

# Mark Scheme (Results)

January 2013

Applied ICT (6957) Unit 7: Using  
Database Software

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## General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Activity	ANSWER	POSS MARK	MAX
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<b>Activity 1</b>		<b>Understanding the problem</b>													
(a)		Award 1 mark for each correct row.													
	<b>A1</b>	Information needed	Who needs this information	What format will it take											
	<b>A2</b>	Data entry is invalid when adding new students	Carole	On screen message											
	<b>A3</b>	Which students have not completed all learning outcomes for each senior tutor	Management	(Printed) report											
	<b>A4</b>	An individual student's progress record	Carole	(On screen) form											
		Successful completion of start-of-year tasks	Carole	On screen message											
		Whether a student has completed the qualification after their progress has been updated	Carole	On screen message											
					<b>4</b>										
(b)	<b>B1 B2 B3 B4</b>	Award up to 2 marks for reasons and 2 marks for explanations. Reasons can be implied from explanation.													
		<table border="1"> <thead> <tr> <th>Reason For example:</th> <th>Explanation</th> </tr> </thead> <tbody> <tr> <td>Space</td> <td>If data not deleted the database file could be a lot bigger than needs to be</td> </tr> <tr> <td>Speed</td> <td>A larger database file would lead to slower processing</td> </tr> <tr> <td>DPA</td> <td>legally can only keep data for certain lengths of time</td> </tr> <tr> <td>Other sensible reason</td> <td>Other sensible explanation</td> </tr> </tbody> </table>	Reason For example:	Explanation	Space	If data not deleted the database file could be a lot bigger than needs to be	Speed	A larger database file would lead to slower processing	DPA	legally can only keep data for certain lengths of time	Other sensible reason	Other sensible explanation			
Reason For example:	Explanation														
Space	If data not deleted the database file could be a lot bigger than needs to be														
Speed	A larger database file would lead to slower processing														
DPA	legally can only keep data for certain lengths of time														
Other sensible reason	Other sensible explanation														
				<b>2+2</b>											
				Max	<b>4</b>										
				<b>Total for Activity 1</b>	<b>8</b>										

Activity	ANSWER	POSS MARK	MAX
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Activity 2		Structure			
(a)	<b>A1</b>	Student (table)	1		
	<b>A2</b>	Senior Tutor (table)	1		
	<b>A3</b>	Learning Outcome (table)	1		
	<b>A4</b>	Progress(table)	1		
	<b>A5</b>	1:M Student-Progress	1		
	<b>A6</b>	1:M LearningOutcome-Progress	1		
	<b>A7</b>	1:M SeniorTutor-Student	1		
		Allow suitable alternative table names.		7	
(b)					
	<b>B1</b>	Evidence of correct primary keys Table Student - EnrolmentNumber Table SeniorTutor – SeniorTutor Table LearningOutcome – LearningOutcome	1		
	<b>B2</b>	Table Progress – EnrolmentNumber, LearningOutcome as composite key	1		
		<b>Data Types</b>			
	<b>B3</b>	<b>All three of:</b> Evidence of correct data types NumSubjectsTaking – Number,  WWO_Completed, LearningOutcomeComplete – Yes/No	1		
				3	
(c)		<b>Validation</b>			
	<b>C1</b>	Any suitable format check For example: LearningOutcome >LL0.0, >LL0\0 (Accept without >)	1		
	<b>C2</b>	Suitable range check NumSubjectsTaking BETWEEN 3 AND 5, >=3 and <=5, >2 and <6	1		
	<b>C3</b>	Any suitable presence check from StudentForename StudentSurname SeniorTutor NumSubjectsTaking Any foreign key Anything sensible	1		
	<b>C4</b>	Any suitable Lookup For example: Any foreign/composite key (EnrolmentNumber, LearningOutcomes, SeniorTutor)	1		

Activity	ANSWER	POSS MARK	MAX	
		MUST have: limit to list yes		
	<b>C5</b>	Default value Status = "Current"	<b>1</b>	
	<b>C6</b>	Field size Any text field.	<b>1</b>	
		<b>Note the same field can be used to show more than one of the above.</b>		
				<b>6</b>
(d)				
	<b>D1</b>	Student – 615	<b>1</b>	
	<b>D2</b>	SeniorTutor – 3	<b>1</b>	
	<b>D3</b>	LearningOutcome – 3	<b>1</b>	
	<b>D4</b>	Progress – 1845	<b>1</b>	
				<b>4</b>
		<b>Total marks for Activity 2</b>		<b>20</b>

Activity		ANSWER	POSS MARK	MAX
<b>Activity 3</b>				
(a)		<b>Main Menu Form –Any view</b>		
	<b>A1</b>	<b>Start of year button created</b>	<b>1</b>	
				<b>1</b>
(b)		<b>Deleting two year old data</b>		
	<b>B1</b>	Finds 1011 students eg Like "1011*" (in table student)	<b>1</b>	
	<b>B2</b>	Would delete from table student	<b>1</b>	
	<b>B3/ B4</b>	Finds 1011 eg Like "1011*" (in table progress)	<b>1</b>	
		Would delete from table progress	<b>1</b>	
		<b>Or</b> Screenprint showing relationship between student and progress with 'cascade deleted related records, ticked	<b>2</b>	
	<b>B5</b>	Updates StudentStatus to 'Archived' Eg StudentStatus Is Null, or EnrolmentNumber 1112*	<b>1</b>	
	<b>B6</b>	Suitable message for user	<b>1</b>	
	<b>B7</b>	All actions on one event, allow follow through	<b>1</b>	
				<b>7</b>
		<b>New Enrolment Form – DESIGN and FORM view</b>		
(c)(i)	<b>C1</b>	Fields include (from any view) EnrolmentNumber StudentSurname StudentForename NumSubjectsTaking SeniorTutor	<b>1</b>	
	<b>C2</b>	Can select senior tutor	<b>1</b>	
(c)(ii)		Enrolment Number (Design view) Formula/method that is correct eg ="1213" & Left([StudentSurname],1) & Left([StudentForename],1) & Max(Right([EnrolmentNumber],4))+1		
	<b>C3</b>	1213	<b>1</b>	
	<b>C4</b>	First letter of StudentSurname and First letter of StudentForename	<b>1</b>	
	<b>C5</b>	A four digit number. (Any method that would work)	<b>1</b>	
	<b>C6</b>	All correct and in correct order	<b>1</b>	

Activity	ANSWER	POSS MARK	MAX
(c)(iii)	Customisation		
	<b>C7</b> Any one of: Suitable title Instructions	1	
	<b>C8</b> Any one of Suitable labels Asterisks for data entry Disabling of generated fields (Shaded)	1	
			<b>8</b>
(d)	<b>Saving students details</b>		
	<b>D1</b> Check to ensure at least StudentSurname and StudentForename are present	1	
	<b>D2</b> Record would save in Student table eg Unbound form uses append query Bound form saves or goes to new record	1	
	<b>Creating progress records</b>		
	<b>D3</b> Three new records would be created in Progress table eg Append query or equivalent	1	
	<b>D4</b> Enrolment number linked to form	1	
	<b>D5</b> LearningOutcome appended to LearningOutcome	1	
			<b>5</b>
(e)(i)	<b>Query to find student</b>		
	<b>E1</b> Parameter used eg [Enter Enrolment Number]	1	
(e)(ii)	<b>Update student progress form</b>		
	<b>E2</b> Includes EnrolmentNumber	1	
	<b>E3</b> Has a Subform	1	
	<b>E4</b> Subform has all three learning out comes	1	
			<b>4</b>
(f)	<b>Updating WWO_Completed</b>		
	<b>F1</b> Attempt at method of determining how many learning outcomes have been completed eg =Sum(If([LearningOutcomeComplete]=Yes,1,0)) =Sum([LearningOutcomeComplete]) Query linked to EnrolmentNumber on form Any method that works	1	
	<b>F2</b> WWO_Completed updated to Yes in the Student table for correct student	1	
	<b>F3</b> Macro/code would update the record only if 3 learning outcomes have been completed for correct student	1	
			<b>3</b>
	<b>Total marks for Activity 3</b>		<b>28</b>



Activity	ANSWER	POSS MARK	MAX
<b>Activity 4</b>	Testing		
(a)	<b>Start of Year Task</b>		
	<b>A1</b> Suitable message	<b>1</b>	
	<b>A2</b> Number of records in student table at least 406 and no more than 410	<b>1</b>	
	<b>A3</b> Screen print of student table showing at least five records where status is 'Archived' Enrolment number must begin '1112'	<b>1</b>	
	<b>A4</b> Number of records in progress table at least 1218 and no more than 1221	<b>1</b>	
			<b>4</b>
(b)	<b>Add New Enrolment Form</b>		
	<b>B1</b> Details correct  StudentSurname: Tennant StudentForename: Matthew SeniorTutor: GM NumSubjectsTaken: 3	<b>1</b>	
	<b>B2</b> Record in table including StudentStatus = 'Current'	<b>1</b>	
	<b>B3</b> EnrolmentNumber '1213TM' and 4 digits with WO2.1 EnrolmentNumber '1213TM' and 4 digits with WO2.2 EnrolmentNumber '1213TM' and 4 digits with WO2.3	<b>1</b>	
			<b>3</b>
(c)	<b>C1</b> Required fields test  Suitable error message about data being required	<b>1</b>	
			<b>1</b>
(d)	<b>Update student progress form</b>		
	<b>D1</b> Entered on form correctly EnrolmentNumber: 1213CK1210 WO2.2: Tick	<b>1</b>	
	<b>D2</b> Screen print of progress table showing updated WO2.2 – Tick	<b>1</b>	
	<b>D3</b> Screen print of <b>student</b> table showing updated WWO_Completed – Tick Do not award in any other table.	<b>1</b>	
			<b>3</b>
	<b>Total for Activity 4</b>		<b>11</b>

Activity	ANSWER	POSS MARK	MAX
<b>Activity 5</b>	<b>Printing Progress Records</b>		
(a)	Criteria correct. Query would find current students who have not completed 'Working with Others'		
	<b>A1</b> Status – "Current" or EnrolmentNumber – 1213*	<b>1</b>	
	<b>A2</b> WWO_Completed – 'No'	<b>1</b>	
			<b>2</b>
(b)(i)	<b>Report in design view</b>		
	<b>B1 to B7: evidence in design view though if cannot see field names in full check with report view</b>		
	<b>B1</b> Grouped by senior tutor eg SeniorTutor	<b>1</b>	
	<b>B2</b> Suitable title <b>must be in page header</b>	<b>1</b>	
(b) (ii)	<b>B3</b> group header should show <ul style="list-style-type: none"> <li>• SeniorTutor</li> <li>• SeniorTutorSurname</li> <li>• SeniorTutorForename</li> </ul>	<b>1</b>	
	<b>B4</b> Labels for <ul style="list-style-type: none"> <li>• EnrolmentNumber</li> <li>• StudentSurname</li> <li>• StudentForename</li> </ul>	<b>1</b>	
	<b>B5 mark is the third mark for b(i)</b>		
	<b>B5</b> Suitable Labels for field names	<b>1</b>	
(b) (iii)	<b>B6</b> Detail section should show <ul style="list-style-type: none"> <li>• EnrolmentNumber</li> <li>• StudentSurname</li> <li>• StudentForename</li> </ul>	<b>1</b>	
(b) (iv)	<b>B7</b> Total number not completed in group footer eg =Count(*)	<b>1</b>	
(b) (v)	<b>B8</b> Total number not completed in report footer eg =Count(*)	<b>1</b>	
(b)(vi)	<b>B9</b> New page for each tutor	<b>1</b>	
			<b>9</b>
(c)	<b>C1</b> not just default layout and no truncation	<b>1</b>	
			<b>1</b>
	<b>Total marks for Activity 5</b>		<b>12</b>

Activity	ANSWER	POSS MARK	MAX
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Activity 6	Evaluation
	<p><b>Note:</b> Place student in correct mark band based on content. QWC adjustment can only reduce mark within band. This must be based on the expectation within the mark band. Marks cannot be added and the adjustment cannot put the mark in a different mark band.</p> <p><b>How the prototype is fit-for-purpose and the evidence you have used to reach this conclusion</b></p> <p><b>Evaluation of fitness for purpose based on Carole’s requirements:</b></p> <ol style="list-style-type: none"> <li>1. <b>Start of Year</b>, which involves automatically: <ul style="list-style-type: none"> <li>• deleting the data of students that is no longer required</li> <li>• flagging students who have completed their first year</li> <li>• providing a suitable message for Carole so that she knows what is happening.</li> </ul> </li> <li>2. <b>Adding Students During the Academic Year</b>, which involves: <ul style="list-style-type: none"> <li>• ensuring a name is present</li> <li>• ensuring there is a senior tutor assigned to them</li> <li>• generating a unique enrolment number</li> <li>• storing the student details if all requirements are met, ensuring it is clear they are a current student.</li> </ul> </li> <li>3. <b>Updating Student Progress Records</b>, which involves: <ul style="list-style-type: none"> <li>• searching for a particular student</li> <li>• displaying their current progress record</li> <li>• updating their progress record, where relevant</li> <li>• indicating whether the student has completed the qualification.</li> </ul> </li> <li>4. <b>Printing Progress Records</b> – A printout of the progress of students including the senior tutor details with the students in their group who have not completed all learning outcomes.</li> </ol>
	<p><b>Recommendations for extra functionality</b>  <b>For mark band 1 and 2 additional functionality could be based on what has not been done or only partly achieved.</b>  <b>e.g.</b></p> <ul style="list-style-type: none"> <li>• Calculations not working that should work eg method of determining how many learning outcomes on form and report</li> <li>• Queries that did not work that should eg delete, update, append, find student</li> </ul> <p><b>For mark band 3 should include some improvements beyond the initial brief.</b>  <b>e.g</b></p> <ul style="list-style-type: none"> <li>• Progress is not archived at the same time as student data</li> <li>• The update and delete query limit the database to this year only</li> <li>• Main menu runs start of year tasks only some instructions and navigation should be added</li> </ul>

Activity	ANSWER	POSS MARK	MAX
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	<ul style="list-style-type: none"> <li>• Only keeps track of WWO would be more useful if it kept track of all other AS subjects.</li> <li>• The update records form would be better if the progress of a student could be found through typing in the name or enrolment number or the use of a drop-down list to select them on the form rather than before the form opened.</li> <li>• Different users / user access levels</li> <li>• Enrolment number is only good for this year</li> <li>• Method of differentiating between current and archived</li> <li>• Main menu opens automatically</li> <li>• More search options for students</li> <li>• Archive individual students on demand</li> </ul>
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Level	Mark	Descriptor
	<b>0</b>	No rewardable material.
1	<b>1-3</b>	The candidates will make basic comments on what they did and how this produced a solution. Some screenshots may be provided as evidence. Comments on possible improvements will be made but unsupported and at a basic level. Descriptive rather than evaluative. The candidate uses everyday language and the response lacks clarity and organisation. Spelling, punctuation and the rules of grammar are used with limited accuracy.
2	<b>4-6</b>	Addresses both evaluation and identification of future improvements. Gives subjective, but realistic, comments about improvements but these are not always well supported. Evaluative comments about the database (not what they did) with weaknesses as well as strengths noted. The candidate uses some terms and shows some focus and organisation. Spelling, punctuation and the rules of grammar are used with some accuracy.
3	<b>7-9</b>	Addresses both evaluation and identification of future improvements in some depth. Future improvements will extend the original specification. (Technical solutions for suggested improvements are not necessary.) The candidate uses a range of appropriate terms and shows good focus and organisation. Spelling, punctuation and the rules of grammar used with considerable accuracy.

<b>SWW1</b>		Administration details on each page	<b>1</b>	
<b>SWW2</b>		Required printouts only assembled correctly	<b>1</b>	
		<b>Total Marks for Standard ways of working</b>		<b>2</b>
		<b>Total marks for Paper</b>		<b>90</b>

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