

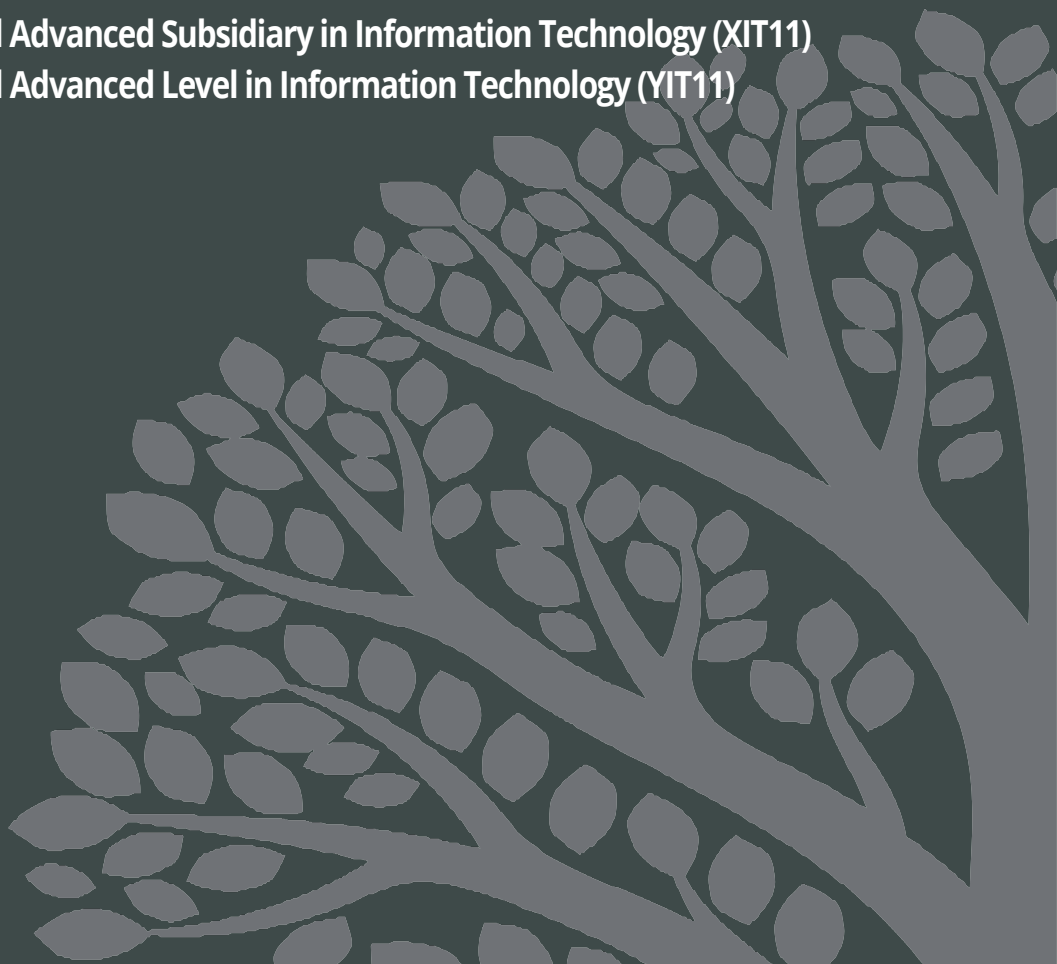
**INTERNATIONAL ADVANCED LEVEL**

# **INFORMATION TECHNOLOGY**

## **Exemplars with examiner commentaries Unit 4**

**Pre-first assessment materials**

Pearson Edexcel International Advanced Subsidiary in Information Technology (XIT11)  
Pearson Edexcel International Advanced Level in Information Technology (YIT11)



# Introduction

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## 1.1 About this booklet

This booklet has been produced to support teachers delivering the International Advanced Level Information Technology specification. The Unit 4 exemplar materials will enable teachers to support their students in the knowledge and skills required to successfully complete this course. The booklet looks at questions from the Sample Assessment Materials, showing example responses to questions and how examiners have applied the mark schemes to demonstrate how student responses would be marked.

## 1.2 How to use this booklet

The Sample Assessment Materials have been used for exemplar responses, and each question contains:

- Question number and question in full
- Exemplar responses for each question
- Exemplification with examiner commentary of the marker grading decision based on the Sample Assessment Material mark scheme

The exemplification highlights the achievement of the Assessment Objectives alongside exemplifications of the new format for long answer assessment through levels-based assessment bands, which centres are required to review carefully.

Centres should utilise the commentary on the exemplification of marker decisions to support their internal assessment of students and embed exam skills into the delivery of the specification.

It should be noted that the responses here have not been completed in exam conditions. Please note that the responses are part of a small sample only and have not gone through the formal standardisation process.

Command words shown in **red** are further explained in Appendix 6: Taxonomy, in the specification.

## 1.3 Further support

A range of materials is available to download from the Information Technology page of the Pearson website to support you in planning and delivering the new specifications.

Centres may find it beneficial to review this document in conjunction with the other assessment and support materials available here on [the Pearson Qualifications website](#).

## Context

Haroon works for a training company. The company provides training for small businesses around the country. The staff divide their time between working in the company's main office and visiting clients to deliver training.

When working in the office, the staff use desktop computers. The company has equipment, such as laptops and projectors, which staff can book out when needed. They can borrow equipment for between one and 14 whole days.

Haroon keeps a list of equipment in a single table within the database 'inventory'.

Haroon uses the 'loans' spreadsheet to keep a record of who has borrowed equipment.

Haroon is finding it increasingly difficult to keep track of equipment and wants a solution that will allow him to manage the equipment effectively and reduce the number of errors in record-keeping.

### Question 1a uses this context.

The Equipment table needs to be improved

**1a (i)** There is an error in the use of the datatypes in this table.  
**Identify** and correct the error. (1)

**1a (ii)** **Set up** a data entry list on the field Category. You can assume that the database contains examples of all possible categories and data entry should be restricted to these only.  
Screenprint the table in **Design** view, making sure the new data type and contents of the dropdown list can clearly be seen. (3)

### Sample response 1 with commentary

(ii) **Three marks**

Can see the combo box belongs to the category field as this is the field selected and that the control is a combo box (1)

The Row Source shows the correct four entries (1)

Limit to list has been set to yes to limit data entry to Row Source values only (1)

Field Name	Data Type
AssetNumber	AutoNumber
Category	Short Text
AssetType	Short Text
LastSafetyTest	Date/Time
Faulty	Yes/No
FaultNotes	Short Text

Property	Value
Display Control	Combo Box
Row Source Type	Value List
Row Source	"Display"; "Computer"; "Sound"; "Storage"
Bound Column	1
Column Count	1
Column Heads	No
Column Widths	2.54cm
List Rows	16
List Width	Auto
Limit To List	Yes

(i) **One mark** was awarded for correctly identifying the 'Faulty' field should have a 'Yes/No' data type and ensuring the evidence can be clearly seen in the screenprint (1)

**Total for (a) 4 marks**

## Sample response 2 with commentary

(ii) **Three** marks

Can see the list box belongs to the category field as this is the field selected and that the control is a list box (1)

The Row Source shows the correct four entries (1).

Allow Value List Edits has been set to no to limit data entry to Row Source values only (1)

(i) **One** mark was awarded for correctly identifying the 'Faulty' field should have a 'Yes/No' data type and ensuring the evidence can be clearly seen in the screenprint (1)

**Total for (a) 4 marks**

## Sample response 3 with commentary

(ii) **Two** marks

Can just about see the list box belongs to the category field as this is the field selected and that the control is a list box (1)

The Row Source shows the correct four entries (1)

Allow Value List Edits has not been shown so cannot prove that data entry is limited to items in the list only (0)

(i) **One** mark was awarded for correctly identifying the 'Faulty' field should have a 'Yes/No' data type and ensuring the evidence can be clearly seen in the screenprint (1)

**Total for (a) 3 marks**

**Question 1b uses this context.**

Haroon needs to enter data about new equipment.

- 1b** **Create** a data entry form for the **Equipment** table that will allow Haroon to add new records to the database.
- The form must:
- allow data entry of relevant equipment details
  - allow the user to select a category for each new entry
  - set 'last Safety Test' date to today's date by default
  - provide a button to submit/save the entered data to the table.
- Screenprint your form in **Form** view
- Produce screen prints in **DESIGN** view to show any macros, code, queries and/or properties you have used. Ensure that all fields and details can be clearly seen.
- (6)

**Sample response 1 with commentary**

Form view screenprint – this form is bound to the equipment table

The form has a sensible title that clearly indicates what the form will be used for. The labels are suitable. The first letter is capitalised for each word, there is a space between each word and they are aligned sensibly. Data entry boxes are suitably sized for the data they contain (1)

The correct fields from the Equipment table are present and the Asset Number which is a generated field has been disabled (1)

List box used for Category (1)

Last safety test defaulted to today's date (1)

Macros, code, queries and/or properties screenprints

Last Safety Test	LastSafetyTest	Text Format	Plain Text
		Input Mask	
		Default Value	=Date()
		Validation Rule	

```
Private Sub cmdSave_Click()
    'check to make sure category and asset type are present
    If Category.ListIndex = -1 Or IsNull(AssetType) Then
        MsgBox "You must select a category and enter the asset type", vbOKOnly
    Else
        'save the record
        DoCmd.Save
        'display message
        MsgBox "The equipment has been saved", vbOKOnly
        'clear the form
        DoCmd.GoToRecord , , acNewRec
    End If
End Sub
```

Code is used for the save process in this response. DoCmd.Save has been used rather than an append query. This is fine as the fields are bound to the equipment table (1). Button is present on screenprint of form in form view and code is used to make sure relevant data is present. A valid record would be saved (1).

Total for (b) 6 marks

Sample response 2 with commentary

Form view screenprint – this form is bound to the equipment table

The form has a sensible title that clearly indicates what the form will be used for. The labels are suitable. The first letter is capitalised for each word, there is a space between each word and they are aligned sensibly. Data entry boxes are suitably sized for the data they contain (1)

The correct fields from the Equipment table are present. The Asset Number which, is a generated field has been disabled (1)

List box used for Category (1)

Last safety test defaulted to today's date (1)

Macros, code, queries and/or properties screenprints

```

❏ If [category].[ListIndex]=-1 Or IsNull([assettype]) Then
    MsgBox
        Message You must select a category and asset type
        Beep Yes
        Type None
        Title Error
❏ Else
    RunMenuCommand
        Command SaveRecord
    MsgBox
        Message The equipment has been saved
        Beep Yes
        Type None
        Title Save
    GoToRecord
        Object Type Form
        Object Name frmEquipment_MacroVersion
        Record New
        Offset
End If

```

A macro has been used for the save process in this response.  
RunMenuCommand, Save Record has been used in place of an append query (1)

A button is present on screenprint of form in form view and code is used to make sure relevant data is present. A valid record would be saved (1)

**Total for (b) 6 marks**

### Sample response 3 with commentary

Form view screenprint – this form is unbound

The form has a sensible title that clearly indicates what the form will be used for. The labels are suitable. The first letter is capitalised for each word, there is a space between each word and they are aligned sensibly. Data entry boxes are suitably sized for the data they contain (1)

#### Add Equipment

You must enter or select data where asterisks appear.

List box used for Category (1)

The correct fields from the Equipment table are present. The Asset Number has not been included, which is fine as it is an AutoNumber data type so would be automatically generated (1)

Macros, code, queries and/or properties screenprints

Suitable append query used. Can clearly see the equipment table and nothing is truncated (1)

Date() appended to LastSafetyTest field in the Equipment table to set it to today's date (1)

Field:	Expr1: [Forms]![frmEquipment_AppendVersion]![Category]	Expr2: [Forms]![frmEquipment_AppendVersion]![AssetType]	Expr3: Date()
Table:			
Total:	Group By	Group By	Group By
Sort:			
Append To:	Category	AssetType	LastSafetyTest
Criteria:			
or:			

Expr4: [Forms]![frmEquipment_AppendVersion]![Faulty]	Expr5: [Forms]![frmEquipment_AppendVersion]![FaultNotes]
Group By	Group By
Faulty	FaultNotes

```

Private Sub cmdSave_Click()
    If Category.ListIndex = -1 Or IsNull(AssetType) Then
        MsgBox "You must select a category and input the asset type", vbOKOnly
    Else
        'run the append query
        DoCmd.OpenQuery "qAppEquipment"
        MsgBox "The equipment has been saved", vbOKOnly
    End If
End Sub
    
```

DoCmd.OpenQuery used to run the append query

Button is present on screenprint of form in form view and code is used to make sure relevant data is present and run the append query. A valid record would be saved (1).

**Total for (b) 6 marks**



## Sample response 4 with commentary

Form view screenprint – this form is unbound

The form does not have a sensible title. The labels are not suitable. The alignment is inconsistent. There should be a space between words. Category should have an uppercase C. Data entry boxes are not suitably sized for the data they contain (0)

List box used for Category. Even though not all values are showing it is clear it is the category and that it is a list (1)

The correct fields from the Equipment table are present. The Asset Number has not been included, which is fine as it is an AutoNumber data type so would be automatically generated (1)

Macros, code, queries and/or properties screenprints

Field:	Expr1: [Forms]![frmEquipment]!	Expr2: [Forms]![frmEquipment]!	Expr3: Date()	Expr4: [Forms]![frmEquipment]!	Expr5: [Forms]![frmEquipment]!
Table:	Group By	Group By	Group By	Group By	Group By
Total:					
Sort:					
Append To:	Category	AssetType	LastSafetyTest	Faulty	FaultNotes
Criteria:					
or:					

Whilst there is an append query present and it does use the Equipment table, some of the columns are truncated meaning it is impossible to tell whether the append query is suitable (0)

Date() appended to LastSafetyTest field in the Equipment table to set it to today's date (1)

```
Private Sub cmdSave_Click()
    If Category.ListIndex = -1 Or IsNull(AssetType) Then
        MsgBox "You must select a category and input the asset type", vbOKOnly
    Else
        'run the append query
        DoCmd.OpenQuery "qAppEquipment"
        MsgBox "The equipment has been saved", vbOKOnly
    End If
End Sub
```

DoCmd.OpenQuery used to run the append query

Button is present on screenprint of form in form view and code is used to make sure relevant data is present and run the append query. The fact that there is a problem with the append query is not penalised again here. It is an append query that can be seen so taken as a valid record would be saved (1).

**Total for (b) 4 marks**

**Question 1c uses this context.**

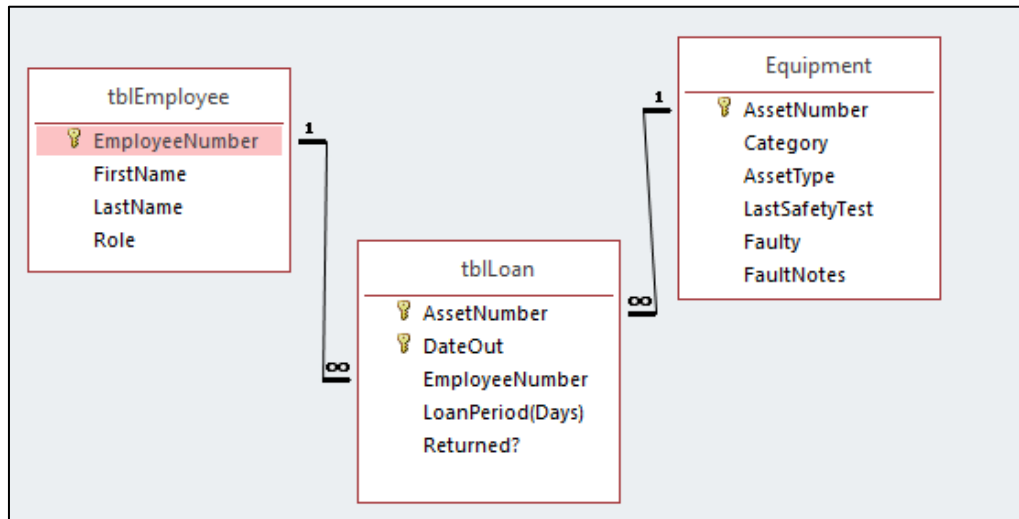
Haroon currently uses the Loans spreadsheet to keep a record of who has borrowed equipment. He wants to extend the inventory database so that it can be used for this purpose.

**1c** **Develop** the inventory database to add this functionality. You must create an efficient data structure that minimises data duplication, uses correct data types and primary keys, and enforces referential integrity.

Produce screen prints that clearly show relationships, table names, field names, data types and primary keys.

(8)

### Sample response 1 with commentary



The two tables created (tblEmployee and tblLoan) use standard naming conventions (tbl). No penalisation for Equipment table not following standard naming conventions as that table was already present. Naming of fields is consistent. Camel case has been used (1). There is an Employee and Loan table present (1). There is a 1:M relationship between Equipment and tblLoan (1) and a 1:M between tblEmployee and tblLoan (1). An appropriate primary key has been used in tblEmployee (EmployeeNumber) (1). Appropriate composite key used in tblLoan (AssetNumber, DateOut) (1).

tblEmployee		
	Field Name	Data
	EmployeeNumber	Short Text
	FirstName	Short Text
	LastName	Short Text
	Role	Short Text

Date/Time has been used for DateOut (1)

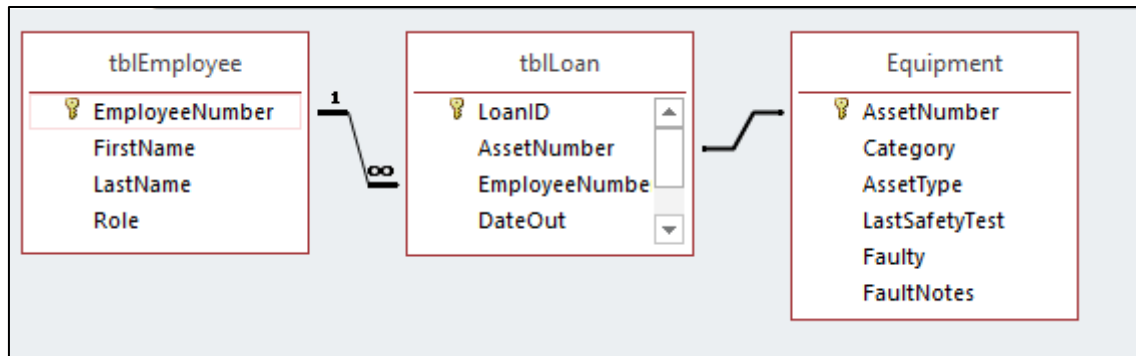
It is expected that number formats will be shown in part c. Integer has been used for LoanPeriod(Days) (1)

tblLoan		
	Field Name	Data Type
	AssetNumber	Number
	DateOut	Date/Time
	EmployeeNumber	Short Text
	LoanPeriod(Days)	Number
	Returned?	Yes/No

LoanPeriod(Days)	Number
Field Size	Integer
Format	Fixed
Decimal Places	0

**Total for (c) 8 marks**

## Sample response 2 with commentary



The two tables created (tblEmployee and tblLoan) use standard naming conventions (tbl). No penalisation for Equipment table not following standard naming conventions as that table was already present. Naming of fields is consistent. Camel case has been used – cannot see all the fields in this screenprint so examiners would check the table screenprints (1). There is an Employee and Loan table present (1). There is a relationship between Equipment and tblLoan, but the relationship type cannot be determined (0). There is a 1:M between tblEmployee and tblLoan (1). An appropriate primary key has been used in tblEmployee (EmployeeNumber) (1). An extra field has been introduced as a key in tblLoan (LoanID) this should not be done. All, and only, the fields given in the spreadsheet should be used (0).

tblEmployee	
Field Name	Data
EmployeeNumber	Short Text
FirstName	Short Text
LastName	Short Text
Role	Short Text

Date/Time has been used for DateOut (1)

tblLoan	
Field Name	Data Type
AssetNumber	Number
DateOut	Date/Time
EmployeeNumber	Short Text
LoanPeriod(Days)	Number
Returned?	Yes/No

It cannot be determined whether LoanPeriod(Days) is an integer (0)

**Total for (c) 5 marks**

**Question 1d uses this context.**

Haroon wants to ensure that the data in the database is valid.

**1d** **Apply** validation to the data in the tables **you** have created.

You can assume, that for each field, the sample data provided in the Loans spreadsheet contains all options.

Produce a screen print in **Design** view of one format check.

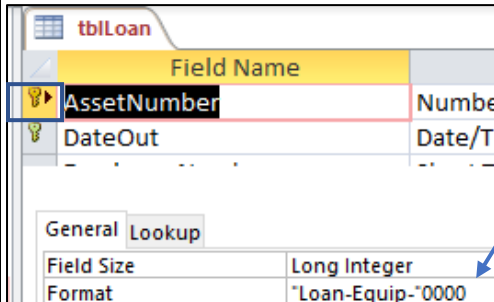
Produce a screen print in **Design** view of one range check.

Produce a screen print in **Design** view of one table lookup.

(3)

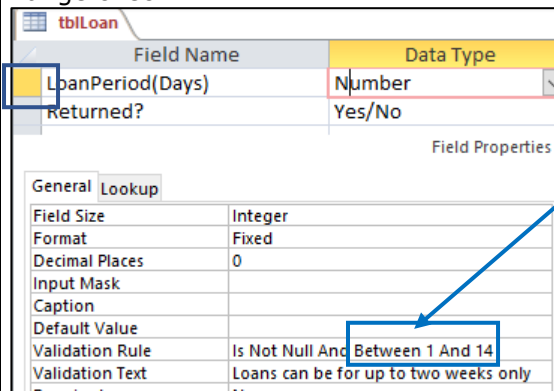
**Sample response 1 with commentary**

**Format check**



Can see the field the format applies to is AssetNumber and that the format has been correctly applied so that it matches the format in the Equipment table (1)

**Range check**



Between 1 and 14 correctly used for a range check (1)

**Table lookup**

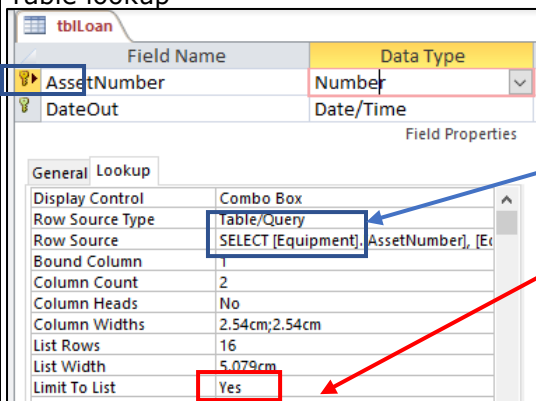


Table lookup should be used on foreign keys only. AssetNumber is part of the composite key and is also a foreign key so using a table lookup here is valid. Can see it looks up to the Equipment table and that limit to list has been set to yes (1)

**Total for (d) 3 marks**

## Sample response 2 with commentary

### Format check

Field Name	Data Type
AssetNumber	Number
DateOut	Date/Time

Format: dd/mm/yyyy

This is not a suitable format check. It is expected that formats will only be applied where appropriate eg emails, postcodes, telephone numbers etc or, as is the case in this paper, where a format has been applied on a linked field in another table. Date formats do not need to be seen and will not attract marks (0)

### Range check

Field Name	Data Type
EmployeeNumber	Short Text
LoanPeriod(Days)	Number

Validation Rule: Between 1 And 14

Can see the field the validation applies to is LoanPeriod(Days). Between 1 and 14 correctly used for a range check (1)

### Table lookup

Field Name	Data Type
Role	Short Text

Row Source Type: Value List  
Row Source: "Training"; "Management"

This is a value lookup not a table lookup. The Row Source Type is a Value List as opposed to a table and the Row Source does not use the contents of a table (0)

**Total for part (d) 1 mark**

**Question 1e uses this context.**

**Import** the data from the Loans spreadsheet into your database.

**1e** Produce screen prints of **your** tables showing at least five records and the full record count. (If the fields are too wide to fit on one-page, truncated data is allowed.)

(2)

### Sample response 1 with commentary.

tblLoan				
AssetNumber	DateOut	EmployeeN	LoanPeriod(Days)	Returned?
Loan-Equip-0001	01/10/2017	IT0004	7	<input checked="" type="checkbox"/>
Loan-Equip-0001	14/11/2017	IT0001	6	<input checked="" type="checkbox"/>
Loan-Equip-0001	08/12/2017	IT0002	14	<input type="checkbox"/>
Loan-Equip-0002	01/10/2017	IT0003	14	<input type="checkbox"/>
Loan-Equip-0003	01/10/2017	IT0005	2	<input checked="" type="checkbox"/>

Record: 3 of 26

Can clearly see it is tblLoan. Five records can be seen. The full record count can be seen. Twenty-six is the correct number of records (1).

tblEmployee				
EmployeeN	FirstName	LastName	Role	
IT0001	Daniel	Raines	Training	
IT0002	Aqib	Razaq	Training	
IT0003	Oliver	Laski	Training	
IT0004	Sohia	Zigmundova	Training	
IT0005	Haroon	Mahmood	Management	

Record: 1 of 6

Can clearly see it is tblEmployee. Five records can be seen. The full record count can be seen. Six is the correct number of records (1)

**Total for part (e) 2 marks**

## Sample response 2 with commentary

tblLoan				
AssetNumber	DateOut	EmployeeN	LoanPeriod(Days)	Returned?
Loan-Equip-0001	01/10/2017	IT0004	7	<input checked="" type="checkbox"/>
Loan-Equip-0001	14/11/2017	IT0001	6	<input checked="" type="checkbox"/>
Loan-Equip-0001	08/12/2017	IT0002	14	<input type="checkbox"/>
Loan-Equip-0002	01/10/2017	IT0003	14	<input type="checkbox"/>
Loan-Equip-0003	01/10/2017	IT0005	2	<input checked="" type="checkbox"/>

Record: 3 of 26 No Filter Search

Can clearly see it is tblLoan. Five records can be seen. The full record count can be seen. Twenty-six is the correct number of records (1)

tblEmployee				
	EmployeeN	FirstName	LastName	Role
<input checked="" type="checkbox"/>	IT0001	Daniel	Raines	Training
<input checked="" type="checkbox"/>	IT0002	Aqib	Razaq	Training
<input checked="" type="checkbox"/>	IT0003	Oliver	Laski	Training
<input checked="" type="checkbox"/>	IT0004	Sohia	Zigmundova	Training
<input checked="" type="checkbox"/>	IT0005	Haroon	Mahmood	Management

Can clearly see it is tblEmployee. Five records can be seen. However, the full record count cannot be seen. Therefore, it cannot whether the correct number of records were imported (0).

**Total for part (e) 1 mark**

**Question 2a uses this context.**

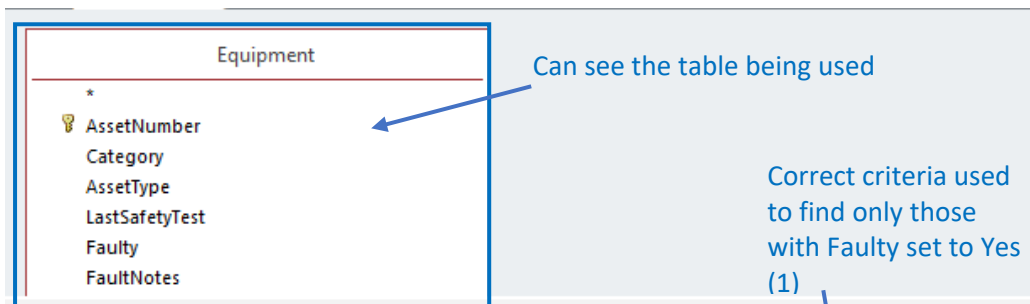
The technicians are going to work on faulty equipment.

**2a** **Create** a query that will list equipment that has been reported as faulty and needs fixing.

Screenprint your query in **Design** view, making sure that all required tables, fields, criteria, parameters and properties can be clearly seen.

(4)

### Sample response 1 with commentary



Field:	AssetNumber	Category	AssetType	FaultNotes	Faulty
Table:	Equipment	Equipment	Equipment	Equipment	Equipment
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				Not Like "**fixed**"	Yes
or:					

Correct table and correct fields only included (1)

Wildcards correctly used in query  
Faulty is not being shown as it is not required (1)  
have not been specified as being fixed (1)

**Total for part (a) 4 marks**

### Sample response 2 with commentary

Cannot clearly see table(s) used as top of query window is missing. However, in this particular query, only one table was required and the table name can be seen in the 'Table' row. Fields included are appropriate (1)

The Faulty field would show, which is not required (0)

Field:	AssetNumber	Category	AssetType	FaultNotes	Faulty
Table:	Equipment	Equipment	Equipment	Equipment	Equipment
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				Not Like "**fix	
or:					

Cannot see the full criteria used for FaultNotes as column is truncated (0)

Criteria has not been included to filter to only those records that are specified as being faulty (0)

**Total for part (a) 1 mark**



**Question 2b(i) uses this context.**

Haroon wants to be able to contact staff who have not returned equipment by the due date. He wants to use a standard message which will use information from the database.

Dear Oliver

According to my records you borrowed a DLP Projector (Loan-Equip-0002) on 01/10/2017. It is overdue by three days. It should have been returned by 15/10/2017.

Please return it at your earliest convenience.

Thank you

Haroon

**2b (i)**

**Create** a query that will extract appropriate data from the database.

Screenprint your query in **Design** view, making sure that all required tables, fields, criteria, parameters and properties can be clearly seen.

(9)

## Sample response 1 with commentary

Correct calculation for DaysOverdue (1)      Correct tables included in the query (1)

Correct tables included in the query (1)

Correct criteria for DateDueBack (1)

Correct expression used to calculate DateDueBack (1)

Correct fields in query (AssetNumber, AssetType, FirstName, DateDueBack, DaysOverdue, Returned (1)

Correct calculation for DaysOverdue (1)

Calculated fields named sensibly (1)

All fields other than Returned is set to display

Calculated fields added for DateDueBack or DaysOverdue (1)

Field:	FirstName	AssetNumber	AssetType	DateOut
Table:	tblEmployee	Equipment	Equipment	tblLoan
Total:	Group By	Group By	Group By	Group By
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				

Correct calculation used to generate DateDueBack (1)

Correct calculation to generate DaysOverdue (1)

Correct criteria for DateDueBack (1)

Correct criteria to find equipment not returned (1)

All fields other than Returned set to display (1)

Correct fields in query (AssetNumber, AssetType, FirstName, DateDueBack, DaysOverdue, Returned (1)

**Total for part (b)(i) 9 marks**

Correct tables included in the query (1)

Field:	FirstName	AssetNumber	AssetType	DateOut
Table:	tblEmployee	Equipment	Equipment	tblLoan
Total:	Group By	Group By	Group By	Group By
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				

Generated files not named sensibly (0)

Calculated fields added for DateDueBack or DaysOverdue (1)

	Expr1: [DateOut]+[LoanPeriod(Days)]	Expr1: Date()-[DateDueBack]	Returned?
	Group By	Expression	tblLoan
			Group By
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Correct calculation used to generate DateDueBack (1)	Correct calculation used to generate DaysOverdue (1)		No
<p>Critiera to find equipment due to be returned in the past has not been included (0).</p> <p>Correct fields in query (AssetNumber, AssetType, FirstName, DateDueBack, DaysOverdue, Returned) (1)</p> <p>Correct critiera to find equipment not returned (1)</p> <p>All fields other than Returned set to display (1)</p>			
<b>Total for part (b)(i) 7 marks</b>			

**Question 2b(ii) uses this context.**

Haroon wants a weekly report that lists all equipment that has not been returned on time.

He will use the same report format every week and wants the date the report was generated to be displayed on the report.

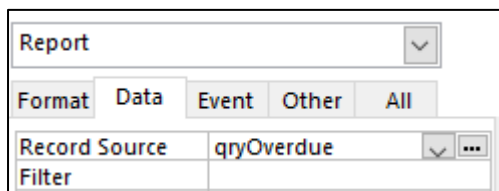
**2b (ii)** **Sort** the data so that it is shown from the most number of days overdue to the least number of days overdue.

Use your query from question 2(b)(i) to extract the data for the report.

Screenprint your report in **Design** and **Print** views. Ensure that all fields and criteria can clearly be seen.

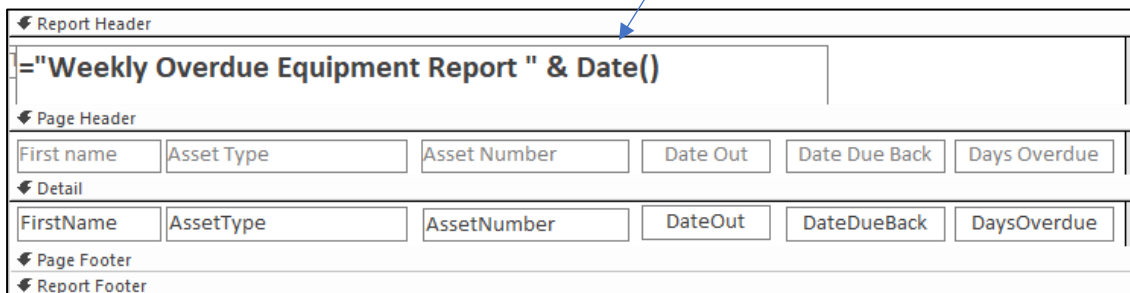
(7)

**Sample response 1 with commentary**



Report is linked to query used in 2b(i) (1)

Calculation used to generate today's date (1)



Appropriate and meaningful title and label names included (1)

Date in sensible location and appropriate format used (1)

Sorted into descending order (1)

Weekly Overdue Equipment Report 15/10/2018					
First name	Asset Type	Asset Number	Date Out	Date Due Back	Days Overdue
Oliver	LCD Projector	Loan-Equip-0002	01/10/2017	15/10/2017	365
Haroon	10" Tablet	Loan-Equip-0011	05/10/2017	15/10/2017	365
Daniel	10" Tablet	Loan-Equip-0010	05/10/2017	19/10/2017	361
Aqib	Headset	Loan-Equip-0015	13/11/2017	16/11/2017	333
Sohia	300 GB USB Hard Drive	Loan-Equip-0017	15/11/2017	20/11/2017	329
Oliver	10" Tablet	Loan-Equip-0011	08/12/2017	12/12/2017	307
Aqib	LCD Projector	Loan-Equip-0001	08/12/2017	22/12/2017	297

Layout is appropriate – good use of white space between columns etc. Alignment is good, text left-aligned, dates and number centred consistently (1)

Data is complete and there is no truncation (1)

**Total for part (b)(ii) 7 marks**

## Sample response 2 with commentary

Report ▼

Format Data Event Other All

Record Source qryOverdue ▼ ...

Filter

Report is linked to query used in 2b(i) (1)

Calculation for today's date is missing (0) also means it is not positioned appropriately (0)

Report Header

rptWeekly

Page Header

DateDueBack	AssetType	First name	Asset Number	Date Out	Days Overdue
-------------	-----------	------------	--------------	----------	--------------

Detail

DateDueBack	AssetType	FirstName	AssetNumber	DateOut	DaysOverdue
-------------	-----------	-----------	-------------	---------	-------------

Report title is not suitable and some of the labels are not appropriate (0)

rptWeekly

DateDueBack	AssetType	First name	Asset Number	Date Ou
15/10/2017	LCD Projector	Oliver	Loan-Equip-0002	01/10/20
15/10/2017	10" Tablet	Haroon	Loan-Equip-0011	05/10/20
19/10/2017	10" Tablet	Daniel	Loan-Equip-0010	05/10/20
16/11/2017	Headset	Aqib	Loan-Equip-0015	13/11/20
20/11/2017	300 GB USB Hard	Sohia	Loan-Equip-0017	15/11/20
12/12/2017	10" Tablet	Oliver	Loan-Equip-0011	08/12/20
22/12/2017	LCD Projector	Aqib	Loan-Equip-0001	08/12/20

Layout is not appropriate - too much white space between rows and between these two columns (0)

Days overdue is missing so cannot determine whether sorted into descending order (0)

Data is incomplete, and truncation is present (0)

**Total for part (b)(ii) 1 mark**

**Question 2c uses this context.**

The equipment table is generating inconsistent information.

Equipment					
AssetNumber	Category	AssetType	LastSafetyTest	Faulty	FaultNotes
Loan-Equip-0003	Display	DLP Projector	18 May 2017	Yes	Bulb to be replaced
Loan-Equip-0004	Display	DLP Projector	18 May 2017	Yes	HDMI socket not working - fixed 20March2017

**2c** **Analyse** the inconsistent information and how the structure of the database allows these inconsistencies.

**Recommend** how the structure of the database could be improved to prevent inconsistencies.

Type your response in the space provided in the evidence template document.

(9)

**Sample response 1**

There is conflicting information in terms of recording faults. Loan-Equip-0004 has a tick in the Faulty field to signify a fault but the Notes field say that it was fixed on the 20 March 2017. It is impossible to determine whether the tick signifies a new fault and the notes for it have not been updated, or whether the user has forgotten to remove the tick from the faulty field.

The conflicting information is allowed because the fault information is not atomic and has not been normalised correctly. The FaultNotes field is not atomic as it is being used for more than one purpose – to say what the fault is and to identify when it was fixed. The information has not been normalised correctly as there should have been identification that one piece of equipment could have many faults. The current structure only allows for one fault per equipment with the user having to delete the information and replace when a new fault is added.

The problem could be prevented by creating a new table (tblFault). This could have the fields

- FaultID – Primary Key – Autonumber
- AssetNumber – Foreign Key
- FaultReportedDate
- FaultResolvedDate
- FaultNotes

The foreign key would ensure there is still a relationship between a piece of equipment and a fault, but it would no longer be a 1:1 relationship and would now correctly use a 1:M relationship meaning a piece of equipment can have many faults without the need to delete the existing fault information to do this. The field Faulty could be replaced with a FaultReportedDate and a FaultResolvedDate. This would allow clear identification of whether a fault has been resolved or not with no conflicts. The FaultNotes column would also now be atomic.

**Commentary 1**

This is a level based question. This means that marks are allocated using the levels descriptors shown in the mark scheme. This response fully meets the level three descriptor. The table has been analysed with clear identification of the conflicting information and how the database allows this. The analysis is sound and developed. The recommended solution is detailed, appropriate and workable.

**Total for part (c) 9 marks**

**Sample response 2**

The conflicting information is that the FaultNotes field shows that Loan-Equip-0004 was fixed but there is a tick that means it is faulty. It cannot be both.

This is because the user has added a fixed date to the FaultNotes when they should have removed the tick and not used the FaultNotes field for that purpose or the tick should have been removed and the FaultNotes column used for an end date. It makes the query to find faulty equipment harder because you must search for a tick in faulty and the faultNotes cannot contain fixed. This still might not get the right records because they might not use the word fixed and just put a date.

It would be better to have three fields for the fault and get rid of the tick box for Faulty. The fields would be ReportedDate, FixedDate and notes. It would then be clear if there is a current fault or not and no inconsistent information.

**Commentary 2**

This is a levels-based question. This means that marks are allocated using the levels descriptors shown in the mark scheme. In terms of bullet point 1, the analysis is sound though the lack of recognition in terms of the relationship prevents the analysis begin sound and developed, which would be required for level 3. In terms of bullet point 2, the solution itself is workable but the relationship problem would be more than a minor issue. This prevents full marks in level 2 being awarded. There is, however, enough evidence for marks in the middle of level 2.

**Total for part (c) 5 marks**

**Question 3 uses this context.**

Haroon needs a chart to show him the number of times each asset type has been loaned to staff.

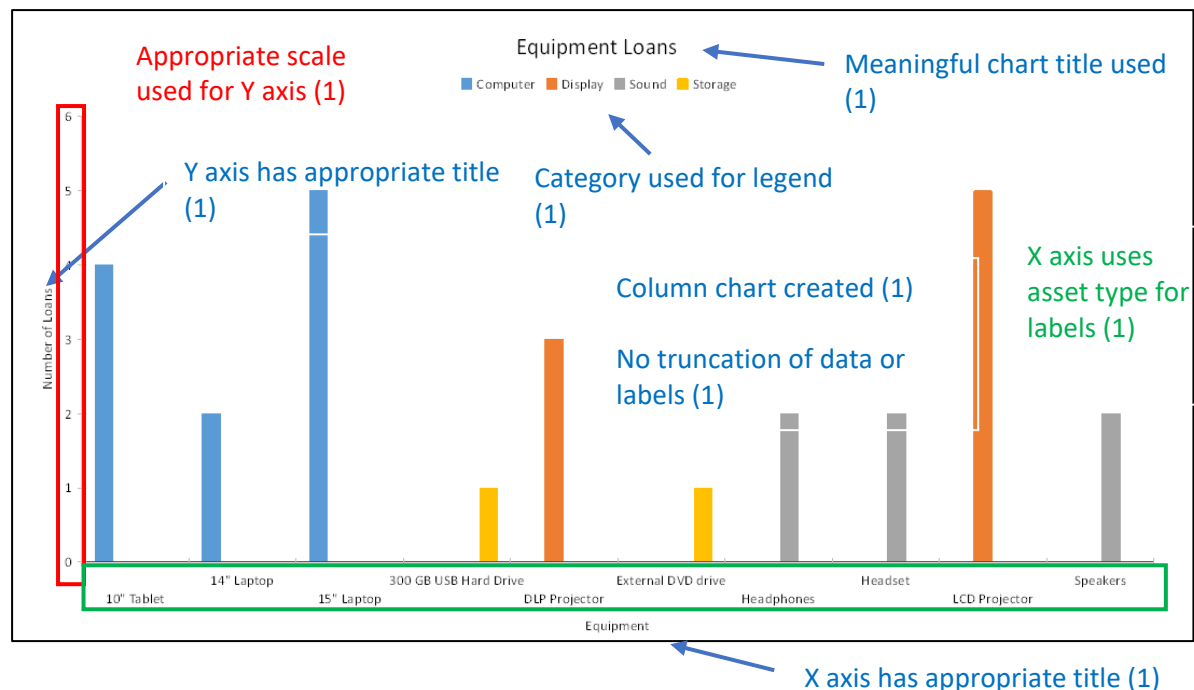
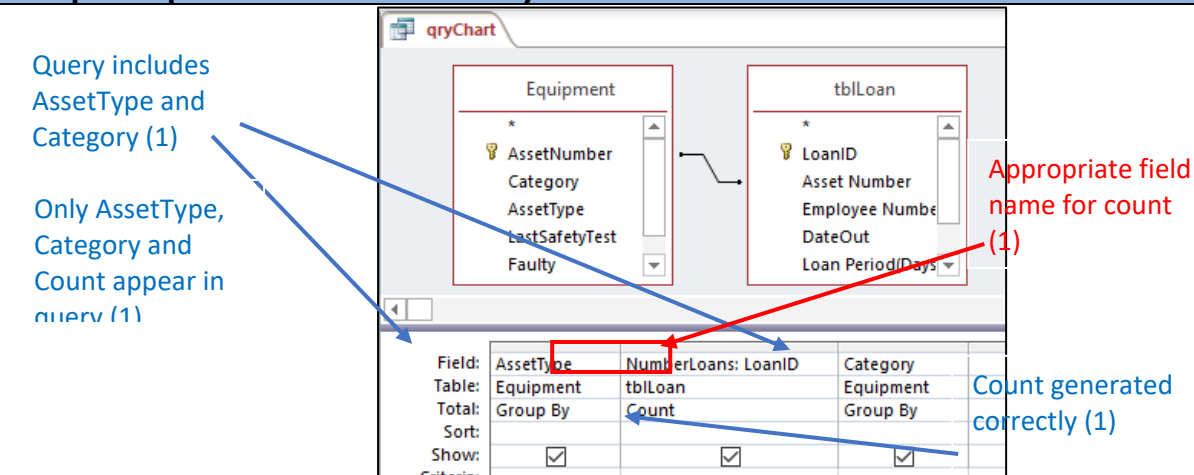
He also wants the information presented in a way that will allow him to clearly see the most popular type of asset category.

He wants this information in a report displayed as a chart.

- 3** **Create** a report that displays this information as a chart.
- Produce a screen print showing your report in **Print** view.
- Screenprint in **Design** view and any macros, queries etc. used to generate the data required for the chart.
- Ensure that all required information and formatting can be clearly seen.

(12)

**Sample response 1 with commentary**



**Total for question 3 (12 marks)**



## Sample response 2 with commentary

Query includes AssetType and Category (1)

Cannot determine Count has been generated correctly as need to see in design view. Candidate could have changed/added/deleted data (0)

AssetType	NumberLoans	Category
10" Tablet	4	Computer
14" Laptop	2	Computer
15" Laptop	5	Computer
300 GB USB Hard Drive	1	Storage
DLP Projector	3	Display
External DVD drive	1	Storage
Headphones	2	Sound
Headset	2	Sound
LCD Projector	5	Display
Speakers	2	Sound

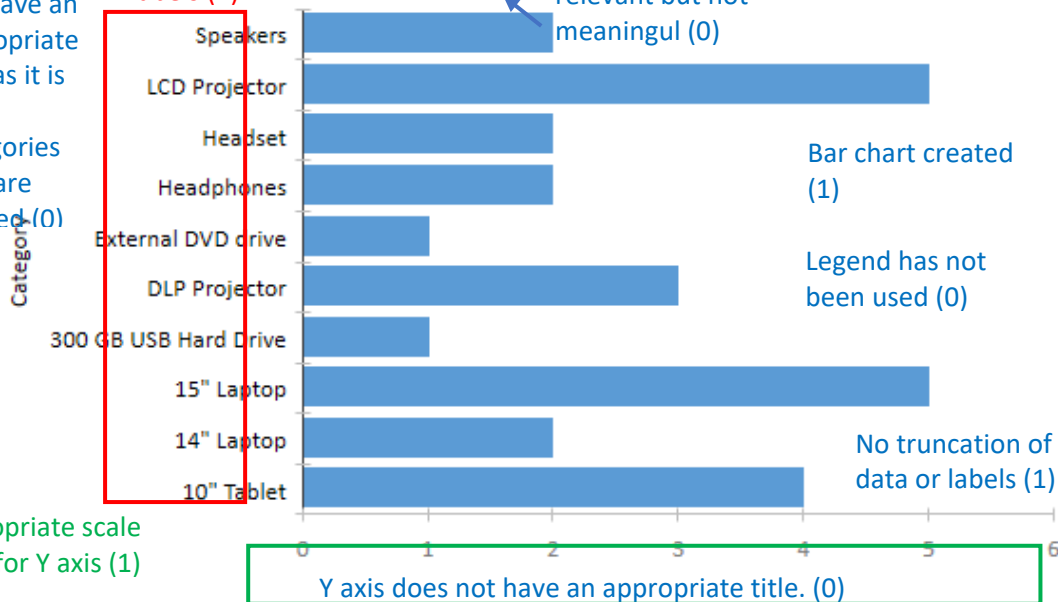
Appropriate name for Count (1)

Only AssetType, Category and Count appear in query (1)

X axis does not have an appropriate title as it is not categories that are plotted (0)

X axis uses asset type for labels (1)

Chart title is relevant but not meaningful (0)



Bar chart created (1)

Legend has not been used (0)

No truncation of data or labels (1)

Appropriate scale used for Y axis (1)

Y axis does not have an appropriate title. (0)

**Total for question 3 (7 marks)**

**Question 4 uses this context.**

Haroon needs a dashboard for the database.

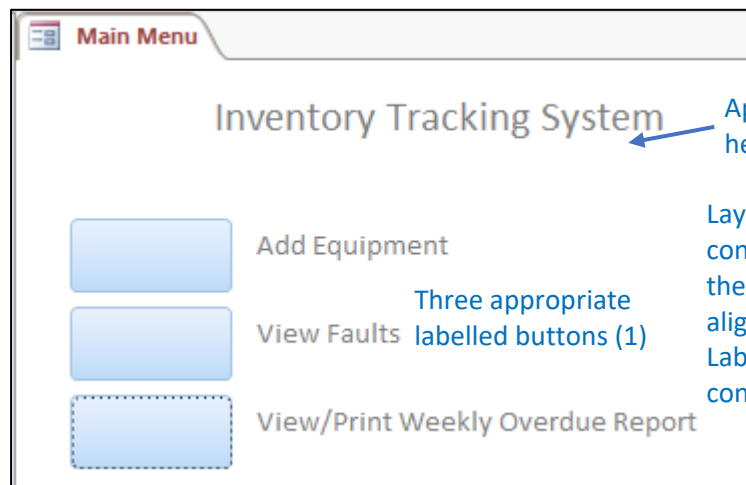
It must provide the user with buttons that will allow them to:

- open the data entry form ready for data entry
- run a query and display the results on-screen
- access a report and give the user the option to print or preview the report.

- 4** **Create** a dashboard that meets these requirements.
- Screenprint the dashboard in **Form** view.
- Screenprint in **Design** view any macros, code and/or properties you have used.

(6)

**Sample response 1 with commentary**



Appropriate heading (1)

Layout of dashboard is consistent. Buttons are the same size and aligned consistently. Labels are aligned consistently (1)

Three appropriate labelled buttons (1)

```
Private Sub cmdAddEquipment_Click()  
    DoCmd.OpenForm "frmEquipment"  
    DoCmd.GoToRecord , , acNewRec  
End Sub
```

Suitable method applied to launch data entry form. Go to new record used for data entry view (1)

```
Private Sub cmdFaultQuery_Click()  
    DoCmd.OpenQuery "qryFaults"  
End Sub
```

Suitable method to launch a query and display the results on screen (1)

```
Private Sub cmdViewReport_Click()  
    If MsgBox("Click YES to view the report before printing it?", vbYesNo) = vbNo Then  
        DoCmd.OpenReport "rptWeekly", acViewNormal  
    Else  
        DoCmd.OpenReport "rptWeekly", acViewPreview  
    End If  
End Sub
```

Suitable method to launch one report and provide user with option to either print or view (1)

**Total for Question 4 (6 marks)**

## Sample response 2 with commentary

Suitable method applied to query and display results (1)

**OpenQuery**  
Query Name qryFaults  
View Datasheet  
Data Mode Edit

The layout of the dashboard is not consistent. Buttons are different sizes etc (0)

**OpenForm**  
Form Name frmEquipment  
View Form  
Filter Name  
Where Condition  
Data Mode Add  
Window Mode Normal

Suitable method applied to launch data entry form in data entry view (1)

Add New Action

Add equipment

Menu does not have an appropriate heading (0)

Faults

report  
☐ View report  
☒ Print report

Menu does not have three buttons. A radio group has been used for the report (0)

**If [reportgroup]=1 Then**  
**OpenReport**  
Report Name rptChart  
View Print Preview  
Filter Name  
Where Condition  
Window Mode Normal  
**Else**  
**OpenReport**  
Report Name rptChart  
View Print  
Filter Name  
Where Condition  
Window Mode Normal  
**End If**

Suitable method to launch one report and provide user with option to either print or view. (1)

**Total for Question 4 (3 marks)**

**Question 5 uses this context.**

The equipment must be tested every two years to make sure it is safe to be used. If equipment fails the test or becomes overdue for a test, it cannot be used.

Haroon needs to track this activity.

**5** **Assess** the extent to which the database can be used for this purpose.

(9)

**Sample response 1**

In terms of the activity Haroon wants, the main factors to consider are:

1. safety tests that are due need to be found
  2. safety tests need to be recorded including the AssetNumber, the date of the safety test, the status of the test i.e. whether the equipment has failed the test. The fault, if there is one
  3. faulty equipment or equipment overdue a safety check should not be allowed out on loan
- 
1. The current structure would allow safety tests that are due to be found. The Equipment table has a field called LastSafetyTest. This holds the date when the safety test was carried out. A problem with it is that there is no validation to prevent the user from inputting dates that are not correct. For example a date in the future or dates far back in time. This is important, but I don't think it is a significant problem.
  2. The current structure would also allow safety tests to be recorded. The Equipment table has AssetNumber, LastSafetyTest, Faulty and FaultNotes fields. This means the relevant piece of equipment can be found, the date of the test can be added, equipment can be highlighted as being faulty and the fault can be described. However, there are problems with it. The only method for inputting a safety test is by opening the table and inputting directly into it and the user interface has not been considered at all. This is a significant downfall overall when all the problems are considered. The user could accidentally change or delete records that are already there. Another problem is the lack of validation. For example the user could tick to say there is a fault but not actually say what the fault is, or they could tick to say there is a fault but not have input the date of the test etc. Also the table has not been normalised properly meaning there can only ever be information about one safety test. It has not been recognised that a piece of equipment would require many safety tests. Really LastSafetyTest, Faulty and FaultNotes are repeating attributes that have not been recognised as such. This is more significant than the direct entry and validation problems as it seriously limits the effectiveness of the database.
  3. This current structure would allow this to take place, but it would be very difficult at the minute. The only way to record a loan is to directly input it into the tblLoan again the user interface has not been considered at all. This method of data entry carries the same problem of accidentally changing or deleting records that are there but brings other more significant problems. Currently there is nothing preventing the user adding a record for a loan for a piece of equipment that has a fault or for one that is overdue a safety test. This is a significant problem that could, at the worst endanger employees or at the least make them annoyed when something is not working. The biggest reason for this problem is the method of data entry. A form would allow queries to be incorporated filtering to only equipment that should be allowed out on loan.

**Commentary 1**

This is a levels-based question. This means that marks are allocated using the levels descriptors shown in the mark scheme. The structure used for the response is a good way of ensuring all aspects of 'assess' are included. The work fully meets the descriptor for a level 3 answer. The work begins with the identification of factors that apply. These have been given careful consideration. The most important have been identified and judgements about their significance given.

**Total for Question 5 (9 marks)**

**Sample response 2**

- Haroon wants to track safety tests.
- The database cannot do this.
- There are no forms for data input to do this and no query to find the outstanding safety tests that need to be carried out.
- The tables are wrong. The equipment table needs to have another table for the safety tests.

**Commentary 1**

This is a levels-based question. This means that marks are allocated using the levels descriptors shown in the mark scheme. The response partially meets the descriptor for a level 1 answer. However, all of the bullet points relate to the consideration of the identified factor of 'track safety tests'. The consideration itself is superficial and there are no judgements about significance or importance.

**Total for Question 5 (1 mark)**

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REGISTERED OFFICE: 80 STRAND, LONDON WC2R 0RL

VAT REG NO GB 278 537121

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