Unit 2 Creating Systems to Manage Information 2019 new format

P



Level 3 National in Information Technology

January 2019 New Format

Example Solution

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Introduction

The solution must be used alongside the marking guidance document and Scripts A and B. Very few comments/explanations will appear in this document so in order to fully understand the approach and how to mark, the other documents must be considered too.

Part A

Activity 1 – Database relationship screenprint



Activity 2 – Table structures

	tblProperty $ imes$	
2	Field Name	Data Typ
(PropertyID	AutoNumber
	PropertyHouseNumbe	r Short Text
	PropertyPostcode	Short Text
	PropertyTypeID	Number
	Bedrooms	Number

	tblPropertyType $ imes$	
	Field Nam	e Data Ty
ŧ.	PropertyTypeID	AutoNumber
	PropertyType	Short Text

Presence check, length check and Range check format check

	tblProperty $ imes$			
2	Field Nam	Data Type		
Ţ.	PropertyID		AutoNumber	
	PropertyHouseNum	nber	Short Text	
	PropertyPostcode		Short Text	
			Fi	eld Prop
	General Lookup			
	Field Size	7		
	Field Size Format	7		
	Field Size Format Input Mask	7 > LLO\ OLL		
	Field Size Format Input Mask Caption	7 >LLO\ OLL		
	Field Size Format Input Mask Caption Default Value	7 > LLO\ OLL		
	Field Size Format Input Mask Caption Default Value Validation Rule	7 >LLO\ OLL Is Not Null		

Table lookup

	tblRental $ imes$							
2	Field	Name	Data 1	уре				
ţ.	RentalID		Number					
	PropertyID		Number					
	TenantID		Short Text	\sim				
				Field Propertie				
	Seneral Cookup							
	Display Control	Combo Box	Combo Box					
F	Row Source Type	Table/Query	Table/Query					
F	Row Source	SELECT [tblT	SELECT [tblTenant].[TenantID], [tblTenant].[Te					
E	Bound Column	1	1					
(Column Count	2	2					
(Column Heads	No	No					
(Column Widths	1.508cm;3.38	1.508cm;3.387cm					
l	ist Rows	16	16					
l	ist Width	4.894cm	4.894cm					
l	imit To List	Yes						

	\blacksquare tblRental $ imes$	
2	Field Name	Data Type
ţ.	RentalID	Number
	PropertyID	Number
	TenantID	Short Text
	RentalStartDate	Date/Time
	MonthlyRent	Currency
	RentalEndDate	Date/Time
	thiTenant V	
4	Field Name	Data Type
Ū.	TenantID	Short Text
	TenantSurname	Short Text

	tblProperty $ imes$					
\square	Field Nam	e	Data Type			
Ū.	PropertyID		AutoNumber			
	PropertyHouseNum	nber	Short Text			
	PropertyPostcode		Short Text			
	PropertyTypeID		Number			
	Bedrooms		Number			
			Field Pro			
0	Seneral Lookup					
I	Field Size	Long Integer				
I	Format					
[Decimal Places	Auto				
	nput Mask					
(Caption					
	Default Value	0				
1	/alidation Rule	>=1 And <=	5			
	/alidation Text	Bedrooms m	ust be between 1 and 5			
	Pequired	No				

Activity 3 – Queries and report

Any criterion used that produces the correct results is acceptable

Query 1



ė	qr1_SortedPostcode	\times	
2	PropertyPostcode	Ŧ	MonthlyRent 👻
	BV2 8ZV		£294.67
	BV3 8CV		£843.00
*			

Query 2



Report

e	qryRepo	\sim ort \times						
	tblRental * RentalID PropertyID TenantID RentalStartDate MonthlyRent RentalEndDate		<u>∞</u> 1	1 tblProperty * PropertyID PropertyHouseNumt PropertyTypeID Bedrooms		<u>1</u>	tblPropertyType * PropertyTypeID PropertyType	
•	1							
	Field: PropertyID P Table: tblProperty tl Total: Group By G Sort: Show: V		PropertyHouseNumber tblProperty Group By		PropertyPostcode tbIProperty Group By		PropertyType tblPropertyType Group By	NumberRentals: RentalID tblRental Count
High tblRe Max	Criteria: LowestRent: MonthlyRent LowestRent: MonthlyRent tblRental Min		MonthlyRent					
[]	qryReport >	(

	divebort ×
- - -	Property Rentals
Ľ	≪ Page Header
- - - 1	House Number Postcode Property Type Number Of Rentals Highest Rent Lowest Rent
	∉ Detail
1	Property PropertyPostco PropertyType imberRent HighestRent LowestRent
	Fage Footer
	F Report Footer
- - - 1	Total Rentals Overall =Sum([NumberRentals])
1	Highest Rent Overall =Max([HighestRent])
2.	Lowest Rent Overall =Min([LowestRent])
3	

Screenprint of report for illustration only. Needs to be a pdf of the report that is exported from the database

House Number	Postcode	Property Type	Number Of Rentals	Highest Rent	Lowest Rent
5A	BV2 2CK	Detached bungalow	2	£850.00	£732.34
2	BV2 8ZV	Terraced house	1	£294.67	£294.67
3	BV3 8CV	Detached house	1	£843.00	£843.00
80	BV2 1GC	Detached house	1	£641.33	£641.33
14	BV0 6DJ	Semi detached house	1	£498.67	£498.67
1	BV1 3UN	Semi detached bungalow	1	£498.33	£498.33
				Total Rentals Overall	7
				Highest Rent Overall	£850.00
				Lowest Rent Overall	£294.67

Activity 4 – Structure testing

Note the last two columns have been merged as the solution document is sized to A4 rather than A3. This is to ensure the contents can be seen and read.

Test	Type of	Test data	Expected	Ac En	Add screenprint(s) of the results of this test (and any retests) Ensure you show the test data used in the screenprint(s)						
NO	(N, R, X)		results								
1	R	PropertyID: Autonumber	Error message		tb	olProperty $ imes$					
		PropertyHouseNumber: 13	to appear	2		PropertyID -	PropertyHol 👻	PropertyPos -	PropertyTyp 👻	Bedrooms	👻 Cli
		PropertyPostcode: blank	saying the		+	:	1 5A	BV2 2CK	4		1
		PropertyTypeID: 1	postcode must		+	:	2 2	BV2 8ZV	3		5
		Bedrooms: 3	be entered		+	:	3 3	BV3 8CV	1		3
					+		4 80	BV2 1GC	1		3
					+	l	5 14	BV0 6DJ	2		4
					+		6 1	BV1 3UN	5		2
				ø	+	-	7 13		1		3
				*		(New	/)				0
							Microsoft Acc	ess	×		
								u must enter a post	code		

Test No	Type of test (N. R. X)	Test data	Expected results	Add screenprint(s) of the results of this test (and any retests) Ensure you show the test data used in the screenprint(s)							
2	R	PropertyID: Autonumber PropertyHouseNumber: 13 PropertyPostcode: BB1 9BB PropertyTypeID: 0 Bedrooms: 3	Error message to appear saying the text entered is not in the list and that an item from the list has to be selected	2 2 3 4 3 4 3 4 3 7 4 3 7 4 3 7 4 3 7 4 7 4	tblProperty Property	yID • 1 2 3 4 5 6 10 rosoft A	PropertyHor - 5A 2 3 80 14 1 13 Access The text you enter Select an item from	PropertyPo: • BV2 2CK BV2 8ZV BV3 8CV BV2 1GC BV0 6DJ BV1 3UN BB1 9BB ed isn't an item in the list, or enter t	PropertyTyp - 4 3 1 1 2 5 0 V	Bedrooms - 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Click to

3	X*	PropertyID: Autonumber PropertyHouseNumber: 13 PropertyPostcode: BV1 1VV PropertyTypeID: 1 Bedrooms: 0	Error message to appear to say the bedrooms must be between 1 and 5		tblPro + <th>operty X opertyID (Nev</th> <th> ✓ Prope 1 5A 2 2 3 3 4 80 5 14 6 1 9 13 N) </th> <th>ertyHou - Microso</th> <th>PropertyPos → BV2 2CK BV2 8ZV BV3 8CV BV2 1GC BV0 6DJ BV1 3UN BV1 1VV oft Access Bedrooms must</th> <th>PropertyTyp - 4 3 1 1 2 5 1 2 5 1 2 5 1 2 5 1</th> <th>Bedrooms</th> <th> Cl S 3 3 4 2 0 0 </th>	operty X opertyID (Nev	 ✓ Prope 1 5A 2 2 3 3 4 80 5 14 6 1 9 13 N) 	ertyHou - Microso	PropertyPos → BV2 2CK BV2 8ZV BV3 8CV BV2 1GC BV0 6DJ BV1 3UN BV1 1VV oft Access Bedrooms must	PropertyTyp - 4 3 1 1 2 5 1 2 5 1 2 5 1 2 5 1	Bedrooms	 Cl S 3 3 4 2 0 0
Test No	Type of test (N, R, X)	Test data	Expected results	Ad En:	ld scree sure ye	enprint(s) ou show t) of the i he test	results of data used	this test (and a d in the screenp	ny retests) print(s)		

4	X*	PropertyID: Autonumber PropertyHouseNumber: 13 PropertyPostcode: BV1 1VV PropertyTypeID: 1 Bedrooms: 6	Error message to appear to say the bedrooms must be between 1 and 5	tblProperty PropertyID PropertyHol PropertyPos PropertyTyp Bedrooms I Image: triangle in the second	
5	X*	RentalID: Autonumber PropertyID: 2 TenantID: TE7 RentalStartDate: 29/01/2020 MonthyRent: 700 RentalEndDate: Blank	Default error message to appear saying the text entered is not in the list	tblRental × RentalID • PropertyID • TenantID • RentalStartE • MonthlyRen • Rental 1 6 TE1 11/12/2009 £498.33 12/ 2 4 TE2 11/01/2011 £641.33 30/ 3 5 TE1 10/10/2012 £498.67 01/ 4 1 TE3 24/01/2013 £732.34 29/ 5 1 TE6 05/02/2014 £850.00 6 6 3 TE4 30/08/2017 £843.00 7 7 2 TE5 30/08/2017 £294.67 7 8 2 TE7 29/01/2020 £700.00 # Microsoft Access X Microsoft Access X OK	EndD: - Cli '09/2012 '06/2019 '01/2014

Test	Type of	Test data	Expected	Add screenprint(s) of the results of this test (and any retests)					
No	test		results	Ensure you show the test data used in the screenprint(s)					
	(N, R, X)								
6	R**	R**RentalID: AutonumberDefPropertyID: 7meTenantID: TE6appRentalStartDate:the29/01/2020entMonthlyRent: 700in tRentalEndDate: Blank	Default error message to appear saying the text entered is not in the list	RentalID - RentalID - 1 2 3 4 5 6	PropertyID ▼ TenantID ▼ 6 TE1 4 TE2 5 TE1 1 <td>RentalStartE - 11/12/2009 11/01/2011 10/10/2012 24/01/2013 05/02/2014 30/08/2017</td> <td>MonthlyRen - £498.33 £641.33 £498.67 £732.34 £850.00 £843.00</td> <td>RentalEndDi - C 12/09/2012 30/06/2019 01/06/2019 29/01/2014</td>	RentalStartE - 11/12/2009 11/01/2011 10/10/2012 24/01/2013 05/02/2014 30/08/2017	MonthlyRen - £498.33 £641.33 £498.67 £732.34 £850.00 £843.00	RentalEndDi - C 12/09/2012 30/06/2019 01/06/2019 29/01/2014	
				7 .8 * 0 Micro	2 TE5 7 TE6 posoft Access The text you entered isn't an Select an item from the list, or	30/08/2017 29/01/2020 item in the list. enter text that mate	£294.67 £700.00 £0.00	× ed items.	

* Candidates may use R in place of X where indicated – see Lead Examiner report Jan 2020

Activity 5 – Structure evaluation

No evaluation included. See the examples discussed in Script A and Script B.

Also see discussions of the examples in the Lead Examiner report and scripts for the live January 2020 examination.

Part B

Activity 6 – Interface and functionality Owner form





Property Sheet Selection type: Form									
Form	Form								
Format	Format Data Event Other All								
Record	Record Source tblOwner								
Records	et Type			Dyn	aset				
Fetch D	efaults			Yes					
Filter									
Filter Or	n Load			No					
Order B	Order By								
Order B	Order By On Load Yes								
Wait for	Wait for Post Processing No								
Data En	try			Yes					

Code solution

```
Private Sub cmdSave_Click()
    If IsNull(OwnerSurname) Then
        MsgBox "You must enter a surname", vbOKOnly
    ElseIf BranchID.ListIndex = -1 Then
        MsgBox "You must select a branch", vbOKOnly
    ElseIf NumProperties < 1 Or NumProperties > 10 Then
        MsgBox "The number of properties must be between 1 and 10 inclusive", vbOKOnly
    Else
        DoCmd.Save
        MsgBox "The owner details have been saved", vbOKOnly
        DoCMd.GoToRecord , , acNewRec
        End If
End Sub
```

Macro Solution

frmOwner Z frmOwner : cmdSave : On Click ×
□ If IsNull([OwnerSurname]) Then
Message Vou must enter a surpame
Ressage Fourmust enter a sumanie
Beep Yes
lype None
litle
Else If [BranchID].[ListIndex]=-1 Then
MessageBox
Message You must select a branch
Beep Yes
Type None
Title
E Fice If [NumProperties]<1.0r [NumProperties]>10 Then
MessageBox
Message The number of properties must be between 1 and 10
Beep Yes
Type None
Title
Command SaveRecord
MessageBox
Message The owner details have been saved
Beep Yes
Type None
Title
GoToRecord
Object Type
Object Name
Record New
Offset
End If

Management fee form

📑 Update Fee 🛛	-3 Update Fee X								
Management Fee Increase									
Select the branch and then enter the increase as a whole number e.g. 10									
Select the branch	Select the branch								
Town									
Manager									
Current management fee									
Potential increase %	*								
New fee	#Type!								
Yearly income	#Type!								

= frmUpdate ×										
1 . 1 2 3 4	· 5 · I · 6 · I · 7 · I · 8 · I · 9 · I · 10 · I · 11 · I · 12 · I · 13 · I · 14 · I · 15 · I · 16 ·									
Form Header	Form Header									
Management	Management Fee Increase									
Select the branch and the number e.g. 10	Select the branch and then enter the increase as a whole number e.g. 10									
Select the branch	Unbound v * 1									
Town	=[cboBranch].[column](2)									
2 Manager	=[cboBranch].[column](3)									
Current management fee	= =FormatCurrency([cboBranch].[column](4),2)									
Potential increase %	nbound *									
New fee	=[managementfee]+[managementfee]/100*[percentageIncrease]									
5 Yearly income	=[newfee]*12									
6										

cboBranch			\sim		
Format Data	Event	Oth	er All		
Control Source					
Row Source			SELECT tbl	Branch.BranchAddress, tblBranch.BranchID, tblBranch.T	1
Row Source Typ	oe -		Table/Que	у	This is the
Bound Column			1		course of the
					source of the
					combo box

This is the source of the combo box shown in more detail:

iuits		Queŋ	/ Туре		1	Que	ry Setup	I Show/Hide I Clos
== frmUpd	date 🗙 🗗 frmUpda	te : Qu	lery Builder $ imes$					
ti	blManager * ManagerID ManagerSurname ManagerEmail	1 	tblBranchMa * 명 BranchID 명 Manager Status	nager	<u></u>	tblBranch * BranchID BranchAddress Town BranchPostcode BranchEmail	×	
4								
Field: Table: Sort: Show: Criteria: or:	BranchAddress v tbIBranch	Branci tbIBra	hID nch	Town tblBranch	2	ManagerSurname tbIManager	PropertyManagementFee tblBranch	Status tblBranchManager Current manager

cboBran	ich		\sim				
Format	Data	Event	Other All				
Format							
Decimal	Places			Auto			
Visible				Yes			
Column	Count			5			
Column	Widths			2cm;0cm;0cm;0cm;0cm			
Column	Heads			No			

This shows that the branch combo box includes the first five columns in the query shown above all but the first one is hidden. The process is automated by linking the fields on the form to the hidden columns so that when the branch is selected the fields update to show what is in the column

Prop Selection	erty	Shee Fext Box	et						
percenta	ageIncre	ase		\sim					
Format	Format Data Event Other All								
Format Decimal	Format Fixed Decimal Places 0								

This shows the percentage increase has been limited to whole numbers.

Activity 7 – Interface and functionality testing

Note the last two columns have been merged as the solution document is sized to A4 rather than A3. This is to ensure the contents can be seen and read.

Test	Туре	Test data	Expected results	Add screenprint(s) of the results of this test (and any retests)
Num	of test			Ensure you show the test data used in the screenprint(s)
1	Ν	Open form	Blank form to be displayed	Add Owner ×
				Add Owner
				Enter the owner details and then click the save button. You must enter data where * appears
				Owner ID (New)
				Surname *
				Telephone
				Email
				Select the branch
				Number of properties 1 between 1 and 10
				Save

Test Num	Type of test	Test data	Expected results	Add screenprint(s) of the results of this test (and any retests) Ensure you show the test data used in the screenprint(s)
2	X	OwnerID: AutoNumber Surname: Smith Telephone: (0276) 7112384 Email: <u>Smith111@yahoo.com</u> BranchID: 0 NumProperties: 1	Error message to appear saying you must select a branch from this list	Add Owner X Add Owner X Add Owner Enter the owner details and then click the save button. You must enter data where * appears Owner ID 59 Surname Smith Telephone (0276) 7112384 Email Smith111@yahoo.com Select the branch Image: Telephone Microsoft Access X Number of properties Image: Telephone Microsoft Access X You must select a branch Image: Telephone Select the branch Image: Telephone Image: Telephone Image: Telephone Select the branch Image: Telephone Image: Telephone Image: Telephone

		📑 Add Owner 🛛		
		Add Owner		
		Enter the owner details	s and then click the save button.	
		You must enter data wh	here * appears	
		Owner ID	60	
		Surname	Smith *	
		Telephone	(0276) 7112384	
		Email	Smith111@yahoo.com	
		Select the branch	0 ~ *	
		Number of properties	1 between 1 and 10	
		Microsoft Access	×	
		You must select a b	oranch from the list	
			ОК	
		The error message only s	ر said select a branch, which could ۲	nave been
		confusing so I amended to	o say from the list	

Test Num	Type of test	Test data	Expected results	Add screenprint(s) of the results of this test (and any retests) Ensure you show the test data used in the screenprint(s)
3	X*	OwnerID: AutoNumber Surname: Smith Telephone: (0276) 7112384 Email: <u>Smith111@yahoo.com</u> BranchID: 1 NumProperties: 11	Error message to be displayed saying the number of properties has to be between 1 and 10	Add Owner × Add Owner × Add Owner Enter the owner details and then click the save button. You must enter data where * appears Owner ID 60 Surname Smith * Telephone (0276) 7112384 Email Smith111@yahoo.com Select the branch 1 * Number of properties 11 between 1 and 10 Microsoft Access X The number of properties must be between 1 and 10 inclusive OK

Test Num	Type of test	Test data	Expected results	Add screenprint(s) of the results of this test (and any retests) Ensure you show the test data used in the screenprint(s)
4	X*	OwnerID: AutoNumber Surname: Smith Telephone: (0276) 7112384 Email: <u>Smith111@yahoo.com</u> BranchID: 1 NumProperties: 0	Error message to be displayed saying the number of properties has to be between 1 and 10	Add Owner × Add Owner × Add Owner Enter the owner details and then click the save button. You must enter data where * appears Owner ID 60 Surname Smith * Telephone (0276) 7112384 Email Smith111@yahoo.com Select the branch 1 * Number of properties 0 between 1 and 10 Microsoft Access × The number of properties must be between 1 and 10 inclusive OK

Test Num	Type of test	Test data	Expected results	Add screenprint(s) of the results of this test (and any retests) Ensure you show the test data used in the screenprint(s)
5	Ν	OwnerID: AutoNumber	For the	Add Owner X
		Surname: Smith	record to	Add Owner Add Owner
		Telephone: (0276) 7112384	be saved	Enter the owner details and then click the save button. You must enter data where * appears You must enter data where * appears
		Email: <u>Smith111@yahoo.com</u>	in the	
		BranchID: 1	owner	Owner ID 61
		NumProperties: 5	table, a	Surname Smith Telephone (0276) 7112384
			message	Telephone (0276) 7112384 Email Smith111@yahoo.com
			to appear	Email Smith111@yahoo.com Select the branch 1 🗸 *
			Saying it	Select the branch 1 × * Number of properties 5 between 1 and 10
			has been	Number of properties 5 between 1 and 10 Microsoft Access X
			the form	Course The summer details have been caved
			to clear	
				Add Owner X
				Add Owner
				Enter the owner details and then click the save button. You must enter data where * appears
				Owner ID (New)
				Surname +
				Telephone
				Email
				Select the branch 0 *
				T between 1 and 10
				Save
				OwnerID -1 OwnerEmail - OwnerTelephone - OwnerSurna - BranchID - NumPropert - Click
				61 Smith111@yahoo.com (0276) 7112384 Smith 1 5 54 Wa.Micha@bzi.com (0276) 7672384 Ward 1 6
				53 C.Bruc@mlt.org (0276) 2339429 Carroll 5 9

Test Num	Type of test	Test data	Expected results	Add screenprint(s) of the results of this test (and any retests) Ensure you show the test data used in the screenprint(s)
6	N	Branch selection: 18 Calypso Hill	Town to display as Uxbury Manager to display as Brotherick (current manager) Management fee to display as £208.00	Update Fee Management Fee Increase Select the branch and then enter the increase as a whole number e.g. 10 Select the branch Town Manager Current management fee Potential increase % * Yearly income #Type! Select the branch and then enter the increase as a whole number e.g. 10 Select the branch and then enter the increase as a whole number e.g. 10 Select the branch and then enter the increase as a whole number e.g. 10 Select the branch and then enter the increase as a whole Select the branch and then enter the increase as a whole number e.g. 10 Select the branch 18 Calypso Hill Yearly income Potential increase % Potential increase % Yearly income

Test Num	Type of test	Test data	Expected results	Add screenprint(s) of the results of this test (and any retests) Ensure you show the test data used in the screenprint(s)
7	N	Branch selection: 18 Calypso Hill Town: Uxbury Manager: Brotherick Management Fee: £208.00 Potential increase %: 10	New management fee to display as £228.00 (208 +10%) Yearly Income to display as £2745.60 (228*12)	Update Fee Select the branch and then enter the increase as a whole number e.g. 10 Select the branch 18 Calypso Hill Town Uxbury Manager Potential increase % • ************************************

* Candidates may use R in place of X where indicated – see Lead Examiner report Jan 2020

Activity 8 – Interface evaluation

No evaluation included. See the examples discussed in Script A and Script B.

Also see discussions of the examples in the Lead Examiner report and scripts for the live January 2020 examination.