

# **Unit 2 Creating Systems to Manage Information – 2019**



## **Level 3 National in Information Technology**

### **Part A Additional Sample Assessment Marking Guidance**

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## Introduction

This solution provided is only **one** example. Candidates could have approached it several different ways. It is important to read this guidance with each activity. If you are in any doubt whether the method a candidate has used is valid, please refer to your team leader. Do not assume a method that differs from solution is incorrect.

## Activity 1 – Database Relationship Screenprint (45 mins)

### How examiners must approach marking this activity

<b>Trait 1</b>	<ul style="list-style-type: none"><li>• Candidates should be using <b>all and only</b> attributes given in data file.</li><li>• More than two attributes (including keys) in wrong table class as significant data redundancy.</li><li>• Two attributes in wrong table/missing – Band 2</li><li>• One attribute in wrong table/missing – Band 3</li><li>• If truncated see how many missing from what you expect to see</li></ul>
<b>Trait 2</b>	<p><b>Relationship lines</b></p> <ul style="list-style-type: none"><li>• Do not need to check the fields they link to, referential integrity or anything else, only the lines are important for this</li></ul> <p><b>Relationship types</b></p> <ul style="list-style-type: none"><li>• Check referential integrity</li><li>• Must be links on correct fields and referential integrity present</li></ul> <p>Band 1 1 relationship line correct (ignore relationship type)</p> <p>Band 2 two relationship lines correct (ignore relationship type)</p> <p>Band 3 1 out of 2 relationships and relationship types correct (exactly three tables, two relationships and two relationship types present)</p> <p>Band 4 all relationship lines and relationship types correct (exactly 3 tables, 2 relationships and 2 relationship types present)</p>

**Note foreign key evidence for activity 2 taken from this screenprint.**

## Activity 2 – Table Structures and Validation (45 mins)

### How examiners must approach marking this activity

<b>Trait 1</b>	<p>Look for naming conventions and whether fields are sensible</p> <ul style="list-style-type: none"> <li>• tbl for table</li> <li>• fields should be consistent either have spaces or do not, camel case etc, so long as consistent. Fine for IDs to have no spaces even if other fields have spaces</li> <li>• If standard naming conventions are not used then cannot get higher than band 2 for trait 1.</li> </ul>
<b>Trait 2</b>	<p>Check against their structure in activity 1.</p> <ul style="list-style-type: none"> <li>• Primary and foreign keys should match</li> <li>• No new foreign keys should be introduced</li> <li>• No activity 1 then check against ERD given in solution.</li> <li>• Band 3 can also be read as “all foreign and most primary”</li> </ul>
<b>Trait 3</b>	<p>Look at data types.</p> <p>HouseNum: Text TicketPrice: Currency Event Date: Date/Time NumTickets: Number Rest short text Primary any suitable Foreign matches primary (Number foreign, AutoNumber primary etc.)</p> <ul style="list-style-type: none"> <li>• Class same datatype incorrectly used as <b>one</b> error.</li> <li>• <b>Limited</b> means <b>more than two</b> different datatypes are incorrect.</li> </ul>
<b>Trait 4</b>	<p><b>Validation must relate to the scenario and activity 2 for bands 3 and 4</b> <b>Validation rules must contain relevant validation text for band 4.</b></p> <p><b>Scenario requirements</b></p> <ul style="list-style-type: none"> <li>• Evening Christmas events have been planned for 20 to 22 December 2019.</li> <li>• Each event has a different ticket price.</li> <li>• There are two types of seat: seats without tables and seats with tables.</li> <li>• There must be at least one ticket purchased with each sale.</li> <li>• A sale cannot exceed eight tickets.</li> </ul> <p><b>Activity 2 requirements</b></p> <ul style="list-style-type: none"> <li>• a record will not save without the surname, house number and postcode of the customer being present</li> <li>• a record will not save if the postcode is not in the correct format</li> <li>• a record will not save if the event selected is invalid</li> <li>• a record will not save if the seat type is invalid</li> <li>• a record will not save if the number of tickets purchased is below the accepted range</li> <li>• a record will not save if the number of tickets purchased is above the accepted range</li> </ul> <p><b>Watch out for screenprints that do not show the actual field the validation is applied to.</b></p> <p><b>Just acceptable for keys</b> Would need to see name of table and field name (could be written)</p> <p><b>Just acceptable for non-keys</b> Would need to see the name of the field (could be written)</p>

	<b>Presence Check (1 required)</b> Should be on any of these 3 fields <ul style="list-style-type: none"> <li>• Surname</li> <li>• House number</li> <li>• Postcode</li> </ul>
	<b>Length Check (1 required)</b> <ul style="list-style-type: none"> <li>• Any text field</li> <li>• A length that is suitable</li> </ul>
	<b>Value lookup or range check (1 required)</b> <ul style="list-style-type: none"> <li>• NumTickets <ul style="list-style-type: none"> <li>◦ Range is between 1 and 8 with suitable validation text</li> <li>◦ Lookup values are 1 to 8 must have limit to list set to Yes to be classed as a range.</li> </ul> </li> <li>• SeatType <ul style="list-style-type: none"> <li>◦ values are table/no table</li> <li>◦ does not need required set to yes but will help with testing activity if they do that</li> </ul> </li> </ul>
	<b>Table Lookup (1 required)</b> <ul style="list-style-type: none"> <li>• Should have been applied to <b>EventID</b> if the requirements of the activity are taken into account.</li> <li>• Could use another foreign key</li> <li>• Limit to list must be set to Yes</li> </ul> Anything else is not suitable
	<b>Format Checks (1 required)</b> <ul style="list-style-type: none"> <li>• Postcode <ul style="list-style-type: none"> <li>◦ input mask, &gt;LL0\ 0LL</li> <li>◦ or appropriate validation rule and text</li> </ul> </li> </ul>
<b>Band 1</b>	<ul style="list-style-type: none"> <li>• At least 1 type of validation has been attempted – though may be inaccurate</li> </ul>
<b>Band 2</b>	<ul style="list-style-type: none"> <li>• 2 types of validation are accurate</li> <li>• Lookups shown in data sheet view validation text missing, limit to list not set to yes, presence check on primary key – can still be classed as being accurate in this band</li> <li>• If lookups shown in datasheet view must be showing the drop down items in the combo box</li> </ul>
<b>Band 3</b>	<ul style="list-style-type: none"> <li>• 3 types of validation are accurate</li> <li>• Lookups shown in data sheet view validation text missing, limit to list not set to yes, presence check on primary key – can still be classed as being accurate in this band</li> <li>• If lookups shown in datasheet view must be showing the drop down items in the combo box</li> </ul>
<b>Band 4</b>	<ul style="list-style-type: none"> <li>• All validation correct including suitable validation text, limit to list set to yes on table lookup</li> </ul>

## Activity 3 – Queries and Report (40 minutes)

(a) Create a query to display an alphabetically sorted list of the events running on the 20th and 21st of December. It must show event description and event ticket price only.

(b) Create a query that will calculate:

- the number of table tickets sold
- the income the tickets sold would generate.

Display:

- the event description
- the number of table seat tickets sold
- the income generated.

Trait 1	Band 1	1 query or the report present. At least two fields appropriate	
	Band 2	2 queries or query and report present. More than two fields appropriate	
	Band 3	Both queries and report present. Fields mostly appropriate	
	Band 4	Query A	
		In the grid	Displayed
		<ul style="list-style-type: none"><li>• EventDate</li><li>• EventDescription</li><li>• EventTicketPrice</li></ul>	<ul style="list-style-type: none"><li>• EventDescription</li><li>• EventTicketPrice</li></ul>
		Query B	
		In the grid	Displayed
		May include more (relevant) but at least <ul style="list-style-type: none"><li>• EventDescription</li><li>• TableSeatsSold</li><li>• SeatType</li><li>• Income</li></ul>	<ul style="list-style-type: none"><li>• EventDescription</li><li>• Table Tickets Sold</li><li>• Income</li></ul>
		Report	
		EventDescription, Number of Customers	All appear once only per event
		Table seats sold, Non table seats sold	
		Total Tickets	
Trait 2	9 sort/criteria/calculations in total		
	Query A (2) ascending sort (EventDescription), criteria for EventDate (20 and 21 December 2019)		
	Query B (3) criteria for table seats (table), number of table tickets sold (Sum(NumTickets)), income (sold * EventTicketPrice)		
	Report (4) number of customers, number of table tickets*, number no table tickets*, total tickets <i>*may use grouping to achieve as opposed to calculations</i>		
	Band 1	1 query or report has been attempted, little, if any are correct	
	Band 2	2 queries or 1 query and report has been attempted, 3 are correct	
	Band 3	All 3 have been attempted, 5 are correct	
Band 4	All 3 have been attempted all are correct		

<b>Trait 3</b>	<b>Band 1</b>	<p>Will have attempted at least one task</p> <p>Data may be truncated</p> <p>May be too many records showing due to lack of grouping or lack of relationships in query window</p>
	<b>Band 2</b>	<p>Will have attempted at least two tasks</p> <p>Limited truncation</p> <p>Report pdf may be missing</p> <p>Query B uses grouping and has correct relationships shown in the top of the query window</p>
	<b>Band 3</b>	<p>Will have attempted 1 query and the report</p> <p><b>Queries</b></p> <ul style="list-style-type: none"> <li>• Ordering of columns in the query results is appropriate</li> <li>• No truncation</li> <li>• Generated fields may not have appropriate names</li> <li>• Grouping and relationships correct (Query b)</li> </ul> <p><b>Report</b></p> <ul style="list-style-type: none"> <li>• Includes suitable title</li> <li>• Includes suitable field labels</li> <li>• No truncation of data</li> </ul>
	<b>Band 4</b>	<p>Will have attempted all tasks</p> <p><b>Queries</b></p> <ul style="list-style-type: none"> <li>• Ordering of columns in the query results is appropriate</li> <li>• Income is shown as currency with 2 decimal places</li> <li>• No truncation</li> <li>• Generated fields have names that aid readability</li> <li>• Grouping and relationships correct</li> </ul> <p><b>Report</b></p> <ul style="list-style-type: none"> <li>• Includes suitable title</li> <li>• Includes suitable field labels</li> <li>• No truncation of data</li> <li>• Good use of white space</li> </ul>

## Activity 4 – Testing (20 minutes)

### How examiners approach marking this activity

#### Tests to be carried out

- a record will not save without the surname being present
- a record will not save if the postcode is not in the correct format
- a record will not save if the event selected is invalid
- a record will not save if the seat type is invalid
- a record will not save if the number of tickets purchased is below the accepted range
- a record will not save if the number of tickets purchased is above the accepted range

<b>Band 1</b>	<ul style="list-style-type: none"><li>• Not all of the tests requested will be present or they may be inappropriate</li><li>• Type of test may not be present or may be incorrect</li><li>• There will be no test data, or it will not relate to the test being carried out</li><li>• Expected results may be inappropriate</li><li>• At least 1 test result will be appropriate</li><li>• Errors may be present that have not been identified</li></ul>
<b>Band 2</b>	<ul style="list-style-type: none"><li>• All of the tests will be present, but they may not be entirely appropriate</li><li>• Type of test may not be present or may be incorrect</li><li>• There will be test data, but it may be incomplete or general e.g. leave surname blank rather than stating exactly what data will be used in each field</li><li>• Expected results will be sensible but may not be detailed e.g. 'error message' rather than 'error message saying surname has to be present'</li><li>• Actual results will be present, but some may not be entirely appropriate</li><li>• Errors may/may not have been found</li></ul>
<b>Band 3</b>	<ul style="list-style-type: none"><li>• All tests will be present, and they will be appropriate</li><li>• Test data will be specific for all fields</li><li>• Type of test will be mostly accurate</li><li>• Expected results will be specific</li><li>• Actual results will show all of the test data used and any relevant messages</li><li>• Do not penalise if there are no errors and the testing is accurate</li></ul>



## Activity 5 – Evaluation (20 minutes)

### How examiners approach marking this activity

- Read evaluation and determine **best fit** for band based on understanding of technical concepts and technical vocabulary
- Assign position in **that** mark band based on evaluative content

What should be evaluated:

- how well your database structure has minimised data duplication
- how well your database structure meets these requirements:
  - there are two types of seat: seats without tables and seats with tables.
  - there must be at least one ticket purchased with each sale.
  - a sale cannot exceed eight tickets.

<b>Band 1</b>	Will be very superficial with major omissions
<b>Band 2</b>	Will discuss some aspects sensibly though may not fully explain them or relate them very well to their own solution.
<b>Band 3</b>	<p>Will discuss data duplication in terms of</p> <ul style="list-style-type: none"><li>• repeated customer data</li><li>• repeated event data</li><li>• removing repeated data into table whilst maintaining the link</li><li>• may pick up that seat type cannot meet 3NF as they cannot introduce any new fields i.e. it does not depend on the primary key.</li></ul> <p>Needs to be clear they are talking about their solution and not just trying to slip technical vocabulary in. Need to see clear understanding</p> <p>Meeting requirements</p> <p>Seat type may already have been discussed in terms of not meeting 3NF.</p> <p>Should also talk about their choice of validation and why it was the best.</p> <p>Should talk about their choice of validation for number of tickets sold and why it was the best.</p>