Pearson BTEC

Marking Guidance

January 2022

Pearson BTEC Nationals

In Information Technology (31761H)

Unit 2 Creating Systems to Manage Information

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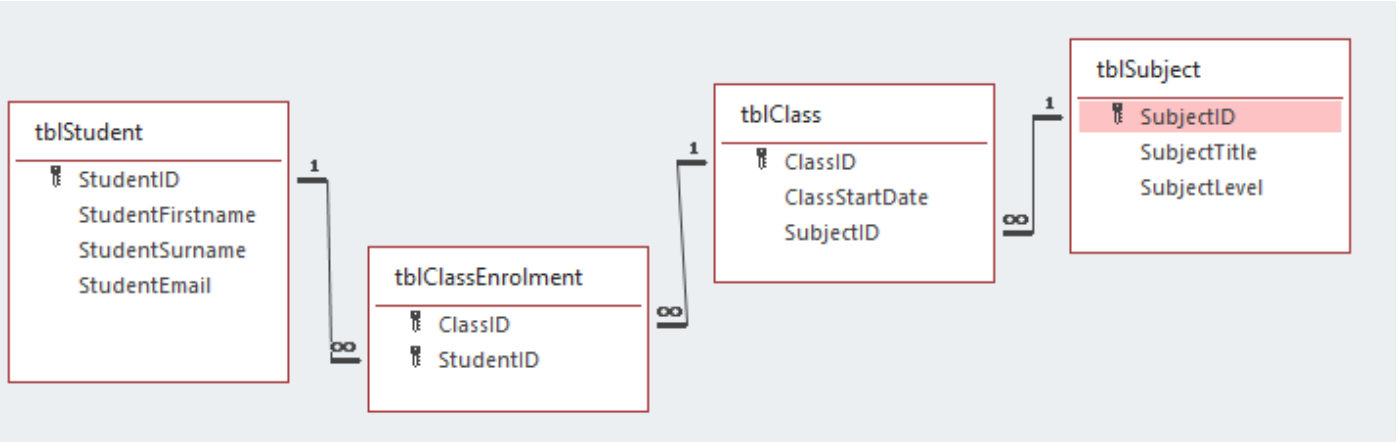
Activity 1 – Database Relationship Screenprint (45 mins)

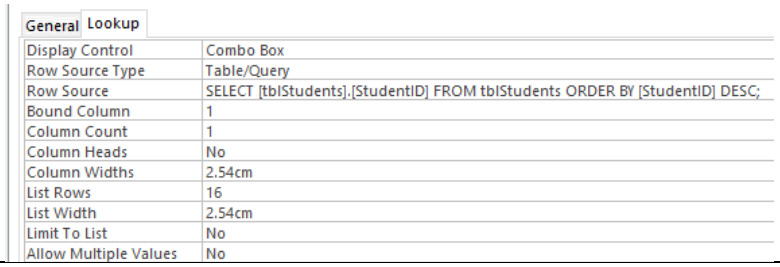
How examiners must approach marking this activity



Trait 1	**General** • Candidates should be using ***all and only*** attributes given in data extract • Look at each field. Count an error with a field **only once**. For example, SubjectID should be in tblSubject and tblClass. If it is not in both 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 **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)

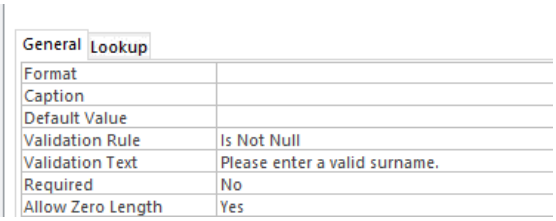
How examiners must approach marking this activity

Trait 1	Look for naming conventions and whether fields are sensible • tbl for table • Fields should be consistent either have spaces or do 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 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. • SubjectLevel: Number • ClassStartDate: Date/Time • 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** • StudentEmail is made up of 3 letters (uppercase first letter)_2 letters (uppercase first letter)@washer.ac.uk e.g.(Gil_Me@washerpool.ac.uk) **Activity/testing requirements** • a record will not save without the student's surname being present • a record will not save if the student's email is not in the correct format • a record will not save if the subject level is below the accepted range (1-3) • a record will not save if the subject level is above the accepted range (1-3) • a record will not save if the subject being taught in a class is invalid • a record will not save if the student being enrolled into a class is invalid **Watch out for screenprints that do not show the actual field the validation is applied to** **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**. tblClassEnrolment and field StudentID 

General	Lookup
Display Control	Combo Box
Row Source Type	Table/Query
Row Source	SELECT [tblStudents].[StudentID] FROM tblStudents ORDER BY [StudentID] DESC;
Bound Column	1
Column Count	1
Column Heads	No
Column Widths	2.54cm
List Rows	16
List Width	2.54cm
Limit To List	No
Allow Multiple Values	No

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**

StudentSurname



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

Presence	**Required check**
	• StudentSurname - validation rule and suitable validation text
	Correct check
	• StudentSurname – validation rule without suitable validation text or Required set to Yes
	Attempted
	• Presence check on any field other than primary keys or StudentSurname 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 lookup or Range	**Required check**
	• SubjectLevel minimum of 1 and maximum of 3 • Combo box (does not need to have limit to list set to Yes) • Validation rule e.g., between 1 and 3, with validation text
	Correct check

	• SubjectLevel
	  ○ Minimum of 2 and maximum of 3
	  ○ Validation rule with no validation text
	  ○ 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 the items • Any other value lookup/range that works
Table lookup Must be from design view	**Required check**
	• A lookup from any of their foreign keys to their primary keys • Limit to list set to Yes • Row source may be truncated but you should still see the name of the table in the select statement e.g. [tblStudent]

		• Must be design view
		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. [tblStudent] • Must be design view
		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 StudentEmail • >L<LL"_">L<L"@washer.ac.uk";0; • May or may not have ;0; at the end
		Correct check
		• StudentEmail with this beginning part of the input mask correct Gil_Me
		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 an alphabetically sorted list of student names who study GCSE Maths or BTEC Information Technology. The names must be sorted by surname and then firstname. It must show the full name of each student and the subject title only.	
Trait 1 Any view	SubjectTitle(1) StudentSurname (1) StudentFirstname (1)
Trait 2 Design view	If there is only one big table used for query B and/or report, then cannot get past top of band 2 StudentSurname or StudentFirstname has ascending/descending sort (1) StudentFirstname sorted after StudentSurname (1) SubjectTitle criterion includes GCSE Maths, BTEC Information Technology (or SubjectID 1, 4)(1) SubjectTitle/SubjectID criterion uses OR (1)

Trait 3	Ordering of columns is appropriate (1) No truncation (datasheet view field names and data) (1) These fields **only** are displayed (1) • SubjectTitle • StudentSurname • StudentForename

Query B	
(b) Create a query that will calculate: • the number of students enrolled into each class. Display: • the subject title • the number of students enrolled into each class • a field with the automatically generated field content of "Still Spaces" if there are spaces left in a class	
Trait 1	SubjectTitle (1) (**from any view**) **Design view only** Field that could be used in the calculation for number of students enrolled (1) Relevant field used in the if statement/calculation for spaces(1)
Trait 2	If there is only one big table used for query B and/or report cannot get past top of band 2. Number of students calculated (1) Spaces • If statement used (1) • Check to see if there are still spaces (1) • Message to say there are still spaces (1) • If statement fully correct (1)
Trait 3	Ordering of columns is appropriate (1) No truncation (datasheet view - field names and data) (1) These fields **only** should be displayed (1) • SubjectTitle • Number of students enrolled into each class • Spaces (or their equivalent) **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)

<table>
<tr><th colspan="2">Report</th></tr>
<tr><td colspan="2">(c)Report – Create a report that shows a list of classes.

For each class, calculate the total number of students enrolled:
Display:
• a suitable report title
• the class start date
• the subject title
• the names of the students enrolled
• the total number of students enrolled
• the overall number of enrolments in all classes.</td></tr>
<tr><td>Trait 1</td><td>ClassStartDate (1)
SubjectTitle (1)
StudentFirstName (1)
StudentSurname (1)
Field that could be used in calculation for the total number of students enrolled (1)
Field that could be used in the overall number of enrolments in all classes (1)
Two clear calculations for the two different purposes</td></tr>
<tr><td>Trait 2</td><td>If there is only one big table used for query B and/or report, then cannot get past top of band 2
• Total number of students enrolled per class: count(field) or equivalent (1)
• Total number of enrolments in all classes: count(field) or equivalent (1)
• Total number of students enrolled per class in relevant header or footer and total number of enrolments in all classes in the report footer (1)</td></tr>
<tr><td>Trait 3</td><td>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 B, then do not award again here.
• At least one generated field named/labelled sensibly (1)</td></tr>
</table>

Activity 4 – Testing (20 minutes)

How examiners must approach marking this activity

Tests to be carried out

1. a record will not save without the student's surname being present
2. a record will not save if the student's email is not in the correct format
3. a record will not save if the subject level is below the accepted range
4. a record will not save if the subject level is above the accepted range
5. a record will not save if the subject being taught in a class is invalid
6. a record will not save if the student being enrolled into a class is invalid.

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., 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 picked up on and understood • 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:
    - how well your database structure has minimised data duplication
    - how well your database structure meets these requirements:
        - the college offers a range of subjects, from level 1 to level 3
        - students are enrolled into classes
        - a class is for a subject and a subject may be taught in more than one class
        - each student has an email address that is made up of:
            - 3 letters (uppercase first letter, followed by lowercase letters)
            - An underscore _
            - 2 letters (uppercase first letter, followed by lowercase letter)
            - @washer.co.uk e.g., Gil_Me:washer.co.uk

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 student data • repeated subject data • repeated class 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 also talk about their choice of validation and why it was the best • Should talk about their choice of validation for SubjectLevel and email • 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 subject 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.:
  - instructions on how to use,
  - asterisk(s) where data entry is required
  - combo box to select faculty
  - SubjectID disabled
- Save button
- Layout good

Add test results form

- Sensible title
- Data input aids e.g.:
  - instructions on how to use,
  - asterisk(s) where data entry is required
  - combo box to select subject
  - 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)
  - Test week
  - Maximum mark for the subject
  - The highest mark as a %
  - The lowest mark as a %

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
	  ○ Layout poor

2	• Better matched to purpose
	• Not all default based on wizard
	• Are more user friendly (will include **some** of these):
	  ○ titles relevant to purpose
	  ○ data input aids present e.g., asterisks, instructions though may not use combo boxes for subject
	  ○ disabled fields

		○ 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 subject form fully matches purpose • Mostly user friendly (**do not need all** of these but a very good attempt): ○ relevant titles ○ some data input aids e.g., asterisks, instructions and combo boxes field widths sensible ○ some information shown ○ some of the fields for calculations shown ○ some disabled fields ○ layout mostly good
	4	• Are very user friendly: ○ relevant titles ○ data input aids present where suitable including combo boxes on both forms ○ all information generated ○ all the fields for calculations shown ○ all field widths sensible ○ all fields that should be automatically generated disabled ○ consistent house style for both forms ○ layout very good

Trait 2

Add subject form

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

Add test results form

Criteria

- Most recent week found
- Only subjects that have a test that week shown in the combo box
- Maximum mark for the test found

Calculations

- Highest mark as a % generated
- Lowest mark as a % generated

Band	Comments
1T	• SubjectID would be automatically generated
2T	• SubjectID automatically generated • Add test results form – all attempted but may not work
3T	• SubjectID automatically generated Test results form • Some of the criteria and calculations work as expected
4T	• SubjectID automatically generated Test results form • All the criteria and calculations work as expected

Trait 3

This trait is about validation and automation.

Add subject form

- Opens at a new record
- Validation to ensure the subject title is present and subject level is within the range
- Saving includes:
  - appending valid data to the subject table
  - displaying a save message
  - displaying a suitable error message if the subject title is not present or the subject level is out of range

Test results form

- Most recent test week displayed
- When a subject is selected the maximum mark for the subject is displayed
- When the data has been input the
  - Highest mark as a % displays
  - Lowest mark as a % displays
- Maximum mark refreshes when another subject is chosen
- Highest mark % and lowest mark % refreshes as required

Band	Comments
1	**Subject form** Will be a form that may not reflect its purpose • May not open at a new record • SubjectID 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 subject form or weaker attempts at both forms
3	Will have had a good attempt at the subject form and a good attempt at the test 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 subject form is ready for data entry when the form opens
2. an invalid faculty cannot be selected for a subject
3. a record will save in the subject table if all the required data is present and valid
4. when the test result form opens the date of the latest test week must display automatically in a field
5. once the user has selected a subject the form must display the maximum mark for that subject's test in a field
6. once the user inputs the highest and lowest marks achieved these details should then be calculated and displayed in fields
    - the highest mark as a percentage
    - the lowest mark as a percentage.

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 faculty • 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 picked up on • 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:

Subject form

- the subject form is ready for data entry when the form opens
    - an invalid faculty cannot be selected for a subject
    - a record will save in the subject table if all the required data is present and valid

Test results form

- when the test result form opens the date of the latest test week must display
- once the user has selected a subject the form must display the maximum mark for that subject's test in a field
- once the user inputs the number of students and the highest and lowest marks achieved these details should then be calculated and displayed in fields:
    - the highest mark as a percentage
    - the lowest mark as a percentage

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.