Mark Scheme (Results)

October 2021

Pearson Edexcel International Advanced Subsidiary
In Information Technology (WIT14/ 01)
Unit 4

Question number	Answer		Additional Guidance	Mark
1(a)i	**Presence check and format check for LastName**			
	A1	Presence check on LastName field Required set to **yes** **OR** validation rule of 'Is Not Null'		1
	A2 **A3**	Input mask or suitable validation rule on LastName field Force uppercase for first letter (1) Max of 24 lowercase characters (1) Input mask >L<??????????????????????????		2
			Total	**3**
1(a)ii		**Data type**		
	A4	Availability set to Yes/No OR Email set to Hyperlink		1
			Total	**1**

Question number	Answer		Additional Guidance	Mark
1(b)	**Edit venue form**			
	B1	Form does not include Language field		1
	B2	ProgrammerID is disabled		1
	B3	**Three** from: • Form labels are appropriate (not database field names) • Form has meaningful title • Entry boxes on form are resized appropriately to reflect the data they will be used to enter • Instructions on how to use • Asterisk on any field except ProgrammerID • ProgrammerID or Email fields disabled		1
	B4	Button present and suitably labelled e.g. Save/ image of a disc		1
	B5	Email address would be generated FirstName.LastName@gmpost.com		1
	B6	FirstName, LastName, Email, Available would save in programmer table		1
	B7	Save message would display		1
	B8	Save message would display only if record has saved		1
			Total	**8**

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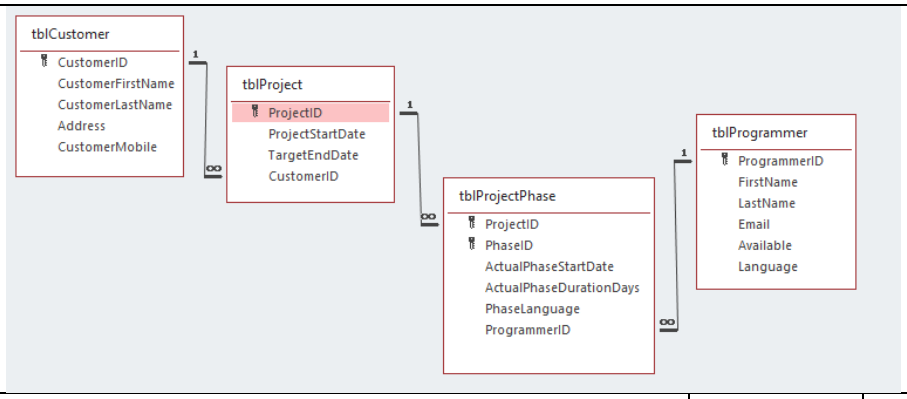
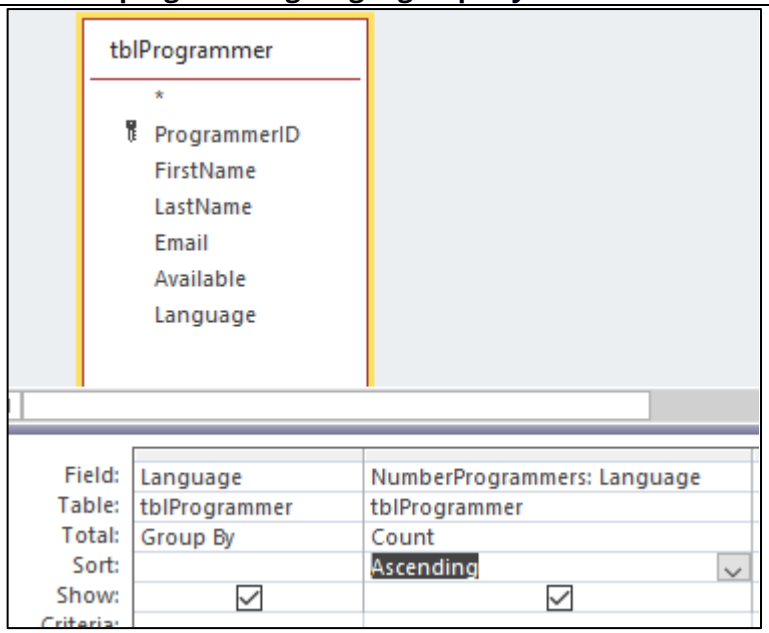
1(c)	**Table Structure**			
				
	C1	Use of appropriate table and field names and naming conventions		1
	C2	Customer table is present with suitable fields		1
	C3	Project table is present with suitable fields		1
	C4	ProjectPhase table is present with suitable fields		1
	C5	1:M relationship between Customer and Project		1
	C6	1:M relationship between Project and ProjectPhase		1
	C7	1:M relationship between Programmer and ProjectPhase		1
	C8	Appropriate primary key used for Customer table		1
	C9	Appropriate primary key used for Project table		1
	C10	Appropriate composite key used for ProjectPhase		1
	C11	Date/Time is used for at least one of ProjectStartDate, TargetEndDate, ActualPhaseStartDate **And** Text used for CustomerMobile **And** Number used for PhaseDurationDays		1
			Total	**11**

Question number	Answer		Additional Guidance	Mark
1(d)	**Import**			
	D1	Customer table – 21 records		1
	D2	Project table – 35 records		1
	D3	Project Phase table – 40 records		1
			Total	**3**

Question number	Answer	Mark
1(e)	**Indicative content** *Analysis* • There is more than one record for each programmer. This means there is data redundancy. • Each programmer has multiple primary keys associated with them. • Some of the details for a programmer do not match e.g. Nicole Chapman has one record where FirstName is Nicola and email is different. Rose Boyd has one record where FirstName is Rosie and the email is different. This means the data is inaccurate and has led to anomalies. • There could be further anomalies if any of the details needed to be updated. • There is a 1:M relationship between the programmer and the languages because a programmer can use more than one language. This is why there is more than one record for each programmer *Recommendations* • Create a new table called tblLanguage. • Put it in a the tblLanguage and have a primary key called LanguageID • Make a note of the languages each programmer can use • Delete the language field from tblProgrammer • Remove all duplicate records from tblProgrammer • Create a new table called tblProgrammerLanguage • Make a composite key of LanguageID and ProgrammerID • Create the records to link each programmer with the languages they can use	**9**

Level	Mark	Descriptor	
	0	No Awardable content	
Level 1	1-3	• Analysis is flawed or superficial, containing simple statements that show limited understanding of the subject matter. • Solution may contain some aspects that are appropriate, but is generally ineffective.	
Level 2	4-6	• Analysis is sound, containing minor inaccuracies or omissions, showing some understanding of the given issue. • Solution is workable but may have minor issues.	
Level 3	7-9	• Analysis is sound and developed, containing ideas that are linked together in a fluent and logical way, showing a thorough understanding of the given issue. • Solution is appropriate and workable.	
		Total	**9**
		Total for question 1	**35**

Question number	Answer	Additional Guidance	Mark
2(a)	**Programmers and programming languages query**		



Programmer table results

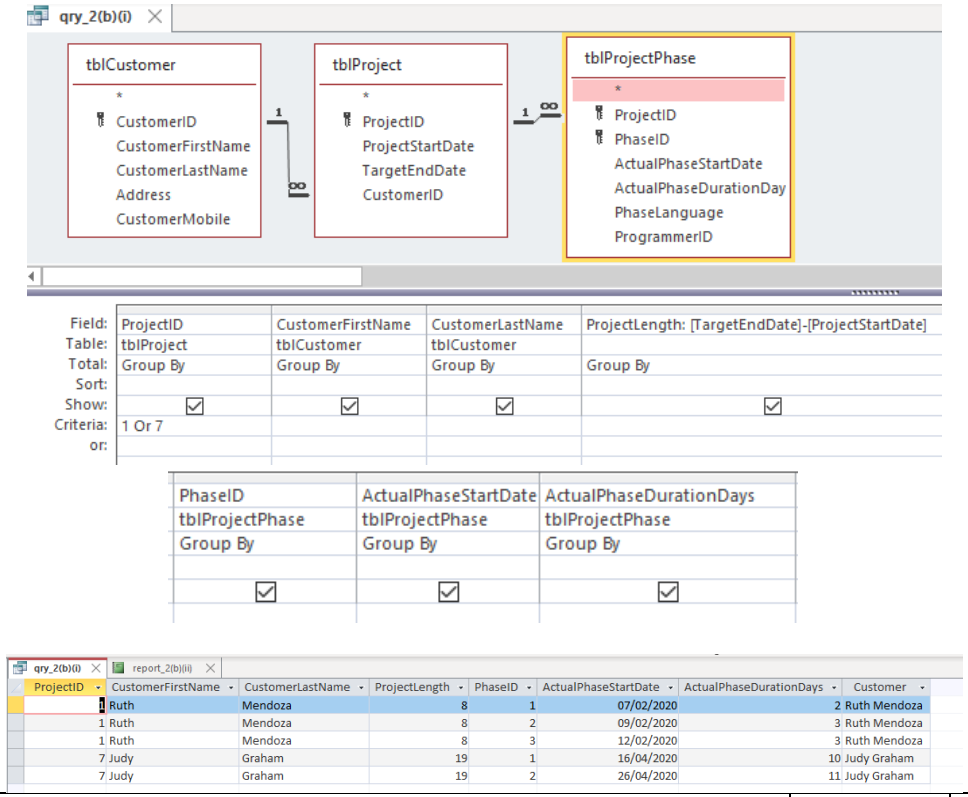
qry_2(a)

Language	NumberProgrammers
TypeScript	1
SQL	1
PHP	1
C++	1
C#	1
C	1
Assembly	1
Swift	2
Ruby	2
HTML/CSS	2
Go	2
Bash/Shell/PowerShell	2
Python	3
JavaScript	3
Java	5

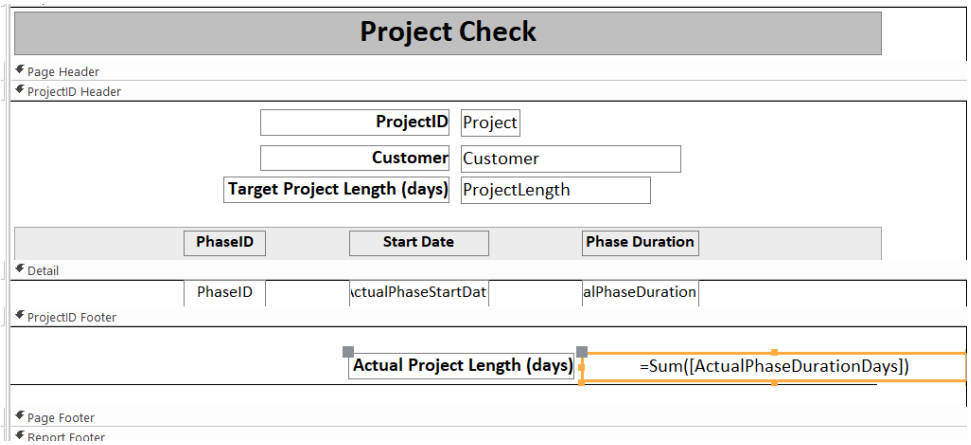
Project Phase results

PhaseLanguage	NumberProgrammers
TypeScript	1
Assembly	1
Swift	2
SQL	2
PowerShell	2
Go	2
C++	2
C#	2
Python	3
JavaScript	3
C	3
Ruby	4
PHP	4
HTML/CSS	4
Java	5

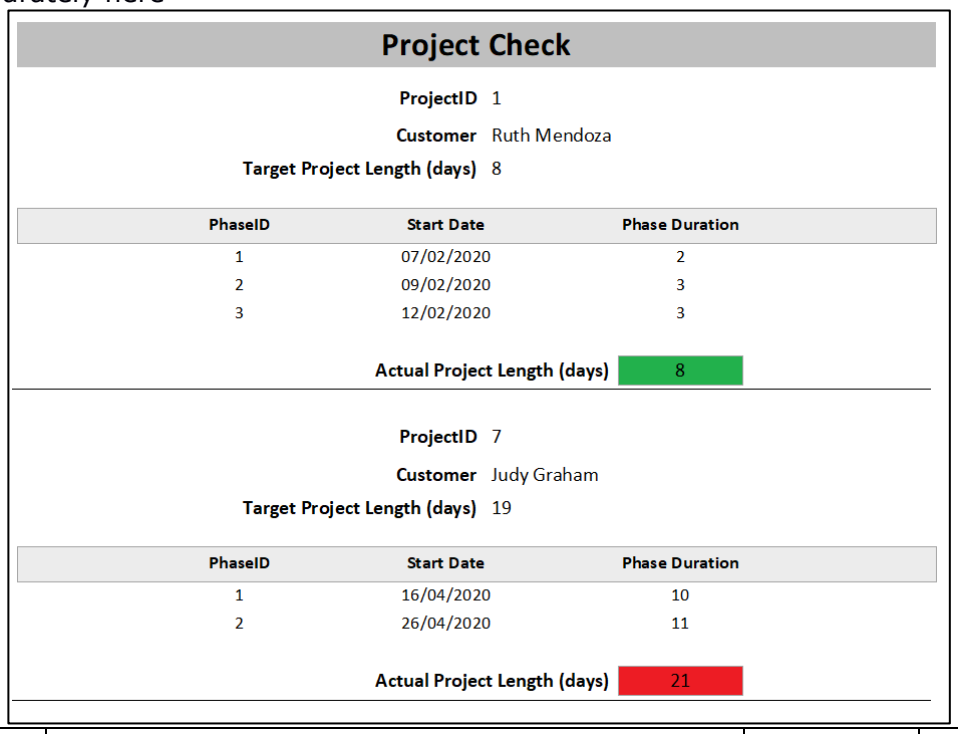
A1	Programmer table used rather than Project Phase table		1
A2	Number of programmers per language generated		1
A3	Generated field has suitable field name		1
A4	Number of programmers sorted into ascending order		1
A5	Columns not truncated		1
A6	Correct results shown		1
		Total	**6**

Question number	Answer	Additional Guidance	Mark
2(b)(i)	**Project check query**		
			
	B1 Correct (related) tables added (customer, project, project phase)	Follow through on their database structure	1
	B2 Criteria correct for ProjectID • 1 or 7		1
	Calculation for target project length (may be present in the report 2 (b)(ii)		
	B3 • TargetEndDate – ProjectStartDate • DateDiff("d",[ProjectStartDate],[ActualProjectEndDate]) • TargetEndDate – ProjectStartDate + 1 • DateDiff("d",[ProjectStartDate],[ActualProjectEndDate]) + 1		1
		Total	**3**

Question number	Answer	Additional Guidance	Mark
2(b)(ii)	**Project check report**		



Customer names may have been concatenated in query or may show them separately here



Project Check

ProjectID 1
Customer Ruth Mendoza
Target Project Length (days) 8

PhaseID	Start Date	Phase Duration
1	07/02/2020	2
2	09/02/2020	3
3	12/02/2020	3

Actual Project Length (days) 8

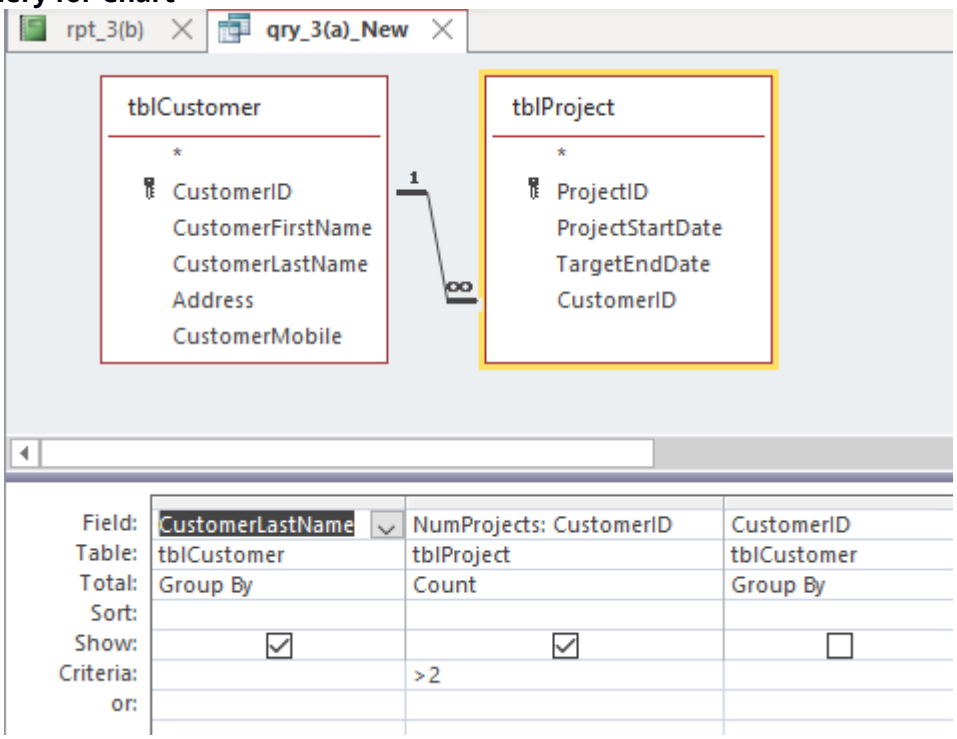
ProjectID 7
Customer Judy Graham
Target Project Length (days) 19

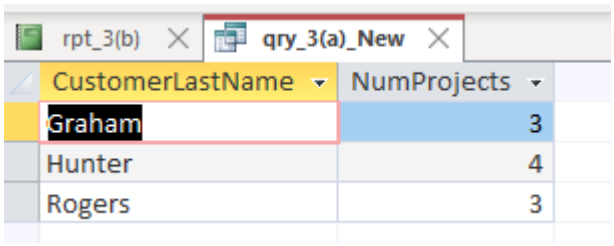
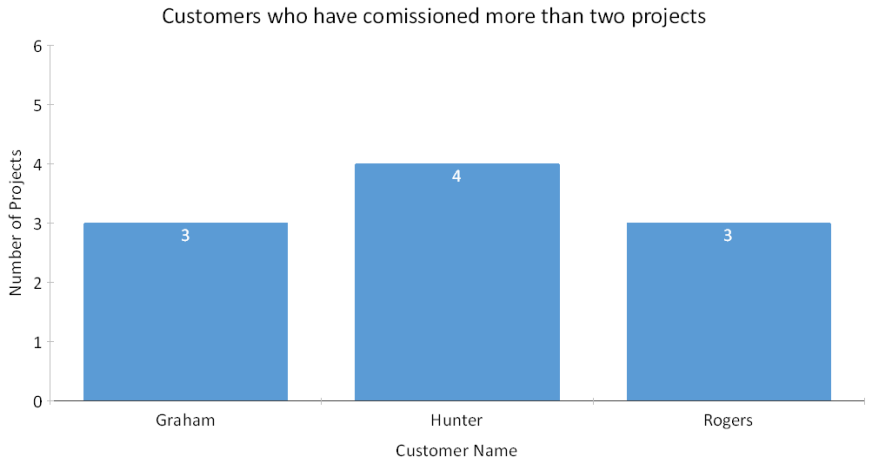
PhaseID	Start Date	Phase Duration
1	16/04/2020	10
2	26/04/2020	11

Actual Project Length (days) 21

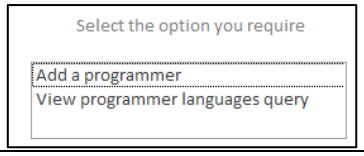
B4	Title is in the page or report header – **mark from design view only** (do not accept title in detail section)		1
B5	Title is as given		1
B6	Grouped by ProjectID– **mark from design view only**		1
B7	Shading used on title **OR** phase field headings		1
B8	Centre alignment used on at least **one** of the fields **and** values shown		1
B9	actual project length uses correct formula =Sum(ActualPhaseDurationDays)		1
B10	actual project length in ProjectID footer		1
	Conditional formatting completed early or on time		

	B11	Rule added to check actual project length is less than or equal to the target project length		1
		Conditional formatting project took longer		
	B12	Rule added to check actual project length is greater than the target project length		1
	B13	Red or green background added		1
	B14	Report is as given		1
			Total	**11**
			Total for question 2	**20**

Question number	Answer		Additional Guidance	Mark
3a	**Query for Chart**  			
	A1	No inappropriate fields included		1
	A2	Number of projects calculated correctly e.g. • Count(CustomerID)	Any field is appropriate for the count	1
	A3	Criteria correct for number of projects • >=3 • >2		1
	A4	Generated field has a suitable field name		1
			Total	**4**

Question number	Answer		Additional Guidance	Mark
3b	**Chart**			
	Chart data   			
	B1	Bar/column/pie chart created		1
	B2	Meaningful chart title used		1
	B3	Axis shows programmer name (or legend for pie chart)		1
	B4	At least one axis has suitable label (or legend for pie chart)		1
	B5	Bar/column • Axis contains suitable scale Or data values are shown Pie • Data values are shown		1
	B6	Chart is fit for purpose Bar/column • No legend • Appropriate sizing of elements on page (e.g. title larger than axis labels, data labels) Pie • Appropriate sizing of elements on page (e.g. title larger than legend labels, data values)		1
			Total	**6**

Question number	Answer		Additional Guidance	Mark
3c	**Chart button**			
	C1	Button added to report		1
	C2	Button would print the chart		1
			Total	**2**
			Total for question 3	**12**

Question number	Answer		Additional Guidance	Mark
4	**Dashboard** 			
	A1	List box added with at least one option		1
	A2	Both options are as given		1
	A3	Data input form from 1(b) would open OR query from 2(a) would run when option selected		1
	A4	List box uses correct action depending on option selected for both options		1
			Total	**4**
			Total for question 4	**4**

Question number	Answer	Mark
5	**Indicative content** *Analysis* • **Some appropriate features** o Combo boxes for programming language and customer. o Buttons to save, close and add a customer if they don't already exist. o Date picker. o Form title clearly gets purpose across o Section titles clearly get purpose across o Most field widths suitable. o Labels are generally easy to read o Asterisk for required data entry o Disabled fields to stop accidental change of data etc. • **Data accuracy** o Project end date is before the project start date. o Programming language is showing underneath the phase ID label. o There is a phase start date that is before the start date for the project. o Don't know whether the data underneath the select language combo box is for the language or perhaps phase ID. • **User help** o Can only see titles and asterisks. They do clearly show where data must be entered and give an indication of what the form and each section is for. • **Ease of use** o Project details section looks easy to use as just need to pick two dates. Sensible to have that as the first section. o Phase detail section not as easy to use as programming language and phase ID are confusing. Also could be hard to remember a programmer's ID. Does make sense to have this section after the project details section. Phases in descending order. o Customer section quite easy to use only have to pick a customer or click the add button if they don't exist. Label for customer bit hard to read. o Save and close buttons good to have but does not make sense to have save button right at the top when you would finish the data input at the bottom of the page. Does not make sense to have the buttons separated either. *Recommendations* • Make the labels consistent e.g. add space in StartDate • Add validation to make sure the project start date cannot be in the past • Add validation so that the end date has to be later than the project start date • Add the phase ID field under the phase ID. Could possibly make it a combo box to select the phase number. This could prevent potential problems such as trying to duplicate the phase ID or missing a phase	9

	out e.g. jumping from 1 to 3. Could also potentially automate it so that the first phaseID is always 1 and then it increments by 1 after that. It could be disabled then so prevent inaccuracies and reduce data input. Phases could be arranged in ascending order. • Could use a date picker on the start date for the phase. Could also validate to make sure the start date cannot be before the project start date and that the phase dates make sense • Move the language to underneath the select language label. • Could use a combo box for the programmer that shows the programmer names as easy to remember than IDs and would prevent trying to use a programmer that does not exist • Move the label for the customer so that it is in line with the field. Move the customer section to the top next to the project details section as makes sense to pick a customer before adding the phase details. • Move the save and close button to the bottom of the form so they are together and near to where the user will be when they have finished all input. • Could add a help button with further help and make sure validation that is added has suitable error messages e.g. message to explain that the project end date cannot be before the project start date.	

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		Total for question 5	**9**