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**APPLIED INFORMATION & COMMUNICATION TECHNOLOGY**

**9713/02**

Paper 2 Practical Test A

**March 2017**

MARK SCHEME

Maximum Mark: 120

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**Published**

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the March 2017 series for most Cambridge IGCSE<sup>®</sup>, Cambridge International A and AS Level components and some Cambridge O Level components.

**Evidence document**

**Calculated date**  
 =DATE function used 1 mark  
 Correct syntax (Year,Month,Day) 1 mark

Dive number	Day	Month	Year	Date	Site_ID	Boat	Diver 1	Diver 2	No of customers
TDS17001	2	1	2017	=DATE(D2,C2,B2)	CW1	Triton I	TD50003	TD50014	10
TDS17002	2	1	2017	=DATE(D3,C3,B3)	CP	Triton I	TD50003	TD50014	12
TDS17003	2	1	2017	=DATE(D4,C4,B4)	CW1	Triton I	TD50004	TD50014	7
TDS17004	2	1	2017	=DATE(D5,C5,B5)	CW2	Triton I	TD50004	TD50014	6
TDS17005	2	1	2017	=DATE(D6,C6,B6)	QU	Oystier	TD50004	TD50005	9
TDS17006	2	1	2017	=DATE(D7,C7,B7)	BS	Oystier	TD50004	TD50005	9
TDS17007	3	1	2017	=DATE(D8,C8,B8)	PG	Triton I	TD50003		5
TDS17008	3	1	2017	=DATE(D9,C9,B9)	SG	Triton I	TD50003		5
TDS17009	3	1	2017	=DATE(D10,C10,B10)	PC	Triton I	TD50004		6
TDS17010	3	1	2017	=DATE(D11,C11,B11)	LF	Triton I	TD50004		6
TDS17011	4	1	2017	=DATE(D12,C12,B12)	DT	Dive Express	TD50018	TD50008	6
TDS17012	4	1	2017	=DATE(D13,C13,B13)	CS	Dive Express	TD50018	TD50008	6
TDS17013	4	1	2017	=DATE(D14,C14,B14)	PB	Triton I	TD50004	TD50007	12
TDS17014	4	1	2017	=DATE(D15,C15,B15)	LF	Triton I	TD50004	TD50007	12
TDS17015	4	1	2017	=DATE(D16,C16,B16)	PB	Triton I	TD50004	TD50007	12
TDS17016	5	1	2017	=DATE(D17,C17,B17)					
TDS17017	5	1	2017	=DATE(D18,C18,B18)					
TDS17018	5	1	2017	=DATE(D19,C19,B19)					
TDS17019	5	1	2017	=DATE(D20,C20,B20)					

**Dive Table created**  
 Correct table name 1 mark  
 Dive\_No 1 mark  
 Alphanumeric 1 mark  
 Set as Primary key 1 mark  
 Date as a Date field 1 mark  
 Day, Month and Year fields not imported 1 mark  
 Site\_ID as alphanumeric/text 1 mark  
 Boat as Alphanumeric/Text 1 mark  
 Lead\_Diver as Alphanumeric/Text 1 mark  
 Cust, Customers, Customer, No\_Clients 1 mark  
 Numeric / Integer 1 mark

Field Name	Data Type	Description
Dive_No	Text	
Date	Date/Time	
Site_ID	Text	
Boat	Text	
Lead_Diver	Text	
Customers	Number	

**Diver** Table created 1 mark  
 Payroll\_No 1 mark  
 as Alphanumeric/Text 1 mark  
 set as Primary key 1 mark  
 Forename as Alphanumeric/Text 1 mark  
 Surname/Last\_Name 1 mark  
 as Alphanumeric/Text 1 mark  
 Qualification/s/Qual as Alphanumeric/Text 1 mark

**Site** Table created 1 mark  
 Correct table name No M17 1 mark  
 Site\_ID 1 mark  
 Alphanumeric/Text 1 mark  
 Set as primary key 1 mark  
 Site\_Name as alphanumeric/Text 1 mark  
 Depth 1 mark  
 Alphanumeric/Text 1 mark  
 Travel\_Time as Date/Time field 1 mark  
 Dive\_Time 1 mark  
 as Date/Time field 1 mark

**Quals** Table created

Correct table name No J7	1 mark
Q_Code or other appropriate fieldname	1 mark
Alphanumeric/Text	1 mark
Set as primary key	1 mark
Qualification or other appropriate fieldname	1 mark
Alphanumeric/Text	1 mark
Pay_Rate or other appropriate fieldname	1 mark
Numeric / Integer / Currency	1 mark

**Edit Relationships**

Table/Query: Site    Related Table/Query: Dive

Site\_ID    Site\_ID

Enforce Referential Integrity

Cascade Update Related Fields

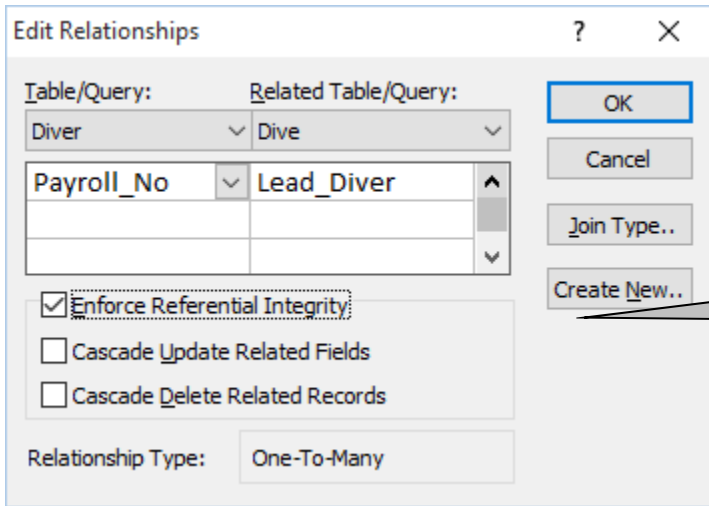
Cascade Delete Related Records

Relationship Type: One-To-Many

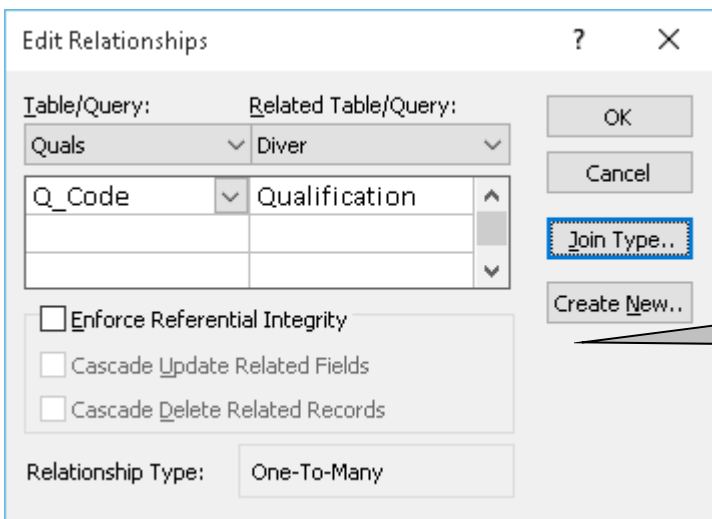
Buttons: OK, Cancel, Join Type.., Create New..

Correct fields  
 ...One-to-many

Correct fields	2 marks
...One-to-many	1 mark

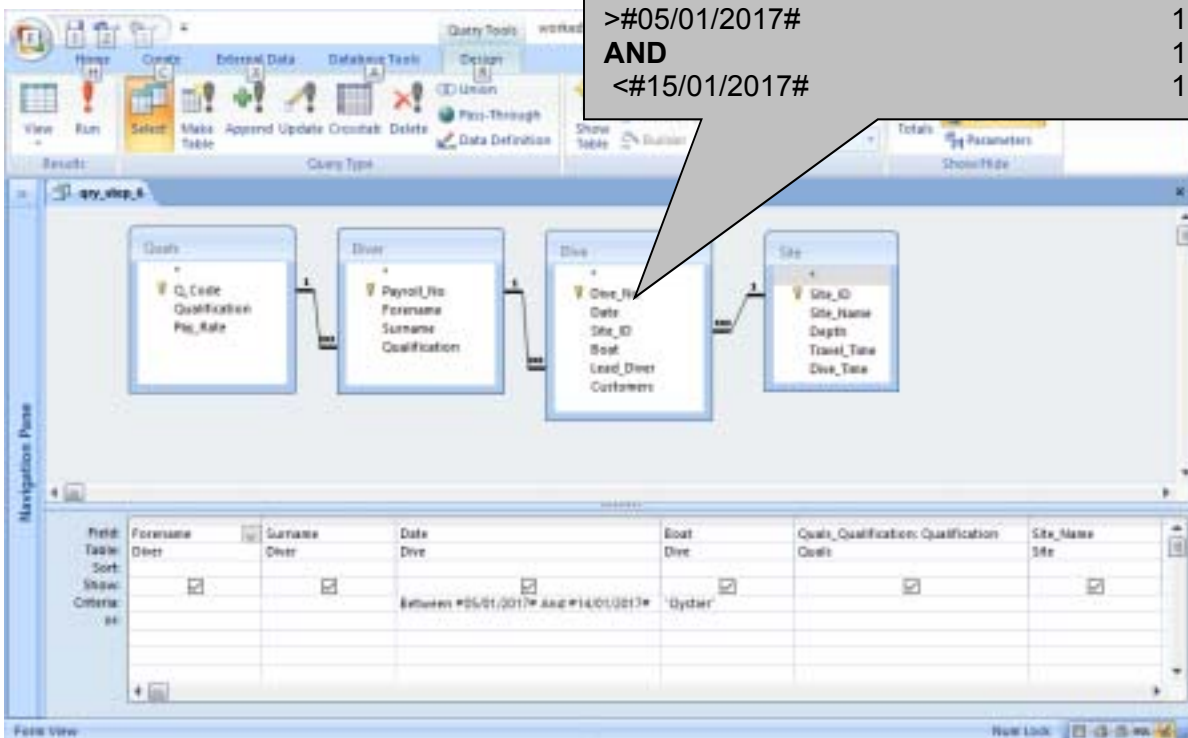


Correct fields  
 ...One-to-many  
 2 marks  
 1 mark



Correct fields  
 ...One-to-many  
 2 marks  
 1 mark

Search:  
 Boat = Oystier  
**AND**  
 >#05/01/2017#  
**AND**  
 <#15/01/2017#



Header:

Appropriate title

1 mark

## All dives from the Oystier between the 5th and 15th January

Site_Name	Boat	Date	Forename	Surname	Qualification
Cassablanca	Oystier	11/01/2017	Alberto	Acosta	Instructor
La Francesca	Oystier	14/01/2017	Christopher	Scott	Master Instructor
Palancar Bricks	Oystier	10/01/2017	Juan	Gutierrez	Instructor
Palancar Gardens	Oystier	06/01/2017	Christopher	Scott	Master Instructor
Palancar Gardens	Oystier	06/01/2017	Christopher	Scott	Master Instructor
Palancar Gardens	Oystier	11/01/2017	Gustavo	Pulido	Master Instructor
Palancar Gardens	Oystier	11/01/2017	Gustavo	Pulido	Master Instructor
Quervonnes	Oystier	10/01/2017	Juan	Gutierrez	Instructor
Santa Rosa Wall	Oystier	06/01/2017	Pingo	Ake	Instructor
Whitehouse	Oystier	06/01/2017	Pingo	Ake	Instructor
Yucab	Oystier	14/01/2017	Christopher	Scott	Master Instructor

Format:

Date field dd/mm/yyyy

1 mark

Search:

Correct 11 results

1 mark

Fields as shown and sorted by Site

1 mark

Name &amp; Candidate details in the footer

1 mark

Report by A Candidate, XX999, 9999

**Search:**  
Depth = D 1 mark

**Calculated field**

- Appropriate field name 1 mark
- Named using naming conventions 1 mark
- Correct syntax for calculation 1 mark
- [Dive Time] 1 mark
- + 1 mark
- 2\*[Travel Time] 1 mark

Field:	Site_Name	Depth	Travel_Time	Dive_Time	Total_Time: (2*[Travel_Time]+[Dive_Time])
Table:	Site	Site	Site	Site	
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		"D"			
or:					

**Report Header**  
Time taken for deep dive trips

**Page Header**  
Site\_Name | Travel\_Time | Dive\_Time | Total\_Time

**Detail**  
Site\_Name | Travel\_Time | Dive\_Time | Total\_Time

**Page Footer**  
A Candidate, 22999, 9999 | ="Page " & [Page] & " of " & [Pages]

**Report Footer**  
Average trip time | =Avg([Total\_Time])

**Calculation:**  
 =AVG  
 ([Total\_Time]) 1 mark  
1 mark

## Time taken for deep dive trips

Site_Name	Travel_Time	Dive_Time	Total_Time
Maracaibo	00:40	00:35	01:55
Columbia Deep	00:36	00:40	01:52
Columbia Pinnacles	00:35	00:40	01:50
Punta Sur	00:35	00:40	01:50
Devils Throat	00:34	00:30	01:38
Jorges Reef	00:21	00:45	01:27
Palancar Caves	00:22	00:40	01:24
Quervonnes	00:21	00:40	01:22
Palancar Bricks	00:19	00:40	01:18
Palancar Gardens	00:18	00:40	01:16
San Fransisco Wall	00:10	00:40	01:00
Cedral Wall	00:07	00:45	00:59
Santa Rosa Wall	00:03	00:40	00:46
Average trip time			01:25

A Candidate, ZZ999, 9999

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**Calculations:**

Correct calcs for calc field 1 mark

Correct calc for calc control 1 mark

**Format:**

All 3 Time fields hh:mm 3 marks

Calculated control hh mm 1 mark

Positioning of calculated control 1 mark

Appropriate label for calc control 1 mark

Candidate details in footer 1 mark



The screenshot shows the Microsoft Access Query Design View for a query named 'qry\_step\_8'. Two tables, 'Diver' and 'Dive', are connected by a relationship line. The 'Diver' table has fields: Payroll\_No, Forename, Surname, and Qualification. The 'Dive' table has fields: Dive\_No, Date, Site\_ID, Boat, and Lead\_Diver. The field list at the bottom shows the following fields:

Field:	Dive_No	Boat	Forename	Surname	Name: [Forename] & ' ' & [Surname]
Table:	Dive	Dive	Diver	Diver	
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:					
on:					


Calculated field  
Called Name  
Syntax to concatenate strings  
1 mark  
2 marks

The screenshot shows the Microsoft Access interface in Design View for a query named 'qry\_step\_8'. The ribbon at the top includes 'FILE', 'HOME', 'CREATE', 'EXTERNAL DATA', 'DATABASE TOOLS', and 'DESIGN'. The 'DESIGN' ribbon has buttons for 'View', 'Run', 'Select', 'Make Table', 'Append', 'Update', 'Delete', 'Union', 'Crosstab', 'Pass-Through', 'Data Definition', 'Query Setup', and 'Show/Hide'. The main workspace shows two tables: 'Diver' and 'Dive'. The 'Diver' table has fields: Payroll\_No (primary key), Forename, Surname, and Qualification. The 'Dive' table has fields: Dive\_No (primary key), Date, Site\_ID, Boat, and Lead\_Diver. A relationship line connects 'Payroll\_No' in the 'Diver' table to 'Dive\_No' in the 'Dive' table. Below the tables is a table grid with the following data:

Field:	Dive_No	Boat	DName: [Forename]+'*'+[Surname]
Table:	Dive	Dive	
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			
or:			

The 'Navigation Pane' is visible on the left side of the window. The status bar at the bottom shows 'Form View', 'NUM LOCK', 'SQL', and a save icon.

Header:  
Appropriate title  
and contains candidate details  
1 mark  
1 mark

 Number of dives by each lead diver from each boat  
Report created by A Candidate, Z2999, 9999

Name	Dive Express	Oystier	Triton I
Alberto Acosta	1	1	4
Carlos Heredia	2		2
Christopher Scott		4	20
Edwin Heredia			1
Gustavo Alamillo	1		
Gustavo Pulido		13	
Ismael Cardenas		2	
Jesus Euan	2		
Jesus Zapata	3		
Jorge Burgos		2	33
Juan Gutierrez		6	9
Lobo Cohuo			1
Michelle Scott			4
Pingo Ake		2	
Rita Grajales	1		

Format:  
Single portrait page and **all** fully visible 1 mark  
Gridlines visible 1 mark

Crosstab/Pivot table:  
Name as row headings 1 mark  
Boat name as column headings 1 mark  
Count as mathematical operation 1 mark  
Correct values 1 mark

**PUBLISHED**

Header: Appropriate title	1 mark
Report created by: and candidate details	1 mark

**Dives at Palancar, Columbia or Cedral**

Report created by: A Candidate, ZZ999, 9999

Forename	Surname	Qualification	Pay_Rate	Site_Name	Date	Boat
Alberto	Acosta	Instructor	32000	Palancar Bricks	22/01/2017	Triton I
					22/01/2017	Triton I
Carlos	Heredia	Dive Master	24000	Columbia Pinnacles	23/01/2017	Dive Express
				Columbia Shallows	23/01/2017	Dive Express
Christopher	Scott	Master Instructor	46000	Palancar Bricks	21/01/2017	Triton I
					09/01/2017	Triton I
					21/01/2017	Triton I
					19/01/2017	Triton I
				Palancar Caves	09/01/2017	Triton I
					21/01/2017	Triton I
				Palancar Gardens	06/01/2017	Oystier
					16/01/2017	Triton I
					08/01/2017	Triton I
					06/01/2017	Oystier
					16/01/2017	Triton I
					08/01/2017	Triton I
Gustavo	Alamilla	Instructor	32000	Columbia Pinnacles	12/01/2017	Dive Express
				Palancar Bricks	26/01/2017	Oystier
					26/01/2017	Oystier
				Palancar Caves		

Search: Palancar, Columbia, or Cedral	3 marks
Grouping level 1: ...Forename	1 mark
...Surname	1 mark
...Qualification	1 mark
...Pay_Rate in group header	1 mark

Grouping level 2: ...Site_Name	1 mark
Report detail: ...Date & Boat only	1 mark

Forename	Surname	Qualification	Pay_Rate	Site_Name	Date	Boat
					20/01/2017	Oystier
					17/01/2017	Oystier
				Palancar Gardens		
					11/01/2017	Oystier
					11/01/2017	Oystier
Ismael	Cardenas	Instructor	32000	Palancar Caves		
					21/01/2017	Oystier
Jesus	Euan	Dive Master	24000	Columbia Shallows		
					18/01/2017	Dive Express
					04/01/2017	Dive Express
Jorge	Burgos	Instructor	32000	Cedral Wall		
					02/01/2017	Triton I
					02/01/2017	Triton I
				Cedral Pass		
					15/01/2017	Triton I
				Columbia Shallows		
					23/01/2017	Triton I
					13/01/2017	Triton I
				Palancar Bricks		
					15/01/2017	Triton I
					02/01/2017	Oystier
					11/01/2017	Triton I
					08/01/2017	Triton I
					04/01/2017	Triton I
					04/01/2017	Triton I
					15/01/2017	Triton I
					11/01/2017	Triton I
				Palancar Caves		
					08/01/2017	Triton I
					03/01/2017	Triton I
					14/01/2017	Triton I
					17/01/2017	Triton I

27 August 2015

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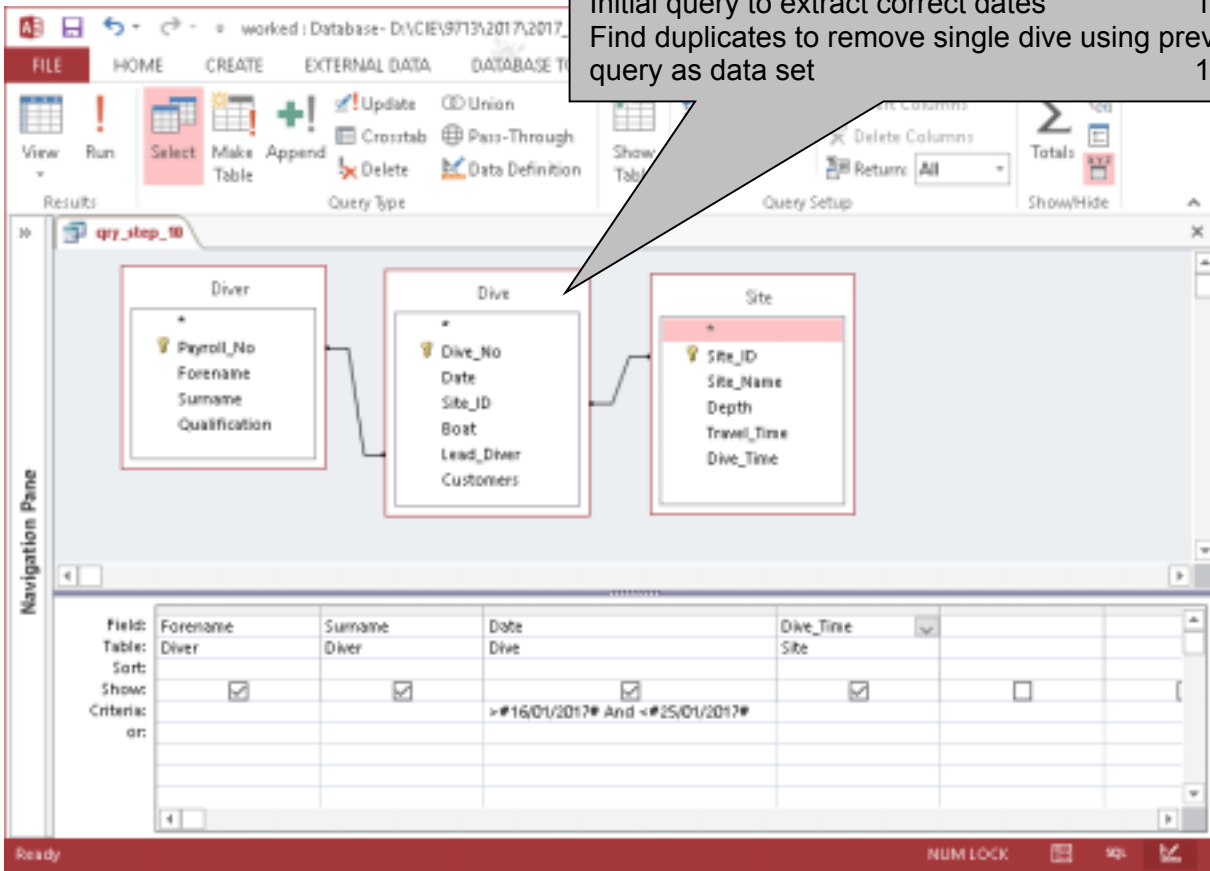
Forename	Surname	Qualification	Pay_Rate	Site_Name	Date	Boat
				Palancar Gardens	20/01/2017	Triton I
					23/01/2017	Triton I
					20/01/2017	Triton I
Juan	Gutierrez	Instructor	32000	Cedral Wall	02/01/2017	Triton I
				Cedral Pass	02/01/2017	Triton I
				Palancar Bricks	05/01/2017	Triton I
					10/01/2017	Oystier
					16/01/2017	Oystier
				Palancar Gardens	13/01/2017	Triton I
					23/01/2017	Oystier
					03/01/2017	Triton I
					23/01/2017	Oystier
					13/01/2017	Triton I
					03/01/2017	Triton I
Lobo	Cohuo	Instructor	32000	Palancar Bricks	07/01/2017	Triton I
Michelle	Scott	Instructor	32000	Palancar Caves	10/01/2017	Triton I
Rita	Grajales	Instructor	32000	Columbia Shallows	12/01/2017	Dive Express

All fields present and fully visible	1 mark
Orientation portrait	1 mark
Printed single page wide	1 mark

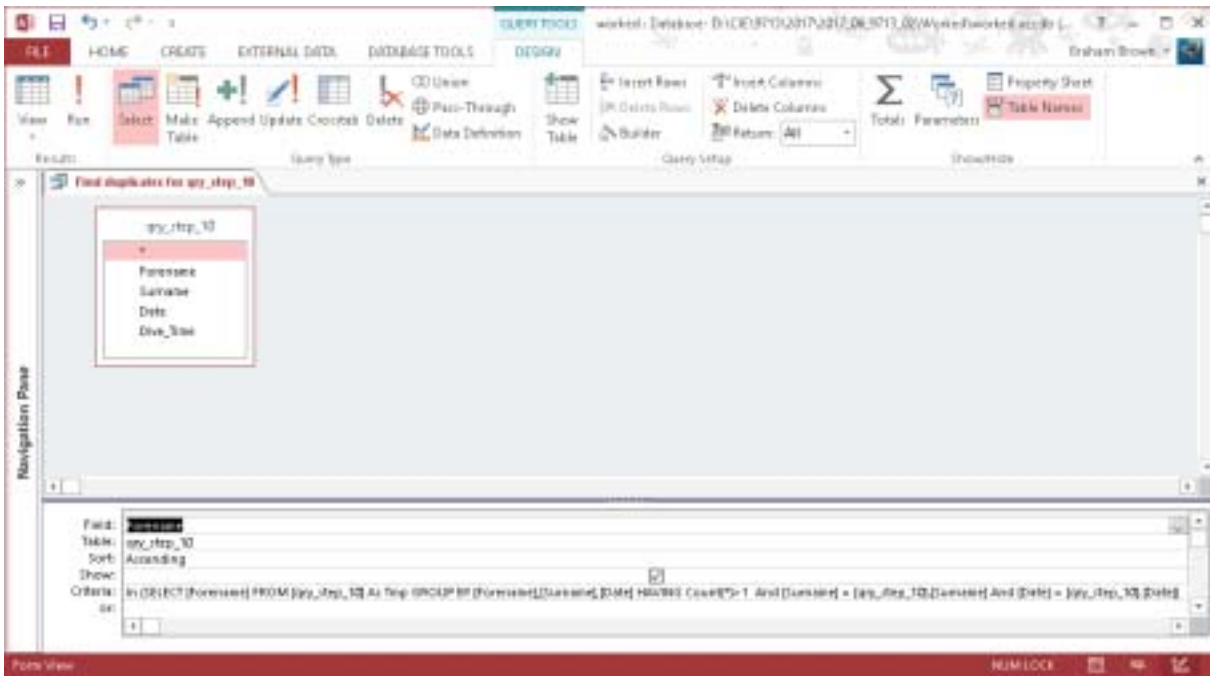
**Step 10**

Initial query to extract dates:

Correct fields extracted 1 mark  
 Search: 1 mark  
 Initial query to extract correct dates 1 mark  
 Find duplicates to remove single dive using previous query as data set 1 mark



Find duplicates on original query to remove days with single dives:



Exported into a spreadsheet:

Names and dates merged with dates converted to text.

Concatenation of names and dates or appropriate grouping for same effect  
 1 mark

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D
1	Name	Date	Name & Date	Dive_Time
2	Alberto Acosta	42757	=CONCATENATE(A2, " ", TEXT(B2, "dd/mm/yyyy"))	0.0277777777777778
3	Alberto Acosta	42757	=CONCATENATE(A3, " ", TEXT(B3, "dd/mm/yyyy"))	0.0347222222222222
4	Alberto Acosta	42757	=CONCATENATE(A4, " ", TEXT(B4, "dd/mm/yyyy"))	0.0277777777777778
5	Alberto Acosta	42757	=CONCATENATE(A5, " ", TEXT(B5, "dd/mm/yyyy"))	0.03125
6	Carlos Heredia	42758	=CONCATENATE(A6, " ", TEXT(B6, "dd/mm/yyyy"))	0.0416666666666667
7	Carlos Heredia	42758	=CONCATENATE(A7, " ", TEXT(B7, "dd/mm/yyyy"))	0.0277777777777778
8	Carlos Heredia	42758	=CONCATENATE(A8, " ", TEXT(B8, "dd/mm/yyyy"))	0.03125
9	Carlos Heredia	42758	=CONCATENATE(A9, " ", TEXT(B9, "dd/mm/yyyy"))	0.0277777777777778
10	Christopher Scott	42754	=CONCATENATE(A10, " ", TEXT(B10, "dd/mm/yyyy"))	0.03125
11	Christopher Scott	42754	=CONCATENATE(A11, " ", TEXT(B11, "dd/mm/yyyy"))	0.0277777777777778
12	Christopher Scott	42754	=CONCATENATE(A12, " ", TEXT(B12, "dd/mm/yyyy"))	0.0347222222222222
13	Christopher Scott	42754	=CONCATENATE(A13, " ", TEXT(B13, "dd/mm/yyyy"))	0.0277777777777778
14	Christopher Scott	42754	=CONCATENATE(A14, " ", TEXT(B14, "dd/mm/yyyy"))	0.03125
15	Christopher Scott	42756	=CONCATENATE(A15, " ", TEXT(B15, "dd/mm/yyyy"))	0.0347222222222222
16	Christopher Scott	42756	=CONCATENATE(A16, " ", TEXT(B16, "dd/mm/yyyy"))	0.0277777777777778
17	Christopher Scott	42756	=CONCATENATE(A17, " ", TEXT(B17, "dd/mm/yyyy"))	0.0347222222222222
18	Christopher Scott	42756	=CONCATENATE(A18, " ", TEXT(B18, "dd/mm/yyyy"))	0.0277777777777778
19	Christopher Scott	42759	=CONCATENATE(A19, " ", TEXT(B19, "dd/mm/yyyy"))	0.0277777777777778
20	Christopher Scott	42759	=CONCATENATE(A20, " ", TEXT(B20, "dd/mm/yyyy"))	0.03125
21	Gustavo Pulido	42752	=CONCATENATE(A21, " ", TEXT(B21, "dd/mm/yyyy"))	0.0277777777777778
22	Gustavo Pulido	42752	=CONCATENATE(A22, " ", TEXT(B22, "dd/mm/yyyy"))	0.03125



Find duplicates function run to give single list and dates. Then SUMIF function used to calculate total time.

Find duplicates or appropriate grouping 1 mark  
SUMIF correct formulae or grouped subtotals 1 mark  
Calculations to retain original names and dates 1 mark

	F	G	H	I	J
1	Name & Date		Name	Date	Total Time
2	Christopher Scott 19/01/2017	=LEFT(F2,(LEN(F2)-10))	=RIGHT(F2,10)	=SUMIF(C\$2:C\$40,F2,D\$2:D\$40)	
3	Carlos Heredia 23/01/2017	=LEFT(F3,(LEN(F3)-10))	=RIGHT(F3,10)	=SUMIF(C\$2:C\$40,F3,D\$2:D\$40)	
4	Christopher Scott 21/01/2017	=LEFT(F4,(LEN(F4)-10))	=RIGHT(F4,10)	=SUMIF(C\$2:C\$40,F4,D\$2:D\$40)	
5	Alberto Acosta 22/01/2017	=LEFT(F5,(LEN(F5)-10))	=RIGHT(F5,10)	=SUMIF(C\$2:C\$40,F5,D\$2:D\$40)	
6	Jorge Burgos 20/01/2017	=LEFT(F6,(LEN(F6)-10))	=RIGHT(F6,10)	=SUMIF(C\$2:C\$40,F6,D\$2:D\$40)	
7	Gustavo Pulido 17/01/2017	=LEFT(F7,(LEN(F7)-10))	=RIGHT(F7,10)	=SUMIF(C\$2:C\$40,F7,D\$2:D\$40)	
8	Jorge Burgos 23/01/2017	=LEFT(F8,(LEN(F8)-10))	=RIGHT(F8,10)	=SUMIF(C\$2:C\$40,F8,D\$2:D\$40)	
9	Juan Gutierrez 23/01/2017	=LEFT(F9,(LEN(F9)-10))	=RIGHT(F9,10)	=SUMIF(C\$2:C\$40,F9,D\$2:D\$40)	
10	Jesus Euan 18/01/2017	=LEFT(F10,(LEN(F10)-10))	=RIGHT(F10,10)	=SUMIF(C\$2:C\$40,F10,D\$2:D\$40)	
11	Ismael Cardenas 21/01/2017	=LEFT(F11,(LEN(F11)-10))	=RIGHT(F11,10)	=SUMIF(C\$2:C\$40,F11,D\$2:D\$40)	
12	Gustavo Pulido 20/01/2017	=LEFT(F12,(LEN(F12)-10))	=RIGHT(F12,10)	=SUMIF(C\$2:C\$40,F12,D\$2:D\$40)	
13	Michelle Scott 24/01/2017	=LEFT(F13,(LEN(F13)-10))	=RIGHT(F13,10)	=SUMIF(C\$2:C\$40,F13,D\$2:D\$40)	
14	Jorge Burgos 17/01/2017	=LEFT(F14,(LEN(F14)-10))	=RIGHT(F14,10)	=SUMIF(C\$2:C\$40,F14,D\$2:D\$40)	
15	Christopher Scott 24/01/2017	=LEFT(F15,(LEN(F15)-10))	=RIGHT(F15,10)	=SUMIF(C\$2:C\$40,F15,D\$2:D\$40)	
16					
17					

Name and date removed from string for final formatting.

Correct totals shown 1 mark  
Sorted into descending on total dive time 1 mark

## Total dive times for all lead divers with more than 1 daily dive between 16<sup>th</sup> and 25<sup>th</sup> January

Report by A Candidate, ZZ999, 9999



Name	Date	Total Time
Christopher Scott	19/01/2017	03:40
Carlos Heredia	23/01/2017	03:05
Christopher Scott	21/01/2017	03:00
Alberto Acosta	22/01/2017	02:55
Jorge Burgos	20/01/2017	02:15
Gustavo Pulido	17/01/2017	02:15
Jorge Burgos	23/01/2017	01:40
Juan Gutierrez	23/01/2017	01:30
Jesus Euan	18/01/2017	01:30
Ismael Cardenas	21/01/2017	01:30
Gustavo Pulido	20/01/2017	01:30
Michelle Scott	24/01/2017	01:25
Jorge Burgos	17/01/2017	01:25
Christopher Scott	24/01/2017	01:25

Name and Candidate details in the header 1 mark  
Appropriate title includes >1 dive per day and correct 2 dates & total dive time 1 mark  
Appropriate image selection 1 mark  
Appropriate position/aspect ratio 1 mark  
Tabular form with gridlines present 1 mark

Chart:  
 Appropriate chart type 1 mark  
 Appropriate title 1 mark  
 Correct values shown 1 mark  
 Both names and dates fully visible 1 mark  
 Appropriate labels 1 mark

