Unit 2 Creating Systems to Manage Information





Level 3 National in Information Technology

January 2023
Marking Guidance

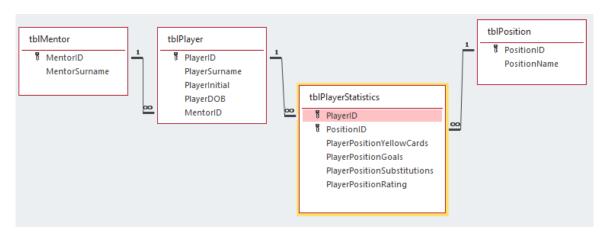
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Activity 1 – Database Relationship Screenprint (45 mins)

How examiners must approach marking this activity

You can only award marks for a relationship screenprint and NOT for table designs. If you have any doubt, contact your Team Leader. If ERD is at the beginning of Activity 2, you should still mark it.



Trait 1 General

- Candidates should use **all and only** attributes given in the data extract
- Look at each field. Count an error with a field only once. For example, MentorID should be in tblMentor and tblPlayer. If it is not in both then that is one error
- If tables are truncated, then the fields you cannot see are missing
- If fields are truncated so long as you can determine what they are being used for then accept

Band 1	More than 2 attributes in wrong table/missing
Band 2	2 attributes in wrong table/missing
Band 3	1 attribute in wrong table/missing
Band 4	All correct including keys and no extra attributes or tables

Trait 2 Relationship lines

· Check lines only. DO NOT look at fields

Relationship types

· Link on correct fields and referential integrity enforced

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Band 1	One relationship line correct
	Ignore relationship type
Band 2	Minimum of two relationship lines correct
	Ignore relationship type
Band 3	• Exactly four tables, three relationships and three relationship
	types present
	Two out of three relationships and relationship types correct
Band 4	• Exactly four tables, three relationships and three relationship
	types present
	All relationship lines and relationship types correct.

Activity 2 – Table Structures and Validation (45 mins)

How examiners must approach marking this activity

	now examiners must approach marking this activity
Trait 1	Look for naming conventions and whether fields are sensible
	tbl for table
	Fields should be consistent either have spaces or not, camel case etc, so
	long as consistent. Check ID fields for consistency. ID fields may not
	match the rest of the fields but must be consistent with each other
	If standard naming conventions are used for the tables but the fields are
	not consistent then cannot get higher than Band 3 for trait 1
	 If standard naming conventions are not used for table but fields consistent
	then cannot get higher than Band 3 for trait 1
Trait 2	Check against their ERD structure in activity 1
	Primary and foreign keys should match what they had in activity 1
	Band 3 can also be read as "all foreign and most primary"
	No activity 1 then check against ERD given in solution
Trait 3	Look at data types.
	Player DOB: Date/Time
	Position Rating: Number
	Number Goals: Number
	Number Substitutions: Number
	Number Yellow Cards: Number
	Primary keys – any sensible
	 Foreign keys – must match primary (e.g., AutoNumber primary, Number
	foreign, Number primary, Number foreign etc.)
	Limited means more than one different datatype is incorrect
Trait 4	Scenario requirements
Trait 1	The player rating must be at least one and no higher than five. One is the
	highest rating they can achieve
	Activity/testing requirements
	 A record for a player will not save without the player's date of birth being present
	A record for a player will not save without the player's initial in the correct format
	A record for a player will not save if the player is assigned an invalid mentor
	 A record for player statistics will not save if the player rating is below the accepted range
	 A record for player statistics will not save if the player rating is above the accepted range
	A record for player statistics will not save without a valid position
	Watch out for screenprints that do not show the actual field the validation is applied to. If you cannot see the actual validation rule/check just the table view then don't award any marks.
	A .

Just acceptable for keys

Would need to see name of table and field name (could be written). If you cannot see the table name and field name it must only be classed as **Attempted**.

tblPlayer and field MentorID

General Lookup	
Display Control	Combo Box
Row Source Type	Table/Query
Row Source	SELECT [tblMentor].[MentorID], [tblMentor].[MentorSurname]
Bound Column	1
Column Count	2
Column Heads	No
Column Widths	1.508cm;2.54cm
List Rows	16
List Width	4.048cm
Limit To List	Yes

Just acceptable for non-keys

Table name need not be seen, field name is enough (could be written). If you cannot see the field name it must only be classed as **Attempted**

PlayerDOB

Format	Short Date
Input Mask	
Caption	
Default Value	
Validation Rule	Is Not Null
Validation Text	The player's date of birth must be present
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Band 1	At least 1 type of validation has been attempted
Band 2	All attempted or 2 types of validation are correct
Band 3	3 types of validation are required checks
Band 4	All are required checks

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Presence	Required check	
	 PlayerDOB- validation rule and suitable validation text 	
	Correct check	
	 PlayerDOB – validation rule without suitable validation 	
	text or Required set to Yes	
	Attempted	
	 Presence check on any field other than primary keys or 	
	PlayerDOB using a validation rule or required set to yes	
Length	Required check	
	Any field that has a suitable length check	
	Attempted	
	Field size not left at default of 255 but not good	
Value	Required check	
lookup	PlayerPositionRating minimum of 1 and maximum of 5	
or Range	Combo box (does not need to have limit to list set to Yes)	
	Validation rule e.g., between 1 and 5, with validation text	
	Correct check	
	 PlayerPositionRating 	
	 Incorrect range e.g., minimum 1 and maximum 6 	
	 Validation rule with no validation text 	

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	 If a combo used may show you in datasheet view
	rather than design view must see all the values.
	Attempted
	Combo box in datasheet view but cannot see ALL of the
	items
	Any other value lookup/range that works
Table	Required check
lookup Must be	A lookup from any of their foreign keys to their primary
from	keys Limit to list set to Yes
design view	 Row source may be truncated but you should still see the name of the table in the select statement e.g. [tblMentor]
	Correct check
	A lookup from any of their foreign keys to their primary
	keys
	Limit to list is No
	Row source may be truncated but you should still see the
	name of the table in the select statement e.g. [tblMentor]
	Attempted
	Table lookup that is invalid e.g., looking up to the key in
	its own table.
Format	Required check
	 Correct input mask (or equivalent) for PlayerInitial
	>L (may have ;; after it etc.)
	Correct check
	e.g., >L<
	Attempted
	Suitable format check on any TEXT field

Activity 3 – Queries and Report (40 minutes) How examiners must approach marking this activity

Trait 1	This trait focusses on the candidate being able to recognise the fields that will be required to produce the results requested. There are twelve points in total. One point is awarded for each field that appears in the query grid up to twelve. NOTE POINTS ARE NOT MARKS
Trait 2	This trait focusses on the candidate being able to use sort(s), criteria and calculations. There are twelve points in total One point is awarded for each of the points achieved. If there is only one big table used for query B and/or report, then the candidate cannot get past top of band 2. In the examiner record, award all the points that would have been achieved to get the suggested mark and band but ensure you take it into account for the given mark i.e. override the suggested mark and explain why in the comment box
Trait 3	This trait focusses on the candidate being able to display: • only what has been requested • in a manner that would aid readability and understanding of data (ordering of columns in queries, no truncation of data, only what has been asked to be displayed is displayed etc.) There are twelve points in total One point is awarded for each of the points achieved.

	Query A	
	Create a query to display a list of players who have a rating of at least one and no	
	three. It must show the player surname, date of birth, position and rating. It orted from youngest to oldest player.	
Trait 1	PlayerSurname(1)	
Any	PlayerDOB (1)	
view	Position (ID or name) (1)	
	PositionRating (1)	
Trait 2	If there is only one big table used for query B and/or report, then cannot get	
Design	past top of band 2	
view		
	PlayerDOB has descending sort (1)	
	PositionRating between 1 and 3 inclusive (1)	

Trait 3 Ordering of columns is appropriate (1)

No truncation (datasheet view field names and data) (1)

These fields **only** are displayed (1)

- PlayerSurname
- PlayerDOB
- Position (ID or Name)
- PositionRating

Addition

This point can only be awarded **once** throughout the entire activity.

At least one generated field named sensibly (in this query or the report) (1)

Query B		
e a query that will calculate and display the:		
age of the players, for example 16		
number of players for each age		
umber of yellow cards for each age		
ighest number of goals for each age.		
Design view only Capable field used in the calculation for Age Crown (1)		
Sensible field used in the calculation for Age Group (1) Sensible field used in the calculation for Number of Players (1)		
Sensible field used in the calculation for Number of Yellow Cards (1)		
Sensible field used in the calculation for Highest Number of Goals (1)		
If there is only one big table used for query B and/or report cannot get past		
top of band 2.		
top or build 2.		
Age Group – difference between today's date and the PlayerDOB correctly		
calculated (1)		
Age Group – difference is an integer year (1)		
Age Group – fully correct (achieved both of the above) (1)		
Number of Players – a count on any suitable field (1)		
Number of Yellow Cards - Sum of NumberYellowCards (1)		
Highest Number of Goals – Max of PlayerPositionGoals		
Ordering of columns is appropriate (1)		
No truncation (datasheet view - field names and data) (1)		
These fields only should be displayed (1)		
Age Group		
Number of Players		
Number of Yellow Cards		
Highest Number of Goals		
Addition		
This point can only be awarded once throughout the entire activity.		
At least one generated field named sensibly (in this query or the report)		
(1)		

Report

(c) Create a report that shows the statistics for each player who has played in more than one position.

Display a suitable report title.

For each player display:

- the surname
- the initial
- the date of birth

Calculate and display:

- the number of positions they have played in
- the best rating, they have achieved
- the total number of yellow cards they have received

The report must fit on one page.

Trait 1	Surname (1)	
	Initial (1)	
	PlayerDOB (1)	
	Field that could be used in calculation for the number of positions per	
	position(1) (Field name or asterisk on report or could be part of a	
	<mark>query)</mark>	
	PositionRating used in the calculation for best rating (1)	
	PlayerPositionYellowCards used in the calculation for number of yellow cards (1)	
Trait 2	If there is only one big table used for query B and/or report, then cannot get past top of band 2	
	Number of positions calculated (COUNT) (1)	
	Best rating – MIN of position rating (1)	
	Number of yellow cards – SUM of yellow cards (1)	
	Number of Positions >1 or equivalent	
Trait 3	From any view	
	Title is appropriate (1)	
	Labels good (1)	
	PDF	
	No truncation (1)	
	Report is fit for purpose (1)	
	Report fits on one page (1)	
	Additional	
	This point must only be assigned once. If it has already been awarded in	
	Query A or Query B, then do not award again here.	
	At least one generated field named/labelled sensibly (1)	

Activity 4 – Testing (20 minutes)

How examiners must approach marking this activity

Tests to be carried out

- 1. A record for a player will not save without the player's date of birth being present
- 2. A record for a player will not save without the player's initial in the correct format
- 3. A record for a player will not save if the player is assigned an invalid mentor
- 4. A record for player statistics will not save if the player rating is below the accepted range
- 5. A record for player statistics will not save if the player rating is above the accepted range
- 6. A record for player statistics will not save without a valid position.

The descriptions given here are **FOR THE TOP OF THE BAND**.

Place each test in the **BEST FIT** for the band.

For example, if the candidate does not meet all the descriptors you can still place in that band providing they meet most of what is there (i.e., sounds like a better fit in that band than the band below it). Overall, it is possible to get the full 6 marks even with some weaknesses.

Band 1	 The test will not be from the tests given or it is from the list but inappropriate
	 There will be no test data, or it will not relate to the test being carried out
	Expected results may be inappropriate
	 Errors may be present that have not been identified
	 Do not take type of test into account – we know what they are testing
Band 2	The test will be from the tests given, but it may not be entirely appropriate
bana 2	
	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
	or if the test data given is a copy of the test from the paper, then look for
	test data in the actual results
	 Expected results will be sensible but may not be detailed e.g. 'error message'
	rather than 'error message saying surname has to be present'
	 Actual results will be present and appropriate though data used may not
	match test data (or there is no test data for it to match)
	 Errors may/may not have been found or may not be understood
	 Do not take type of test into account – we know what they are testing
Band 3	The test will be from the tests given and it will be appropriate
	 Test data will be specific for all fields in the table
	Expected results will be specific
	 Actual results will show all the test data used and any relevant messages.
	Data used will match test data
	 Do not penalise if there are no errors and the testing is accurate
	Errors that are present should be noticed and understood On the transfer of the transfer
	 Do not take type of test into account – we know what they are testing

Overall Band and Marks

Place in the BEST FIT for the band and the mark.

Activity 5 – Evaluation (20 minutes)

How examiners approach marking this activity

- Read the evaluation and determine best fit for the band based on understanding of technical concepts and technical vocabulary
- Input the mark in that band that you think it should have
- What should be evaluated:
 - o how well your database structure has minimised data duplication
 - how well your database structure meets these requirements:
 - players are assigned a position, for example, Centre Forward
 - players may be assigned more than one position during their time at the club
 - players are assigned a mentor. They stay under the care of that mentor for their entire time at the club
 - statistics are recorded about the player for each position they play in.
 - For example, they are given a player rating. This rating must be at least one and no higher than five. One is the highest rating a player can achieve.

Part A evaluation should focus purely on showcasing the candidate's knowledge and understanding of normalisation and database structure in relation to their solution. There is no need to focus on the user as that is the focus of the Part B evaluation.

Band 1	Will be very superficial with major omissions but with reference to the scenario somewhere
Band 2	Will relate aspects sensibly to their own solution though may not fully explain them.
Band 3	Indicative content May not cover these exactly. This is a guide. However, should not be discussing anything other than the tables. Ignore query, report and testing comments. Will discuss data duplication in terms of: • repeated player data • repeated mentor data • repeated position data • removing repeated data into tables whilst maintaining the links It needs to be clear that they are talking about their solution and not just
	trying to slip in technical vocabulary. Need to see clear understanding.
	Meeting requirements
	 Should talk about their choice of validation for the position rating Should talk about using table lookup validate foreign keys

Activity 6 – Interface and functionality (70 mins)

How examiners must approach marking this activity

Trait 1 This is all about how the forms look, how easy they would be to use and how relevant they are to the scenario and tasks.

Add referee form

- Sensible title
- Relevant, consistent, easy to read labels (e.g., spaces)
- Field widths appropriate for data they will hold
- Data input aids e.g.:
 - o instructions on how to use,
 - o asterisk(s) where data entry is required
 - o combo box to select the level number
 - RefereeID disabled
- Save button
- · Layout good

Fixture results form

- Sensible title
- Data input aids e.g.:
 - o instructions on how to use,
 - o asterisk(s) where data entry is required
 - o combo box to select the team
 - o all fields that should be generated disabled
- Relevant, consistent, easy to read labels (e.g., spaces)
- Field widths appropriate for data they will hold
- Layout good
- These generated fields should be on the form (ignore content of fields)
 - Result
 - Total goals for
 - Total goals against

Band	Comments
1	Do not reflect their purpose
	Are mostly/are default
	Are not user friendly:
	 Default titles, labels and field widths
	 No data input aids
	 No disabled fields
	 House style does not exist
	o Layout poor
2	Better matched to purpose
	Not all default based on wizard
	Are more user friendly (will include some of these):
	o titles relevant to purpose
	o data input aids present e.g., asterisks, instructions though
	may not use combo boxes for Referee ID
	o disabled fields

	o field widths not left at default though may not be entirely
	sensible
	 some labels amended from default where appropriate
	Layout good in places
3	Add Referee form fully matches purpose
	Mostly user friendly (do not need all of these but a very good
	attempt):
	o relevant titles
	o some data input aids e.g. asterisks, instructions and combo
	boxes field widths sensible
	 some information shown
	 some of the fields for calculations shown
	o some disabled fields
	o layout mostly good
4	Are very user friendly:
	o relevant titles
	o data input aids present where suitable including combo boxes
	on both forms
	o all information generated
	o all of the fields for calculations shown
	o all field widths sensible
	o all fields that should be automatically generated disabled
	o consistent house style for both forms
	o layout very good

Trait 2 Add referee form

• ID would be generated (default of AutoNumber is fine for this)

Fixture results form

Criteria

Combo box only shows teams for fixtures with no results

Calculations

- Result (Win, Loss, Draw)
- Total goals for
- Total goals against

For RefereeID to be automatically generated and mark point awarded look for:

- Add referee form bound and (New) in RefereeID field
- Add referee form bound, missing RefereeID field but SaveRecord in code
- Add referee form unbound needs an appropriate append query in design view, query and SaveRecord in code

Band	Comments
1T	RefereeID would be automatically generated
2T	RefereeID automatically generated
	Fixture results from – may have some attempted but may not
	work
3T	RefereeID automatically generated
	Fixture results form - some of the criteria and calculations work
	as expected
4T	RefereeID automatically generated
	Fixture results form All of the criteria and calculations work as
	expected

Trait 3 This trait is about validation and automation.

Add referee form

- Opens at a new record
- Validation to ensure the surname is present, the email address uses a valid format, the referee's level number can be selected (presence check for date must be in macro or code)
- Saving includes:
 - o appending valid data to the referee table
 - o displaying a save message
 - displaying suitable error message(s)
 - o clearing the form ready for next data entry

Fixtures results form

- The user should be able to select the team name from a drop down box that displays only the fixtures that do not yet have any results
- The result of the fixture should be generated and displayed as win, loss or draw for Martlepool College
 - The overall number of goals for Martlepool College should be displayed
 - including the results of the current fixture.
 - The overall number of goals against Martlepool College should be displayed
 - including the results of the current fixture.
 - Generated date refreshes when another team is selected and data input

	Band	Comments
	1	Add referee form
		Will be a form that may not reflect its purpose
		 May not open at a new record RefereedID automatically generated Save button present but no indication of how the save will be carried out Will be mostly default
	2	Will have had a good attempt at the referee form or weaker attempts at both forms
	3	Will have had a good attempt at the referee form and a good attempt at the fixture results form
	4	Very little, if anything will not have been evidenced and works.
Trait 4	This trait	is about functionality automatically awarded.

Activity 7 – Testing (20 minutes)

How examiners approach marking this activity

Tests to be carried out

- 1. The referee's name must be present
- 2. The referee's email must use a valid format
- 3. The level of the referee cannot be below the valid range
- 4. A record will save in the referee table if the referee's details are present and valid
- 5. The result of the fixture will be generated correctly as win, loss or draw
- 6. The overall number of goals for Martlepool College should be displayed including the current fixture
- 7. The overall number of goals against Martlepool College should be displayed including the current fixture

The descriptions given here are **FOR THE TOP OF THE BAND**.

Place each test in the **BEST FIT** for the band.

For example, if the candidate does not meet all the descriptors you can still place in that band providing, they meet most of what is there (i.e., sounds like a better fit in that band than the band below it). Overall, it is possible to get the full 6 marks even with some weaknesses.

Band 1	• The test will not be from the tests given or it is from the list but inappropriate
	 There will be no test data, or it will not relate to the test being carried out
	 Expected results may be inappropriate
	 Errors may be present that have not been identified
	 Do not take type of test into account – we know what they are testing
Band 2	The test will be from the tests given, but it may not be entirely appropriate
	• There will be test data, but it may be incomplete or general e.g. I will use a
	wrong email address
	• Expected results will be sensible but may not be detailed e.g., 'error message'
	rather than what the error message will say
	Actual results will be present, and appropriate
	 Errors may/may not have been found
	 Do not take type of test into account – we know what they are testing
Band 3	 The test will be from the tests given and it will be appropriate
	Test data will be specific for all fields
	Expected results will be specific
	 Actual results will show all the test data used and any relevant messages
	 Do not penalise if there are no errors and the testing is accurate
	Errors that are present should be noticed
	 Do not take type of test into account – we know what they are testing

Overall Band and Marks

Place in the BEST FIT for the band and the mark.

Activity 8 – 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
- Input the mark that best fits the evidence

What should be evaluated:

Referee form

- The referee's name must be present
- The referee's email address must use a valid format
- The level of the referee cannot be below the valid range
- The level of the referee cannot be above the valid range
- A record will save in the referee table if the referee's details are present and valid

Fixture results form

- The user should be able to select the team name from a drop down box that displays only the fixtures that do not yet have any results
- The result of the fixture will be generated correctly as win, loss or draw
- The overall number of goals for Martlepool College should be displayed including the current fixture
- The overall number of goals against Martlepool College should be displayed including the current fixture.

Part B evaluation should focus on the quality, performance, and usability of the interface through the eyes of the **user**. Part A was about structure this is about how well the database meets the requirements and what this means for the **user**.

Band 1	Will be very superficial with major omissions
Band 2	Will discuss the form(s) they have built – some aspects sensibly though may
	not fully explain them or relate them well to their own solution.
Band 3	Will discuss both forms. Will relate to the scenario (they do not need to
	explicitly mention the scenario, but you should see what they are talking about
	relates to the scenario). Will be able to see comments relating their solution to
	the end user and what it will mean for them.