Mark Scheme (Results)

June 2024

Pearson Edexcel International Advanced Level in Information Technology

Unit 4: Relational Databases

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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.

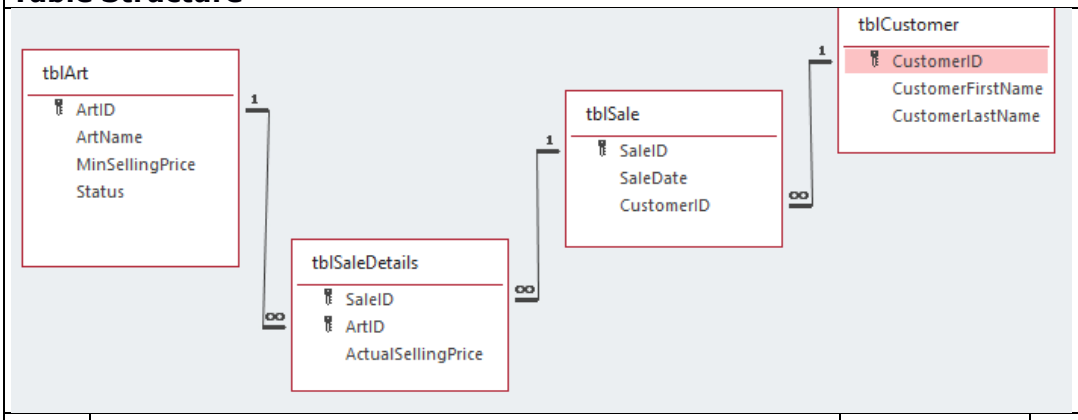
Unit 4 Summer 2024– Mark Scheme

Note to examiners

Where example screenshots are included, these are indicative content only and not a definitive answer. Students should receive credit based on the marking instructions in the answer column.

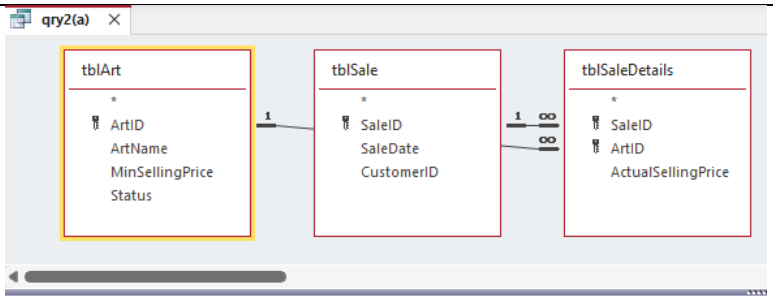
Question number	Answer		Additional Guidance	Mark
1(a)(i)	**Data type error**			
	A1	MinSellingPrice changed to Currency		1
1(a)(ii)	**Range check for MinSellingPrice**			
	A2	Correct range e.g. • >=100 AND <=1500 • >99 AND <1501 • BETWEEN 100 AND 1500	Award any equivalent expression	1
	A3	Validation rule must have suitable validation text		1
			Total	**3**

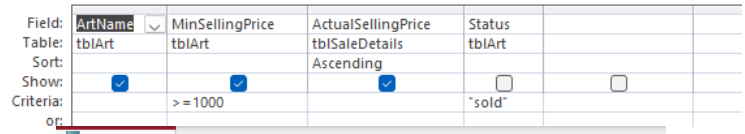
Question number	Answer		Additional Guidance	Mark
1(b)	**Add new art form**			
	B1	Opens ready for data entry		1
	B2	ArtID disabled **OR** Status disabled		1
	B3	**Three** from: • Form labels are appropriate (not database field names) • Form has meaningful title • Entry boxes on form are resized appropriately to reflect the expected data • Instructions on how to use • Asterisk on any field except ArtID		1
	B4	Status defaulted to Available	Must see in property sheet	1
	B5	Button present and suitably labelled e.g. Save		1
	B6	ArtID generated e.g. DMAX("ArtID","tblArt")+1		1
	B7	ArtName, MinSellingPrice, Status would save in Art table		1
	B8	User asked if they want to save		1
	B9	All fields would save if the user selects yes/okay		1
	B10	Cancelled save message present		1
	B11	Cancel save message would display only if the user has selected no/cancel		1
			Total	**11**

Question number	Answer		Additional Guidance	Mark
1(c)	**Table Structure**			
				
	C1	Use of appropriate table and field names and naming conventions	Table names use TBL Field and table names use case consistently	1
	C2	Sale Details table is present with suitable fields		1
	C3	Sale table is present with suitable fields		1
	C4	Customer table is present with suitable fields		1
	C5	1:M relationship between Customer and Sale		1
	C6	1:M relationship between Sale and Sale Details		1
	C7	1:M relationship between Art and Sale Details		1
	C8	Appropriate primary key used for Sale table		1
	C9	Appropriate composite key used for Sale Details table		1
	C10	Appropriate primary key used for Customer table		1
	C11	Date/Time is used for Sale Date **AND** Currency is used for Actual Selling Price		1
			Total	**11**

Question number	Answer		Additional Guidance	Mark
1(d)	**Import**			
	D1	Customer table – 25 records		1
	D2	Sale table – 32 records		1
	D3	Sale Details table – 42 records		1
			Total	**3**
			Total for question	**28**

Question number	Answer	Additional Guidance	Mark
2(a)	**Query about sold works of art**		



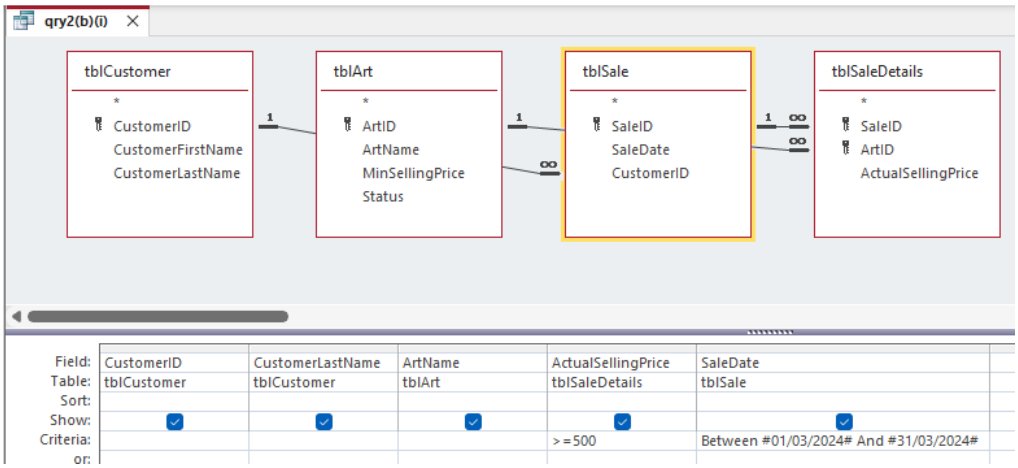


qry2(a)

ArtName	MinSellingPrice	ActualSellingPrice
Might of Despair	£1,018.00	£1,000.00
Redundant Curiosity	£1,042.00	£1,097.00
Father	£1,052.00	£1,151.00
Turtle Detaching a Briefcase	£1,168.00	£1,168.00
Guide of Death	£1,263.00	£1,263.00
Honesty of Eternity	£1,121.00	£1,304.00
Climate	£1,377.00	£1,450.00
Your Cosmic Self	£1,359.00	£1,516.00
Unfortunate Despair	£1,352.00	£1,557.00
The Unfolding Creation	£1,341.00	£1,557.00

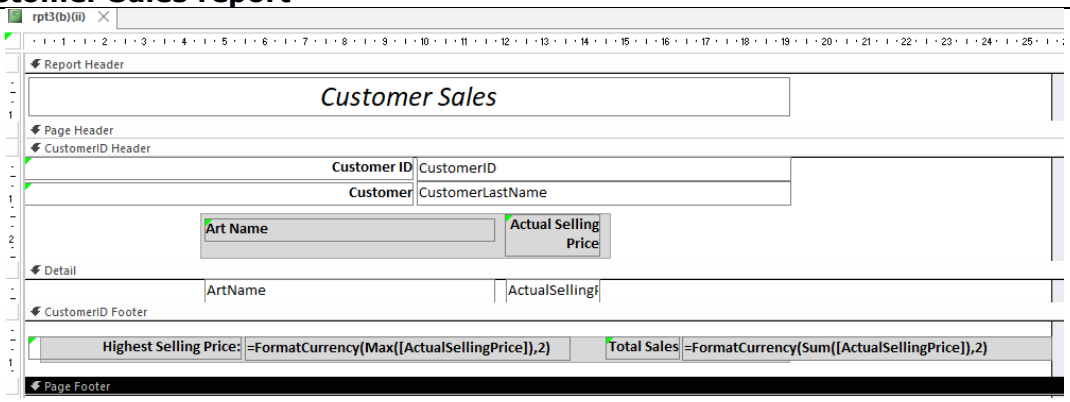
A1	MinSellingPrice at least 1000 e.g. • >=1000 • >999		1
A2	Status = Sold Or Status <> Available		1
A3	ActualSellingPrice sorted into ascending order		1
A4	Status in the query grid but not ticked		1
A5	Columns not truncated		1
A6	Correct results shown	May also include records added as part of their testing.	1
		Total	**6**

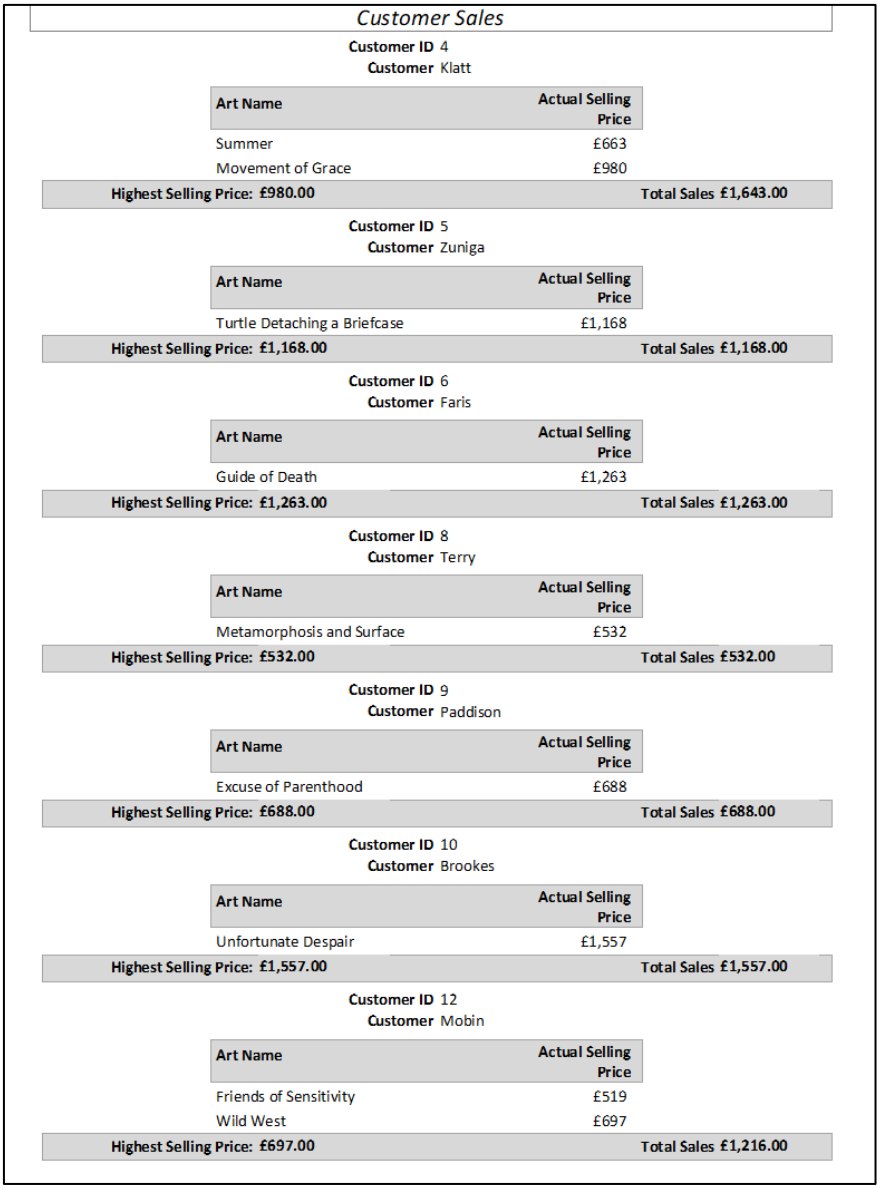
Question number	Answer	Additional Guidance	Mark
2(b)(i)	**Customer Sales query**		



B1	Correct related tables added		1
B2	Criteria correct for Actual Selling Price • >=500 • >499		1
B3	Criteria correct for SaleDate e.g. • Between #01/03/2024# And #31/03/2024# • >= #01/03/2024# And <=#31/03/2024# • >#29/02/2024# And <#01/04/2024#	Allow #28/02/2024#	1
		Total	**3**

Question number	Answer	Additional Guidance	Mark
2(b)(ii)	**Customer Sales report**		





Customer Sales

Customer ID 4
Customer Klatt

Art Name	Actual Selling Price
Summer	£663
Movement of Grace	£980

Highest Selling Price: £980.00 **Total Sales £1,643.00**

Customer ID 5
Customer Zuniga

Art Name	Actual Selling Price
Turtle Detaching a Briefcase	£1,168

Highest Selling Price: £1,168.00 **Total Sales £1,168.00**

Customer ID 6
Customer Faris

Art Name	Actual Selling Price
Guide of Death	£1,263

Highest Selling Price: £1,263.00 **Total Sales £1,263.00**

Customer ID 8
Customer Terry

Art Name	Actual Selling Price
Metamorphosis and Surface	£532

Highest Selling Price: £532.00 **Total Sales £532.00**

Customer ID 9
Customer Paddison

Art Name	Actual Selling Price
Excuse of Parenthood	£688

Highest Selling Price: £688.00 **Total Sales £688.00**

Customer ID 10
Customer Brookes

Art Name	Actual Selling Price
Unfortunate Despair	£1,557

Highest Selling Price: £1,557.00 **Total Sales £1,557.00**

Customer ID 12
Customer Mobin

Art Name	Actual Selling Price
Friends of Sensitivity	£519
Wild West	£697

Highest Selling Price: £697.00 **Total Sales £1,216.00**

B4	Title is in the page or report header – **mark from Design view only** (do not accept title in detail section)		1

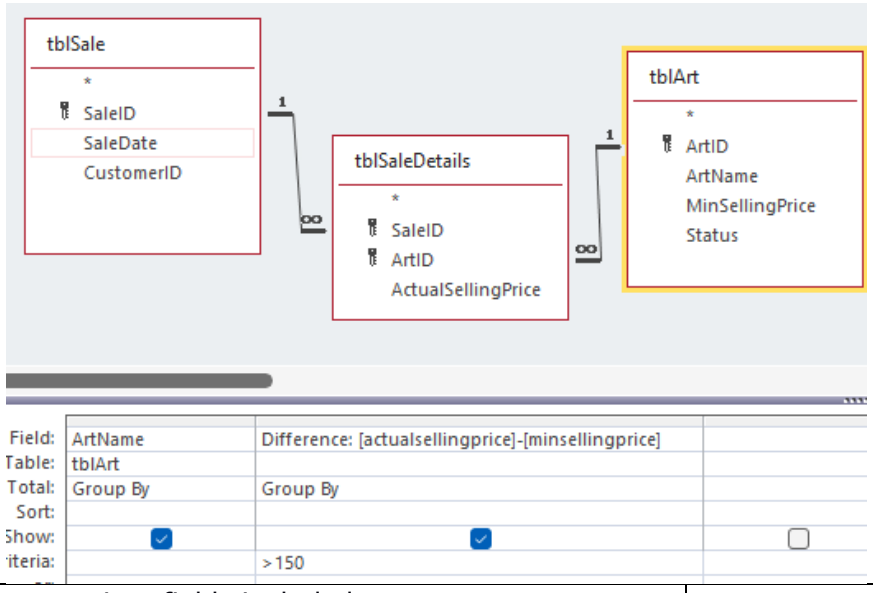
	B5	Title is as given	Ignore minor errors in spelling Ignore case	1
	B6	Grouped by CustomerID– **mark from Design view only**		1
	B7	Rectangle used around Report header OR Art Name and Actual Selling Price labels OR Highest Selling Price and Total Sales labels		1
	B8	Actual Selling Price label and values are aligned to the right		1
	B9	Highest Selling Price correct Max(ActualSellingPrice)		1
	B10	Total Sales correct Sum(ActualSellingPrice)		1
	B11	Highest Selling Price and Total Sales in the correct footer		1
	B12	Highest Selling Price or Total Sales formatted as Currency		1
	B13	Report and formatting are as given		1
			Total	**10**

Question number	Indicative content	Mark

2(c)	**What information is needed**
	• Customer details to be able to send the invitation to them
	• Details of the sales to be able to find the relevant customers, dates, how many items they have bought.
	
	Data already present and additional data needed
	• CustomerID, Customer name, ArtID SaleDate is already there
	• method of contact is missing e.g. email address or address
	• The correct customers to send an invitation could be found but they could not be invited
	
	Recommendations
	• A query would be needed
	• To find the minimum information the query would need to include the CustomerID, name, SaleDate and ArtID
	• The query would be grouped CustomerID so that the sales are associated with the correct customer
	• Criteria would be used to limit the SaleDate to within 2024
	• A count would be used on the ArtID to count the number of works per customer and criteria used to find only those with more than 5
	• The database would allow partial completion of this task i.e.
	  ○ CustomerID, CustomerFirstName and CustomerLastName are in the database.
	  ○ ArtID and SaleDate are in the database so the count and the criteria could be used
	  ○ The customer links to the sale and the works of art through relationships Customer to Sale – Sale to Sale Item – Art to Sale Item
	• A report could be used for the invitation itself. This would be based on the query. These could be printed and posted. Or the query could just be used to return the names and email addresses and these could be used to send emails
		9

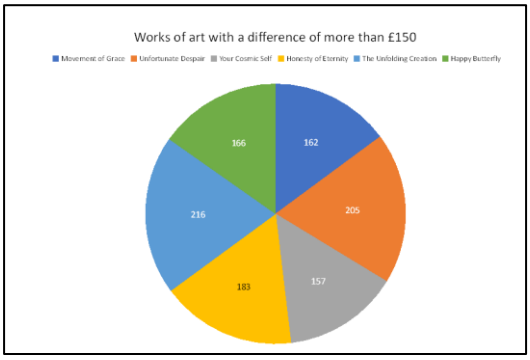
Level	Mark	Descriptor
	0	No Awardable content
Level 1	1-3	• Analysis is flawed or superficial, containing simple statements that show limited understanding of the subject matter. • Solution may contain some aspects that are appropriate, but is generally ineffective.
Level 2	4-6	• Analysis is sound, containing 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.

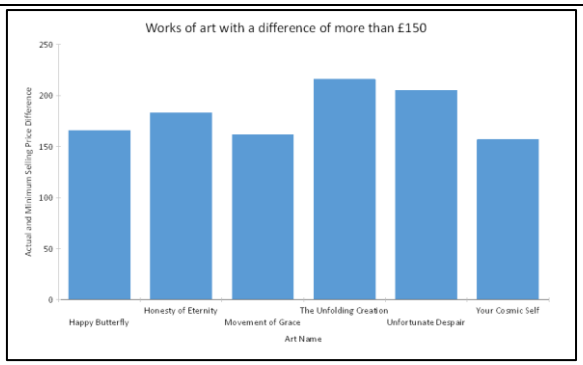
Total	**9**
Total for question	**28**

Question number	Answer		Additional Guidance	Mark
3a	**Query for Chart** 			
	A1	No inappropriate fields included		1
	A2	Difference between ActualSellingPrice and MinSellingPrice calculated.		1
	A3	Criteria correct for Difference • >150 • >=151		1
	A4	Generated field has a suitable field name		1
			Total	**4**

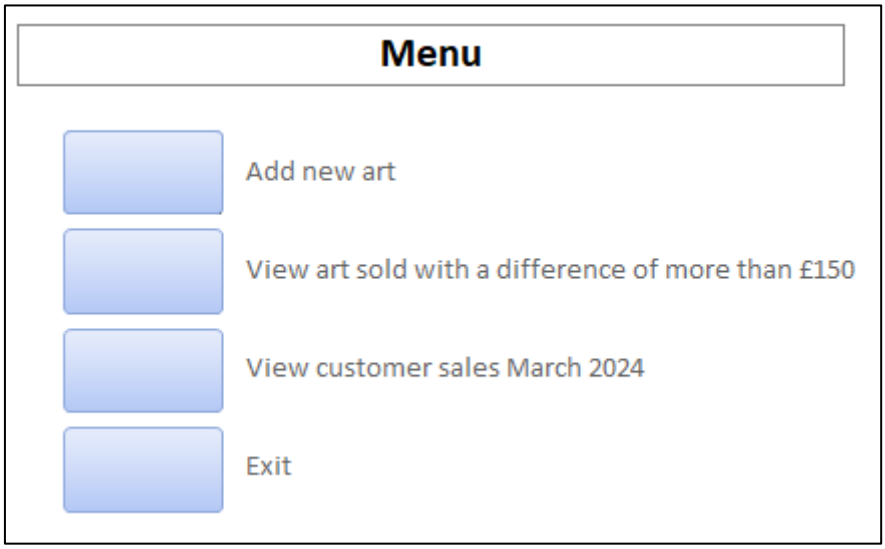
Question number	Answer		Mark
3b	**Chart**		

ArtName	Difference
Movement of Grace	£162.00
Unfortunate Despair	£205.00
Your Cosmic Self	£157.00
Honesty of Eternity	£183.00
The Unfolding Creation	£216.00
Happy Butterfly	£166.00





B1	Chart created	Chart created	1
B2	Meaningful chart title used	Meaningful chart title used	1
B3	One axis shows art names	Art names on legend or as data labels on chart	1
B4	At least one axis has suitable label (Art Names or Difference)	Suitable legend – can clearly see which art name is linked to a sector – by use of colour and/or shading	1
B5	Difference axis contains suitable scale **OR** • Data values are shown on the bars/columns	Data values are shown on each sector of the pie chart	1
B6	Bar/column chart is fit for purpose No legend Appropriate sizing of elements on page (e.g. title larger than axis labels, data labels) Art names and differences match data in database	Pie chart is fit for purpose Has legend Appropriate sizing of elements on page (e.g. title larger than legend labels, data labels) Art names and differences match data in database	1
		Total	**6**
		Total for question 3	**10**

Question number	Answer		Additional Guidance	Mark
4	**Dashboard**  			
	A1	Appropriate heading and 4 appropriately labelled buttons	Button labels must be written to help the user e.g. **not** Open query 2(a), Open query	1
	A2	Data entry form would open		1
	A3	Query from 2(a) would run		1
	A4	Report 3(b) would open in print preview		1
	A5	Database would close		1
			Total	**5**
			Total for question 4	**5**

Question number	Indicative content	Mark
5	Note: Analysis and recommendations must be based on the content of Figure 2. **Analysis** • The database already has the Sale ID and Sale Date in tblSale • The database already has the Art ID in tblArt and tblSaleItem • The database already has the ActualSellingPrice in tblSaleItem and the ArtID as a foreign key • There is no table in the database to hold the sales person's details • The fee % for the salesperson is not in the database • There is no table in the database to hold the artist's details • There is no table in the database to hold the art category details • There is a 1:M relationship between Artist and Art, an artist can create many pieces of art • There is a 1:M relationship either between an art category and art or an art category and artist. An art category can have many pieces of art associated with it or many artists associated with it • Salesperson Fee and Total Cost can be generated **Recommendations** • tblSalesperson o this table should be created to hold the first name, last name o it should have the primary key of SalespersonID o it does not need to hold the Salesperson Fee % unless the fee was likely to change • tblCategory o this table should be created to hold the different categories of art o it should have the primary key of CategoryID • tblArtist o this table should be created to hold the first name and last name of the artist o it should have the primary key of ArtistID o it may include the CategoryID as a foreign key if an artist only has one category • tblArt o this table may include CategoryID as a foreign key if an artist can create art that belongs in different categories • Salesperson Fee can be generated by calculating 5% of the Actual Selling Price • Total Paid to Artist can be generated by subtracting the Salesperson Fee from the Actual Sales Price	9

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		Total for question	**9**

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