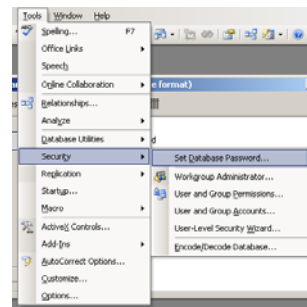
1 mark if there is a calculated field in a multiple table designed to produce this calculation

NB Marks cannot be awarded twice for the same calculation

Security Systems

Design of security systems

This could be the in built database password e.g.



Or

It is possible to get a mark in this section for a Username and Password routines written as an automated routine in Visual Basic.

A sample of a form which might be used as a marking guide is shown overleaf.

Exemplar portfolios with commentaries written by the senior moderating team will be made available as pdf files at a later date.

Centre No				Candidate No			
Use req. & design		Implementation		Testing		User doc	
Background	2					Directory	1
Outcomes	6					Security	1
User Interface	1					Navigation	1
Hardware	1					Add Delete Edit Print Save	1 1 1 1 1
Entity relationship diagrams	2					Valid 1 Valid 2	1 1
Data dictionary	3	Tables	3			Single T query x 2 Multiple T query x2 (Parameter query + App/Del/Up query)	1 1 1
Formats	1						
Normalisation Primary and foreign keys	1 1	Links	1			Print report Disaster Recovery	1 1
Validation 1 Validation 2	1 1	Validation 1 Validation 2	1 1	Valid data Extremes of data Valid 1 invalid data Valid 2 invalid data	1 1 1 1		
Security	1			Security	1	Evaluation	
User interface	1	User interface 2 Macros	1 1 1	User interface and routes through system	1	User Req. Problems Quality	4 4
On screen data entry form Design of form with a subform (quality and detail)	1 1 1	Create forms Form with a subform	2 1				
Single T query x 2 Multiple T query x 2 Parameter query App/Del/Up query	2 2 1 1	Single T queries Multiple T queries Parameter query App/Del/Up query	2 2 1 1	Single T query Multiple T query Parameter query App/Del/Up query	2 2 1 1	COMMENTS	
Report and design of calculation in a report	1 1	Report fields Report H &F Sorted grouping Calculation	1 1 1 1	Print report	1		
VB 1 VB 2	1 1	VB 1 VB 2	1 1	VB 1 VB 2	1 1		
Calculation in <i>form or query</i>	1	Calculation on <i>form or query</i>	1	Calculation on <i>form/query</i>	1		
Total 100	12		25		16		23

Appendix - Glossary of Terms used in Questions

Term	Meaning	Example of use	Sample answer
Name	Write down the name of something.		
Give	Could be a brief statement.		
State	A fact		
Define	A definition		
Briefly describe	A short sentence or a statement which could be an extended definition or fact.		
Describe	An extended statement to give an account of something by giving details of its characteristics.		
Describe in detail	An extended statement with additional information and clarification, perhaps by use of an example.		
Explain	Give a response with enough clarity and detail so that it is clear that the candidate understands the topic. This could be supported with relevant examples and/or diagrams.		

<p>Explain in detail</p>	<p>Give an extended response with enough clarity and detail so that it is clear that the candidate understands the topic which could be supported with relevant examples.</p>		
<p>Discuss</p>	<p>Candidates formally write extended answers about a topic in detail which should include benefits and drawbacks.</p>		
<p>Discuss with reasons</p>	<p>Candidates formally write extended answers about a topic in detail which could include benefits and drawbacks with justification of any statements or opinions given.</p>		
<p>Compare</p>	<p>Describe the similarities and/or the differences between two or more items. This could be done with advantages and disadvantages of the items. The similarities and/or the differences would normally be supported by examples.</p>		

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