

## /\* Question 1 \*/

```
SELECT GUIDE_NUM, LOWER (FIRST_NAME), UPPER (LAST_NAME)
FROM GUIDE;
```

| GUIDE_NUM | LOWER(FIRST_NAME) | UPPER(LAST_NAME) |
|-----------|-------------------|------------------|
| BR01      | rita              | BOYERS           |
| DH01      | harley            | DEVON            |
| GZ01      | zach              | GREGORY          |
| KS01      | susan             | KILEY            |
| KS02      | sam               | KELLY            |
| MR01      | ray               | MARSTON          |
| RH01      | hal               | ROWAN            |
| SL01      | lori              | STEVENS          |
| UG01      | glory             | UNSER            |
| VW01      | brian             | WARNER           |
| AM01      | miles             | ABRAMS           |

11 rows selected. 0.01 seconds

## /\* Question 2 \*/

```
SELECT TRIP_ID, TRIP_NAME
FROM TRIP
WHERE UPPER (START_LOCATION) = 'BAR HARBOR'
OR LOWER (START_LOCATION) = 'BAR HARBOR';
```

| TRIP_ID | TRIP_NAME              |
|---------|------------------------|
| 12      | Cadillac Mountain Ride |
| 13      | Cadillac Mountain      |
| 17      | Huguenot Head Hike     |
| 37      | Seal Beach Harbor      |

4 rows selected. 0.01 seconds

## /\* Question 3 \*/

```
SELECT RESERVATION_ID, TRIP_DATE, ROUND (TRIP_PRICE,0) AS ROUNDED_TRIP_PRICE
FROM RESERVATION;
```

| RESERVATION_ID | TRIP_DATE  | ROUNDED_TRIP_PRICE |
|----------------|------------|--------------------|
| 1600001        | 03/26/2016 | 55                 |
| 1600002        | 06/08/2016 | 95                 |
| 1600003        | 09/12/2016 | 35                 |
| 1600004        | 10/16/2016 | 45                 |
| 1600005        | 06/25/2016 | 55                 |
| 1600006        | 06/18/2016 | 80                 |
| 1600007        | 07/09/2016 | 75                 |

|         |            |     |
|---------|------------|-----|
| 1600008 | 09/12/2016 | 35  |
| 1600009 | 09/11/2016 | 90  |
| 1600010 | 05/14/2016 | 25  |
| 1600011 | 09/15/2016 | 25  |
| 1600012 | 06/12/2016 | 15  |
| 1600013 | 07/09/2016 | 20  |
| 1600014 | 10/01/2016 | 40  |
| 1600015 | 07/23/2016 | 20  |
| 1600016 | 07/23/2016 | 75  |
| 1600017 | 06/18/2016 | 20  |
| 1600018 | 09/18/2016 | 85  |
| 1600019 | 08/29/2016 | 110 |
| 1600020 | 08/27/2016 | 35  |
| 1600021 | 06/11/2016 | 90  |
| 1600022 | 06/08/2016 | 95  |
| 1600024 | 09/11/2016 | 70  |
| 1600025 | 09/11/2016 | 70  |
| 1600026 | 10/01/2016 | 40  |
| 1600029 | 09/19/2016 | 105 |
| 1600030 | 07/25/2016 | 60  |

27 rows selected. 0.01 seconds

**/\* Question 4A \*/**

```

CREATE OR REPLACE PROCEDURE DISP_GUIDE_NAME
(I_GUIDE_NUM IN GUIDE.GUIDE_NUM%TYPE)
AS
I_FIRST_NAME GUIDE.FIRST_NAME%TYPE;
I_LAST_NAME GUIDE.LAST_NAME%TYPE;

BEGIN
SELECT FIRST_NAME, LAST_NAME
INTO I_FIRST_NAME, I_LAST_NAME
FROM GUIDE
WHERE GUIDE_NUM = I_GUIDE_NUM;

DBMS_OUTPUT.PUT_LINE (I_GUIDE_NUM || ' ' || RTRIM (I_FIRST_NAME) || ' ' || RTRIM (I_LAST_NAME));
EXCEPTION
WHEN NO_DATA_FOUND THEN
DBMS_OUTPUT.PUT_LINE ('There is no guide with this number: ' || I_GUIDE_NUM);

END;
/

```

| Number | Elapsed | Statement  | Feedback           | Rows |
|--------|---------|--|--------------------|------|
| 1      | 0.14    | CREATE OR REPLACE<br>PROCEDURE<br>DISP_GUIDE_NAME<br>(I_GUIDE_NUM IN | Procedure created. |      |

Statements Processed

1

Successful

1

With Errors

0

BEGIN

DISP\_GUIDE\_NAME ('AM01');

END;

/

AM01 Miles Abrams

Statement processed. 0.01 seconds

**/\* Question 4B \*/**

```
CREATE OR REPLACE PROCEDURE CUST_RES_ID
(I_RESERVATION_ID IN RESERVATION.RESERVATION_ID%TYPE)
AS
I_NUM_PERSONS RESERVATION.NUM_PERSONS%TYPE;
I_CUSTOMER_NUM RESERVATION.CUSTOMER_NUM%TYPE;
I_LAST_NAME CUSTOMER.LAST_NAME%TYPE;
```

```
CURSOR RESGROUP IS
SELECT R.NUM_PERSONS, R.CUSTOMER_NUM, C.LAST_NAME
FROM RESERVATION R, CUSTOMER C
WHERE R.CUSTOMER_NUM = C.CUSTOMER_NUM
AND RESERVATION_ID = I_RESERVATION_ID;
```

BEGIN

OPEN RESGROUP;

LOOP

FETCH RESGROUP INTO I\_NUM\_PERSONS, I\_CUSTOMER\_NUM, I\_LAST\_NAME;

EXIT WHEN RESGROUP%NOTFOUND;

DBMS\_OUTPUT.PUT\_LINE (I\_NUM\_PERSONS || ' ' || I\_CUSTOMER\_NUM || ' ' || RTRIM (I\_LAST\_NAME));

END LOOP;

CLOSE RESGROUP;

END;

/

| Number | Elapsed | Statement   | Feedback           | Rows |
|--------|---------|---|--------------------|------|
| 1      | 0.10    | CREATE OR REPLACE<br>PROCEDURE<br>CUST_RES_ID<br>(I_RESERVATION_I | Procedure created. | 0    |

Statements Processed

1

Successful

1

With Errors

0

BEGIN

CUST\_RES\_ID ('1600001');

END;

/

2 101 Northfold

Statement processed. 0.01 seconds

**/\* Question 4C \*/**

CREATE OR REPLACE PROCEDURE ADD\_ROW\_GUIDE

(I\_GUIDE\_NUM IN GUIDE.GUIDE\_NUM%TYPE,

I\_LAST\_NAME IN GUIDE.LAST\_NAME%TYPE,

I\_FIRST\_NAME IN GUIDE.FIRST\_NAME%TYPE,

I\_ADDRESS IN GUIDE.ADDRESS%TYPE,

I\_CITY IN GUIDE.CITY%TYPE,

I\_STATE IN GUIDE.STATE%TYPE,

I\_POSTAL\_CODE IN GUIDE.POSTAL\_CODE%TYPE,

I\_PHONE\_NUM IN GUIDE.PHONE\_NUM%TYPE,

I\_HIRE\_DATE IN GUIDE.HIRE\_DATE%TYPE)

AS

BEGIN

INSERT INTO GUIDE VALUES (I\_GUIDE\_NUM, I\_LAST\_NAME, I\_FIRST\_NAME, I\_ADDRESS, I\_CITY, I\_STATE,  
I\_POSTAL\_CODE, I\_PHONE\_NUM, I\_HIRE\_DATE);

END;

/

BEGIN

ADD\_ROW\_GUIDE ('VW01', 'Warner', 'Brian', '1 Main St.', 'Midvale', 'UT', '84047', '801-555-1234', '10/31/2018');

END;

/

SELECT \*

FROM GUIDE;

| GUIDE_NUM | LAST_NAME | FIRST_NAME | ADDRESS           | CITY    | STATE | POSTAL_CODE | PHONE_NUM        | HIRE_DATE      |
|-----------|-----------|------------|-------------------|---------|-------|-------------|------------------|----------------|
| BR01      | Boyers    | Rita       | 140<br>Oakton Rd. | Jaffrey | NH    | 03452       | 603-555-<br>2134 | 03/04/201<br>2 |

|      |         |        |                   |              |    |       |              |            |
|------|---------|--------|-------------------|--------------|----|-------|--------------|------------|
| DH01 | Devon   | Harley | 25 Old Ranch Rd.  | Sunderland   | MA | 01375 | 781-555-7767 | 01/08/2012 |
| GZ01 | Gregory | Zach   | 7 Moose Head Rd.  | Dummer       | NH | 03588 | 603-555-8765 | 11/04/2012 |
| KS01 | Kiley   | Susan  | 943 Oakton Rd.    | Jaffrey      | NH | 03452 | 603-555-1230 | 04/08/2013 |
| KS02 | Kelly   | Sam    | 9 Congaree Ave.   | Fraconia     | NH | 03580 | 603-555-0003 | 06/10/2013 |
| MR01 | Marston | Ray    | 24 Shenandoah Rd. | Springfield  | MA | 01101 | 781-555-2323 | 09/14/2015 |
| RH01 | Rowan   | Hal    | 12 Heather Rd.    | Mount Desert | ME | 04660 | 207-555-9009 | 06/02/2014 |
| SL01 | Stevens | Lori   | 15 Riverton Rd.   | Coventry     | VT | 05825 | 802-555-3339 | 09/05/2014 |
| UG01 | Unser   | Glory  | 342 Pineview St.  | Danbury      | CT | 06810 | 203-555-8534 | 02/02/2015 |
| AM01 | Abrams  | Miles  | 54 Quest Ave.     | Williamsburg | MA | 01096 | 617-555-6032 | 06/03/2012 |
| VW01 | Warner  | Brian  | 1 Main St.        | Midvale      | UT | 84047 | 801-555-1234 | 10/31/2018 |

11 rows selected. 0.00 seconds

**/\* Question 4D \*/**

```
CREATE OR REPLACE PROCEDURE UPDT_GUIDE_NAME
```

```
(I_GUIDE_NUM IN GUIDE.GUIDE_NUM%TYPE,
```

```
I_LAST_NAME IN GUIDE.LAST_NAME%TYPE)
```

```
AS
```

```
BEGIN
```

```
UPDATE GUIDE
```

```
SET LAST_NAME = I_LAST_NAME
```

```
WHERE GUIDE_NUM = I_GUIDE_NUM;
```

```
END;
```

```
/
```

```
BEGIN
```

```
UPDT_GUIDE_NAME ('AM01', 'Evans');
```

```
END;
```

```
/
```

Statement processed. 0.02 seconds

```
SELECT *
```

```
FROM GUIDE;
```

| GUIDE_NUM | LAST_NAME | FIRST_NAME | ADDRESS           | CITY         | STATE | POSTAL_CODE | PHONE_NUM    | HIRE_DATE  |
|-----------|-----------|------------|-------------------|--------------|-------|-------------|--------------|------------|
| BR01      | Boyers    | Rita       | 140 Oakton Rd.    | Jaffrey      | NH    | 03452       | 603-555-2134 | 03/04/2012 |
| DH01      | Devon     | Harley     | 25 Old Ranch Rd.  | Sunderland   | MA    | 01375       | 781-555-7767 | 01/08/2012 |
| GZ01      | Gregory   | Zach       | 7 Moose Head Rd.  | Dummer       | NH    | 03588       | 603-555-8765 | 11/04/2012 |
| KS01      | Kiley     | Susan      | 943 Oakton Rd.    | Jaffrey      | NH    | 03452       | 603-555-1230 | 04/08/2013 |
| KS02      | Kelly     | Sam        | 9 Congaree Ave.   | Fraconia     | NH    | 03580       | 603-555-0003 | 06/10/2013 |
| MR01      | Marston   | Ray        | 24 Shenandoah Rd. | Springfield  | MA    | 01101       | 781-555-2323 | 09/14/2015 |
| RH01      | Rowan     | Hal        | 12 Heather Rd.    | Mount Desert | ME    | 04660       | 207-555-9009 | 06/02/2014 |
| SL01      | Stevens   | Lori       | 15 Riverton Rd.   | Coventry     | VT    | 05825       | 802-555-3339 | 09/05/2014 |
| UG01      | Unser     | Glory      | 342 Pineview St.  | Danbury      | CT    | 06810       | 203-555-8534 | 02/02/2015 |
| AM01      | Evans     | Miles      | 54 Quest Ave.     | Williamsburg | MA    | 01096       | 617-555-6032 | 06/03/2012 |
| VW01      | Warner    | Brian      | 1 Main St.        | Midvale      | UT    | 84047       | 801-555-1234 | 10/31/2018 |

11 rows selected. 0.00 seconds

**/\* Question 4E \*/**

```
CREATE OR REPLACE PROCEDURE DEL_GUIDE_NAME
(I_GUIDE_NUM IN GUIDE.GUIDE_NUM%TYPE)
AS
```

```
BEGIN
DELETE
FROM GUIDE
WHERE GUIDE_NUM = I_GUIDE_NUM;
```

```
DELETE
FROM TRIP_GUIDES
WHERE GUIDE_NUM = I_GUIDE_NUM;
```

```
END;
/
```

```
BEGIN
DEL_GUIDE_NAME ('AM01');
```

END;

/

Statement processed. 0.01 seconds

SELECT \*  
FROM GUIDE;

| GUIDE_NUM | LAST_NAME | FIRST_NAME | ADDRESS           | CITY         | STATE | POSTAL_CODE | PHONE_NUMBER | HIRE_DATE  |
|-----------|-----------|------------|-------------------|--------------|-------|-------------|--------------|------------|
| BR01      | Boyers    | Rita       | 140 Oakton Rd.    | Jaffrey      | NH    | 03452       | 603-555-2134 | 03/04/2012 |
| DH01      | Devon     | Harley     | 25 Old Ranch Rd.  | Sunderland   | MA    | 01375       | 781-555-7767 | 01/08/2012 |
| GZ01      | Gregory   | Zach       | 7 Moose Head Rd.  | Dummer       | NH    | 03588       | 603-555-8765 | 11/04/2012 |
| KS01      | Kiley     | Susan      | 943 Oakton Rd.    | Jaffrey      | NH    | 03452       | 603-555-1230 | 04/08/2013 |
| KS02      | Kelly     | Sam        | 9 Congaree Ave.   | Fraconia     | NH    | 03580       | 603-555-0003 | 06/10/2013 |
| MR01      | Marston   | Ray        | 24 Shenandoah Rd. | Springfield  | MA    | 01101       | 781-555-2323 | 09/14/2015 |
| RH01      | Rowan     | Hal        | 12 Heather Rd.    | Mount Desert | ME    | 04660       | 207-555-9009 | 06/02/2014 |
| SL01      | Stevens   | Lori       | 15 Riverton Rd.   | Coventry     | VT    | 05825       | 802-555-3339 | 09/05/2014 |
| UG01      | Unser     | Glory      | 342 Pineview St.  | Danbury      | CT    | 06810       | 203-555-8534 | 02/02/2015 |
| VW01      | Warner    | Brian      | 1 Main St.        | Midvale      | UT    | 84047       | 801-555-1234 | 10/31/2018 |

10 rows selected. 0.00 seconds

**/\* Question 5 \*/**

```
CREATE OR REPLACE PROCEDURE RESV_CUST_NUM
(I_CUSTOMER_NUM IN RESERVATION.CUSTOMER_NUM%TYPE)
AS

I_RESERVATION_ID RESERVATION.RESERVATION_ID%TYPE;
I_TRIP_ID RESERVATION.TRIP_ID%TYPE;
I_NUM_PERSONS RESERVATION.NUM_PERSONS%TYPE;
I_TRIP_PRICE RESERVATION.TRIP_PRICE%TYPE;

CURSOR RESGROUP IS
SELECT RESERVATION_ID, TRIP_ID, NUM_PERSONS, TRIP_PRICE
FROM RESERVATION
WHERE CUSTOMER_NUM = I_CUSTOMER_NUM;
```

```

BEGIN

OPEN RESGROUP;

LOOP
  FETCH RESGROUP INTO I_RESERVATION_ID, I_TRIP_ID, I_NUM_PERSONS, I_TRIP_PRICE;
  EXIT WHEN RESGROUP%NOTFOUND;
  DBMS_OUTPUT.PUT_LINE (I_RESERVATION_ID || ', ' || I_TRIP_ID || ', ' || I_NUM_PERSONS || ', ' || I_TRIP_PRICE);
END LOOP;

CLOSE RESGROUP;
END;
/

```

| Number | Elapsed | Statement   | Feedback           | Rows |
|--------|---------|---|--------------------|------|
| 1      | 0.03    | CREATE OR REPLACE<br>PROCEDURE<br>RESV_CUST_NUM<br>(I_CUSTOMER_NU | Procedure created. | 0    |

Statements Processed

```

1
Successful
1
With Errors
0

```

```

BEGIN
RESV_CUST_NUM ('115');
END;
/

```

1600012, 1, 4, 15

Statement processed. 0.01 seconds

**/\* Question 6A \*/**

```

Public Function GuideDelete (I_GUIDE_NUM)
  Dim strSQL As String

  strSQL = "DELETE FROM GUIDE WHERE GUIDE_NUM = "
  strSQL = strSQL & I_GUIDE_NUM
  strSQL = strSQL & ""

  DoCmd.RunSQL strSQL

End Function

```



?GuideDelete("KS02")

**/\* Question 6B \*/**

Public Function GuideUpdate (I\_GUIDE\_LAST, I\_GUIDE\_NUM)

Dim strSQL As String

strSQL = "UPDATE GUIDE SET GUIDE\_LAST = ""

strSQL = strSQL & I\_GUIDE\_LAST

strSQL = strSQL & ' WHERE GUIDE\_NUM = ""

strSQL = strSQL & I\_GUIDE\_NUM

strSQL = strSQL & """"

DoCmd.RunSQL strSQL

End Function

?GuideUpdate("BR01", "Boyers")

**/\* Question 6C \*/**

Public Function FindReservations (I\_CUSTOMER\_NUM)

Dim rs As New ADODB.Recordset

Dim cnn as ADODB.Connection

Dim strSQL As String

Set cnn = Latreille\_Shelley\_A08.Connection

strSQL = "SELECT RESERVATION\_ID, TRIP\_ID, TRIP\_DATE, NUM\_PERSONS, TRIP\_PRICE  
FROM RESERVATION WHERE CUSTOMER\_NUM = ""

strSQL = strSQL & I\_CUSTOMER\_NUM

strSQL = strSQL & "";"

rs.Open strSQL, cnn, adOpenStatic, , adCmdText

Do Until rs.EOF

Debug.Print (rs!RESERVATION\_ID & " " & !TRIP\_ID & " " & !TRIP\_DATE & " " & !NUM\_PERSONS & " " & !TRIP\_PRICE)

rs.MoveNext

Loop

End Function

?FindReservations("121")

**/\* Question 7 \*/**

CREATE OR REPLACE PROCEDURE UPDT\_MAX\_GRP

(I\_TRIP\_ID IN TRIP.TRIP\_ID%TYPE,

I\_MAX\_GRP\_SIZE IN TRIP.MAX\_GRP\_SIZE%TYPE)

AS

```
BEGIN  
UPDATE TRIP  
SET MAX_GRP_SIZE = I_MAX_GRP_SIZE  
WHERE TRIP_ID = I_TRIP_ID;
```

END;

/

| Number | Elapsed | Statement   | Feedback           | Rows |
|--------|---------|---|--------------------|------|
| 1      | 0.02    | CREATE OR REPLACE<br>PROCEDURE<br>UPDT_MAX_GRP<br>(I_TRIP_ID IN T | Procedure created. | 0    |

Statements Processed

1

Successful

1

With Errors

0

BEGIN

```
UPDT_MAX_GRP ('21', '15');
```

END;

/

Statement processed. 0.01 seconds

```
SELECT *
```

```
FROM TRIP;
```

| TRIP_ID | TRIP_NAME                | START_LOCATION    | STATE | DISTANCE | MAX_GRP_SIZE | TYPE     | SEASON      | TOTAL_PERSONS |
|---------|--------------------------|-------------------|-------|----------|--------------|----------|-------------|---------------|
| 1       | Arethusa Falls           | Harts Location    | NH    | 5        | 10           | Hiking   | Summer      | -             |
| 2       | Mt Ascutney - North Peak | Weathersfield     | VT    | 5        | 6            | Hiking   | Late Spring | -             |
| 3       | Mt Ascutney - West Peak  | Weathersfield     | VT    | 6        | 10           | Hiking   | Early Fall  | -             |
| 4       | Bradbury Mountain Ride   | Lewiston-Auburn   | ME    | 25       | 8            | Biking   | Early Fall  | -             |
| 5       | Baldpate Mountain        | North Newry       | ME    | 6        | 10           | Hiking   | Late Spring | -             |
| 6       | Blueberry Mountain       | Batchelders Grant | ME    | 8        | 8            | Hiking   | Early Fall  | -             |
| 7       | Bloomfield - Maidstone   | Bloomfield        | CT    | 10       | 6            | Paddling | Late Spring | -             |
| 8       | Black Pond               | Lincoln           | NH    | 8        | 12           | Hiking   | Summer      | -             |

|    |                                     |                 |    |    |    |          |             |   |
|----|-------------------------------------|-----------------|----|----|----|----------|-------------|---|
| 9  | Big Rock Cave                       | Tamworth        | NH | 6  | 10 | Hiking   | Summer      | - |
| 10 | Mt. Cardigan - Firescrew            | Orange          | NH | 7  | 8  | Hiking   | Summer      | - |
| 11 | Chocorua Lake Tour                  | Tamworth        | NH | 12 | 15 | Paddling | Summer      | - |
| 12 | Cadillac Mountain Ride              | Bar Harbor      | ME | 8  | 16 | Biking   | Early Fall  | - |
| 13 | Cadillac Mountain                   | Bar Harbor      | ME | 7  | 8  | Hiking   | Late Spring | - |
| 14 | Cannon Mtn                          | Franconia       | NH | 6  | 6  | Hiking   | Early Fall  | - |
| 15 | Crawford Path<br>Presidentials Hike | Crawford Notch  | NH | 16 | 4  | Hiking   | Summer      | - |
| 16 | Cherry Pond                         | Whitefield      | NH | 6  | 16 | Hiking   | Spring      | - |
| 17 | Huguenot Head Hike                  | Bar Harbor      | ME | 5  | 10 | Hiking   | Early Fall  | - |
| 18 | Low Bald Spot Hike                  | Pinkam Notch    | NH | 8  | 6  | Hiking   | Early Fall  | - |
| 19 | Mason's Farm                        | North Stratford | CT | 12 | 7  | Paddling | Late Spring | - |
| 20 | Lake Mephremagog Tour               | Newport         | VT | 8  | 15 | Paddling | Late Spring | - |
| 21 | Long Pond                           | Rutland         | MA | 8  | 15 | Hiking   | Summer      | - |
| 22 | Long Pond Tour                      | Greenville      | ME | 12 | 10 | Paddling | Summer      | - |
| 23 | Lower Pond Tour                     | Poland          | ME | 8  | 15 | Paddling | Late Spring | - |
| 24 | Mt Adams                            | Randolph        | NH | 9  | 6  | Hiking   | Summer      | - |
| 25 | Mount Battie Ride                   | Camden          | ME | 20 | 8  | Biking   | Early Fall  | - |
| 26 | Mount Cardigan Hike                 | Cardigan        | NH | 4  | 16 | Hiking   | Late Fall   | - |
| 27 | Mt. Chocorua                        | Albany          | NH | 6  | 10 | Hiking   | Spring      | - |
| 28 | Mount Garfield Hike                 | Woodstock       | NH | 5  | 10 | Hiking   | Early Fall  | - |
| 29 | Metacomet-Monadnock Trail Hike      | Pelham          | MA | 10 | 12 | Hiking   | Late Spring | - |
| 30 | McLennan Reservation Hike           | Tyringham       | MA | 6  | 16 | Hiking   | Summer      | - |
| 31 | Missisquoi River - VT               | Lowell          | VT | 12 | 10 | Paddling | Summer      | - |

|    |                                 |                     |    |    |    |          |              |   |
|----|---------------------------------|---------------------|----|----|----|----------|--------------|---|
| 32 | Northern Forest Canoe Trail     | Stark               | NH | 15 | 10 | Paddling | Summer       | - |
| 33 | Park Loop Ride                  | Mount Desert Island | ME | 27 | 8  | Biking   | Late Spring  | - |
| 34 | Pontook Reservoir Tour          | Dummer              | NH | 15 | 14 | Paddling | Late Spring  | - |
| 35 | Pisgah State Park Ride          | Northborough        | NH | 12 | 10 | Biking   | Summer       | - |
| 36 | Pondicherry Trail Ride          | White Mountains     | NH | 15 | 16 | Biking   | Late Spring  | - |
| 37 | Seal Beach Harbor               | Bar Harbor          | ME | 5  | 16 | Hiking   | Early Spring | - |
| 38 | Sawyer River Ride               | Mount Carrigain     | NH | 10 | 18 | Biking   | Early Fall   | - |
| 39 | Welch and Dickey Mountains Hike | Thorton             | NH | 5  | 10 | Hiking   | Summer       | - |
| 40 | Wachusett Mountain              | Princeton           | MA | 8  | 8  | Hiking   | Early Spring | - |
| 41 | Westfield River Loop            | Fort Fairfield      | ME | 20 | 10 | Biking   | Late Spring  | - |
| 86 | Westfield River Loop            | Fort Fairfield      | ME | 20 | 10 | Biking   | Late Spring  | 2 |

42 rows selected. 0.02 seconds

**/\* Question 8A \*/**

INSERT INTO RESERVATION

VALUES

('1600080',86,'07-25-2016',6,60.00,15.00,'104');

ALTER TABLE TRIP

ADD TOTAL\_PERSONS DECIMAL(3,0);

INSERT INTO TRIP

VALUES

(86,'Westfield River Loop','Fort Fairfield','ME',20,10,'Biking','Late Spring', 2);

CREATE OR REPLACE TRIGGER ADD\_RESERVATION

AFTER INSERT ON RESERVATION FOR EACH ROW

BEGIN

UPDATE TRIP

SET TOTAL\_PERSONS = TOTAL\_PERSONS + :NEW.NUM\_PERSONS

WHERE TRIP\_ID = :NEW.TRIP\_ID;

END;

/

| Number | Elapsed | Statement  | Feedback         | Rows |
|--------|---------|--|------------------|------|
| 1      | 0.06    | CREATE OR REPLACE TRIGGER ADD_RESERVATION AFTER INSERT O | Trigger created. | 0    |

Statements Processed

1

Successful

1

With Errors

0

SELECT \*

FROM RESERVATION;

| RESERVATION_ID | TRIP_ID | TRIP_DATE  | NUM_PERSONS | TRIP_PRICE | OTHER_FEES | CUSTOMER_NUM |
|----------------|---------|------------|-------------|------------|------------|--------------|
| 1600001        | 40      | 03/26/2016 | 2           | 55         | 0          | 101          |
| 1600002        | 21      | 06/08/2016 | 2           | 95         | 0          | 101          |
| 1600003        | 28      | 09/12/2016 | 1           | 35         | 0          | 103          |
| 1600004        | 26      | 10/16/2016 | 4           | 45         | 15         | 104          |
| 1600005        | 39      | 06/25/2016 | 5           | 55         | 0          | 105          |
| 1600006        | 32      | 06/18/2016 | 1           | 80         | 20         | 106          |
| 1600007        | 22      | 07/09/2016 | 8           | 75         | 10         | 107          |
| 1600008        | 28      | 09/12/2016 | 2           | 35         | 0          | 108          |
| 1600009        | 38      | 09/11/2016 | 2           | 90         | 40         | 109          |
| 1600010        | 2       | 05/14/2016 | 3           | 25         | 0          | 102          |
| 1600011        | 3       | 09/15/2016 | 3           | 25         | 0          | 102          |
| 1600012        | 1       | 06/12/2016 | 4           | 15         | 0          | 115          |
| 1600013        | 8       | 07/09/2016 | 1           | 20         | 5          | 116          |
| 1600014        | 12      | 10/01/2016 | 2           | 40         | 5          | 119          |
| 1600015        | 10      | 07/23/2016 | 1           | 20         | 0          | 120          |
| 1600016        | 11      | 07/23/2016 | 6           | 75         | 15         | 121          |
| 1600017        | 39      | 06/18/2016 | 3           | 20         | 5          | 122          |
| 1600018        | 38      | 09/18/2016 | 4           | 85         | 15         | 126          |
| 1600019        | 25      | 08/29/2016 | 2           | 110        | 25         | 124          |
| 1600020        | 28      | 08/27/2016 | 2           | 35         | 10         | 124          |
| 1600021        | 32      | 06/11/2016 | 3           | 90         | 20         | 112          |
| 1600022        | 21      | 06/08/2016 | 1           | 95         | 25         | 119          |
| 1600024        | 38      | 09/11/2016 | 1           | 70         | 30         | 121          |
| 1600025        | 38      | 09/11/2016 | 2           | 70         | 45         | 125          |
| 1600026        | 12      | 10/01/2016 | 2           | 40         | 0          | 126          |
| 1600029        | 4       | 09/19/2016 | 4           | 105        | 25         | 120          |
| 1600030        | 15      | 07/25/2016 | 6           | 60         | 15         | 104          |
| 1600080        | 86      | 07/25/2016 | 6           | 60         | 15         | 104          |

28 rows selected. 0.01 seconds

SELECT \*

FROM TRIP;

| TRIP_ID | TRIP_NAME                           | START_LOCATION    | STATE | DISTANCE | MAX_GRP_SIZE | TYPE     | SEASON      | TOTAL_PERSONS |
|---------|-------------------------------------|-------------------|-------|----------|--------------|----------|-------------|---------------|
| 1       | Arethusa Falls                      | Harts Location    | NH    | 5        | 10           | Hiking   | Summer      | -             |
| 2       | Mt Ascutney - North Peak            | Weathersfield     | VT    | 5        | 6            | Hiking   | Late Spring | -             |
| 3       | Mt Ascutney - West Peak             | Weathersfield     | VT    | 6        | 10           | Hiking   | Early Fall  | -             |
| 4       | Bradbury Mountain Ride              | Lewiston-Auburn   | ME    | 25       | 8            | Biking   | Early Fall  | -             |
| 5       | Baldpate Mountain                   | North Newry       | ME    | 6        | 10           | Hiking   | Late Spring | -             |
| 6       | Blueberry Mountain                  | Batchelders Grant | ME    | 8        | 8            | Hiking   | Early Fall  | -             |
| 7       | Bloomfield - Maidstone              | Bloomfield        | CT    | 10       | 6            | Paddling | Late Spring | -             |
| 8       | Black Pond                          | Lincoln           | NH    | 8        | 12           | Hiking   | Summer      | -             |
| 9       | Big Rock Cave                       | Tamworth          | NH    | 6        | 10           | Hiking   | Summer      | -             |
| 10      | Mt. Cardigan - Firescrew            | Orange            | NH    | 7        | 8            | Hiking   | Summer      | -             |
| 11      | Chocorua Lake Tour                  | Tamworth          | NH    | 12       | 15           | Paddling | Summer      | -             |
| 12      | Cadillac Mountain Ride              | Bar Harbor        | ME    | 8        | 16           | Biking   | Early Fall  | -             |
| 13      | Cadillac Mountain                   | Bar Harbor        | ME    | 7        | 8            | Hiking   | Late Spring | -             |
| 14      | Cannon Mtn                          | Franconia         | NH    | 6        | 6            | Hiking   | Early Fall  | -             |
| 15      | Crawford Path<br>Presidentials Hike | Crawford Notch    | NH    | 16       | 4            | Hiking   | Summer      | -             |
| 16      | Cherry Pond                         | Whitefield        | NH    | 6        | 16           | Hiking   | Spring      | -             |
| 17      | Huguenot Head Hike                  | Bar Harbor        | ME    | 5        | 10           | Hiking   | Early Fall  | -             |
| 18      | Low Bald Spot Hike                  | Pinkam Notch      | NH    | 8        | 6            | Hiking   | Early Fall  | -             |
| 19      | Mason's Farm                        | North Stratford   | CT    | 12       | 7            | Paddling | Late Spring | -             |
| 20      | Lake Mephremagog Tour               | Newport           | VT    | 8        | 15           | Paddling | Late Spring | -             |
| 21      | Long Pond                           | Rutland           | MA    | 8        | 15           | Hiking   | Summer      | -             |
| 22      | Long Pond Tour                      | Greenville        | ME    | 12       | 10           | Paddling | Summer      | -             |
| 23      | Lower Pond Tour                     | Poland            | ME    | 8        | 15           | Paddling | Late Spring | -             |

|    |                                 |                     |    |    |    |          |              |   |
|----|---------------------------------|---------------------|----|----|----|----------|--------------|---|
| 24 | Mt Adams                        | Randolph            | NH | 9  | 6  | Hiking   | Summer       | - |
| 25 | Mount Battie Ride               | Camden              | ME | 20 | 8  | Biking   | Early Fall   | - |
| 26 | Mount Cardigan Hike             | Cardigan            | NH | 4  | 16 | Hiking   | Late Fall    | - |
| 27 | Mt. Chocorua                    | Albany              | NH | 6  | 10 | Hiking   | Spring       | - |
| 28 | Mount Garfield Hike             | Woodstock           | NH | 5  | 10 | Hiking   | Early Fall   | - |
| 29 | Metacomet-Monadnock Trail Hike  | Pelham              | MA | 10 | 12 | Hiking   | Late Spring  | - |
| 30 | McLennan Reservation Hike       | Tyringham           | MA | 6  | 16 | Hiking   | Summer       | - |
| 31 | Missisquoi River - VT           | Lowell              | VT | 12 | 10 | Paddling | Summer       | - |
| 32 | Northern Forest Canoe Trail     | Stark               | NH | 15 | 10 | Paddling | Summer       | - |
| 33 | Park Loop Ride                  | Mount Desert Island | ME | 27 | 8  | Biking   | Late Spring  | - |
| 34 | Pontook Reservoir Tour          | Dummer              | NH | 15 | 14 | Paddling | Late Spring  | - |
| 35 | Pisgah State Park Ride          | Northborough        | NH | 12 | 10 | Biking   | Summer       | - |
| 36 | Pondicherry Trail Ride          | White Mountains     | NH | 15 | 16 | Biking   | Late Spring  | - |
| 37 | Seal Beach Harbor               | Bar Harbor          | ME | 5  | 16 | Hiking   | Early Spring | - |
| 38 | Sawyer River Ride               | Mount Carrigain     | NH | 10 | 18 | Biking   | Early Fall   | - |
| 39 | Welch and Dickey Mountains Hike | Thorton             | NH | 5  | 10 | Hiking   | Summer       | - |
| 40 | Wachusett Mountain              | Princeton           | MA | 8  | 8  | Hiking   | Early Spring | - |
| 41 | Westfield River Loop            | Fort Fairfield      | ME | 20 | 10 | Biking   | Late Spring  | - |
| 86 | Westfield River Loop            | Fort Fairfield      | ME | 20 | 10 | Biking   | Late Spring  | 8 |

42 rows selected. 0.01 seconds

**/\* Question 8B \*/**

UPDATE RESERVATION

SET NUM\_PERSONS = 4

WHERE TRIP\_ID = 86;

1 row(s) updated. 0.03 seconds

```
CREATE OR REPLACE TRIGGER UPDATE_RESERVATION
AFTER UPDATE ON RESERVATION FOR EACH ROW
BEGIN
UPDATE TRIP
SET TOTAL_PERSONS = (:NEW.NUM_PERSONS - :OLD.NUM_PERSONS) + TOTAL_PERSONS
WHERE TRIP_ID = :NEW.TRIP_ID;
END;
//
```

| Number | Elapsed | Statement   | Feedback         | Rows |
|--------|---------|---|------------------|------|
| 1      | 0.12    | CREATE OR REPLACE<br>TRIGGER<br>UPDATE_RESERVATION<br>AFTER UPDAT | Trigger created. | 0    |

Statements Processed

1

Successful

1

With Errors

0

```
SELECT *
FROM RESERVATION;
```

| RESERVATION_ID | TRIP_ID | TRIP_DATE  | NUM_PERSONS | TRIP_PRICE | OTHER_FEES | CUSTOMER_NUM |
|----------------|---------|------------|-------------|------------|------------|--------------|
| 1600001        | 40      | 03/26/2016 | 2           | 55         | 0          | 101          |
| 1600002        | 21      | 06/08/2016 | 2           | 95         | 0          | 101          |
| 1600003        | 28      | 09/12/2016 | 1           | 35         | 0          | 103          |
| 1600004        | 26      | 10/16/2016 | 4           | 45         | 15         | 104          |
| 1600005        | 39      | 06/25/2016 | 5           | 55         | 0          | 105          |
| 1600006        | 32      | 06/18/2016 | 1           | 80         | 20         | 106          |
| 1600007        | 22      | 07/09/2016 | 8           | 75         | 10         | 107          |
| 1600008        | 28      | 09/12/2016 | 2           | 35         | 0          | 108          |
| 1600009        | 38      | 09/11/2016 | 2           | 90         | 40         | 109          |
| 1600010        | 2       | 05/14/2016 | 3           | 25         | 0          | 102          |
| 1600011        | 3       | 09/15/2016 | 3           | 25         | 0          | 102          |
| 1600012        | 1       | 06/12/2016 | 4           | 15         | 0          | 115          |
| 1600013        | 8       | 07/09/2016 | 1           | 20         | 5          | 116          |
| 1600014        | 12      | 10/01/2016 | 2           | 40         | 5          | 119          |
| 1600015        | 10      | 07/23/2016 | 1           | 20         | 0          | 120          |
| 1600016        | 11      | 07/23/2016 | 6           | 75         | 15         | 121          |
| 1600017        | 39      | 06/18/2016 | 3           | 20         | 5          | 122          |
| 1600018        | 38      | 09/18/2016 | 4           | 85         | 15         | 126          |
| 1600019        | 25      | 08/29/2016 | 2           | 110        | 25         | 124          |
| 1600020        | 28      | 08/27/2016 | 2           | 35         | 10         | 124          |
| 1600021        | 32      | 06/11/2016 | 3           | 90         | 20         | 112          |
| 1600022        | 21      | 06/08/2016 | 1           | 95         | 25         | 119          |



|         |    |            |   |     |    |     |
|---------|----|------------|---|-----|----|-----|
| 1600024 | 38 | 09/11/2016 | 1 | 70  | 30 | 121 |
| 1600025 | 38 | 09/11/2016 | 2 | 70  | 45 | 125 |
| 1600026 | 12 | 10/01/2016 | 2 | 40  | 0  | 126 |
| 1600029 | 4  | 09/19/2016 | 4 | 105 | 25 | 120 |
| 1600030 | 15 | 07/25/2016 | 6 | 60  | 15 | 104 |
| 1600080 | 86 | 07/25/2016 | 4 | 60  | 15 | 104 |

28 rows selected. 0.02 seconds

SELECT \*  
FROM TRIP;

| TRIP_ID | TRIP_NAME                        | START_LOCATION    | STATE | DISTANCE | MAX_GRP_SIZE | TYPE     | SEASON      | TOTAL_PERSONS |
|---------|----------------------------------|-------------------|-------|----------|--------------|----------|-------------|---------------|
| 1       | Arethusa Falls                   | Harts Location    | NH    | 5        | 10           | Hiking   | Summer      | -             |
| 2       | Mt Ascutney - North Peak         | Weathersfield     | VT    | 5        | 6            | Hiking   | Late Spring | -             |
| 3       | Mt Ascutney - West Peak          | Weathersfield     | VT    | 6        | 10           | Hiking   | Early Fall  | -             |
| 4       | Bradbury Mountain Ride           | Lewiston-Auburn   | ME    | 25       | 8            | Biking   | Early Fall  | -             |
| 5       | Baldpate Mountain                | North Newry       | ME    | 6        | 10           | Hiking   | Late Spring | -             |
| 6       | Blueberry Mountain               | Batchelders Grant | ME    | 8        | 8            | Hiking   | Early Fall  | -             |
| 7       | Bloomfield - Maidstone           | Bloomfield        | CT    | 10       | 6            | Paddling | Late Spring | -             |
| 8       | Black Pond                       | Lincoln           | NH    | 8        | 12           | Hiking   | Summer      | -             |
| 9       | Big Rock Cave                    | Tamworth          | NH    | 6        | 10           | Hiking   | Summer      | -             |
| 10      | Mt. Cardigan - Firescrew         | Orange            | NH    | 7        | 8            | Hiking   | Summer      | -             |
| 11      | Chocorua Lake Tour               | Tamworth          | NH    | 12       | 15           | Paddling | Summer      | -             |
| 12      | Cadillac Mountain Ride           | Bar Harbor        | ME    | 8        | 16           | Biking   | Early Fall  | -             |
| 13      | Cadillac Mountain                | Bar Harbor        | ME    | 7        | 8            | Hiking   | Late Spring | -             |
| 14      | Cannon Mtn                       | Franconia         | NH    | 6        | 6            | Hiking   | Early Fall  | -             |
| 15      | Crawford Path Presidentials Hike | Crawford Notch    | NH    | 16       | 4            | Hiking   | Summer      | -             |
| 16      | Cherry Pond                      | Whitefield        | NH    | 6        | 16           | Hiking   | Spring      | -             |
| 17      | Huguenot Head Hike               | Bar Harbor        | ME    | 5        | 10           | Hiking   | Early Fall  | -             |

|    |                                 |                     |    |    |    |          |              |   |
|----|---------------------------------|---------------------|----|----|----|----------|--------------|---|
| 18 | Low Bald Spot Hike              | Pinkam Notch        | NH | 8  | 6  | Hiking   | Early Fall   | - |
| 19 | Mason's Farm                    | North Stratford     | CT | 12 | 7  | Paddling | Late Spring  | - |
| 20 | Lake Mephremagog Tour           | Newport             | VT | 8  | 15 | Paddling | Late Spring  | - |
| 21 | Long Pond                       | Rutland             | MA | 8  | 15 | Hiking   | Summer       | - |
| 22 | Long Pond Tour                  | Greenville          | ME | 12 | 10 | Paddling | Summer       | - |
| 23 | Lower Pond Tour                 | Poland              | ME | 8  | 15 | Paddling | Late Spring  | - |
| 24 | Mt Adams                        | Randolph            | NH | 9  | 6  | Hiking   | Summer       | - |
| 25 | Mount Battie Ride               | Camden              | ME | 20 | 8  | Biking   | Early Fall   | - |
| 26 | Mount Cardigan Hike             | Cardigan            | NH | 4  | 16 | Hiking   | Late Fall    | - |
| 27 | Mt. Chocorua                    | Albany              | NH | 6  | 10 | Hiking   | Spring       | - |
| 28 | Mount Garfield Hike             | Woodstock           | NH | 5  | 10 | Hiking   | Early Fall   | - |
| 29 | Metacomet-Monadnock Trail Hike  | Pelham              | MA | 10 | 12 | Hiking   | Late Spring  | - |
| 30 | McLennan Reservation Hike       | Tyringham           | MA | 6  | 16 | Hiking   | Summer       | - |
| 31 | Missisquoi River - VT           | Lowell              | VT | 12 | 10 | Paddling | Summer       | - |
| 32 | Northern Forest Canoe Trail     | Stark               | NH | 15 | 10 | Paddling | Summer       | - |
| 33 | Park Loop Ride                  | Mount Desert Island | ME | 27 | 8  | Biking   | Late Spring  | - |
| 34 | Pontook Reservoir Tour          | Dummer              | NH | 15 | 14 | Paddling | Late Spring  | - |
| 35 | Pisgah State Park Ride          | Northborough        | NH | 12 | 10 | Biking   | Summer       | - |
| 36 | Pondicherry Trail Ride          | White Mountains     | NH | 15 | 16 | Biking   | Late Spring  | - |
| 37 | Seal Beach Harbor               | Bar Harbor          | ME | 5  | 16 | Hiking   | Early Spring | - |
| 38 | Sawyer River Ride               | Mount Carrigain     | NH | 10 | 18 | Biking   | Early Fall   | - |
| 39 | Welch and Dickey Mountains Hike | Thorton             | NH | 5  | 10 | Hiking   | Summer       | - |

|    |                      |                |    |    |    |        |              |   |
|----|----------------------|----------------|----|----|----|--------|--------------|---|
| 40 | Wachusett Mountain   | Princeton      | MA | 8  | 8  | Hiking | Early Spring | - |
| 41 | Westfield River Loop | Fort Fairfield | ME | 20 | 10 | Biking | Late Spring  | - |
| 86 | Westfield River Loop | Fort Fairfield | ME | 20 | 10 | Biking | Late Spring  | 6 |

42 rows selected. 0.01 seconds

**/\* Question 8C \*/**

```
CREATE OR REPLACE TRIGGER DELETE_RESERVATION
AFTER DELETE ON RESERVATION FOR EACH ROW
BEGIN
UPDATE TRIP
SET TOTAL_PERSONS = TOTAL_PERSONS - :OLD.NUM_PERSONS
WHERE TRIP_ID = :OLD.TRIP_ID;
END;
/
```

| Number | Elapsed | Statement  | Feedback         | Rows |
|--------|---------|--|------------------|------|
| 1      | 0.11    | CREATE OR REPLACE TRIGGER DELETE_RESERVATION AFTER DELET | Trigger created. | 0    |

Statements Processed

1  
Successful  
1  
With Errors  
0

```
DELETE FROM RESERVATION
WHERE TRIP_ID = 86;
```

1 row(s) deleted. 0.01 seconds

```
SELECT *
FROM RESERVATION;
```

| RESERVATION_ID | TRIP_ID | TRIP_DATE  | NUM_PERSONS | TRIP_PRICE | OTHER_FEES | CUSTOMER_NUM |
|----------------|---------|------------|-------------|------------|------------|--------------|
| 1600001        | 40      | 03/26/2016 | 2           | 55         | 0          | 101          |
| 1600002        | 21      | 06/08/2016 | 2           | 95         | 0          | 101          |
| 1600003        | 28      | 09/12/2016 | 1           | 35         | 0          | 103          |
| 1600004        | 26      | 10/16/2016 | 4           | 45         | 15         | 104          |
| 1600005        | 39      | 06/25/2016 | 5           | 55         | 0          | 105          |
| 1600006        | 32      | 06/18/2016 | 1           | 80         | 20         | 106          |
| 1600007        | 22      | 07/09/2016 | 8           | 75         | 10         | 107          |
| 1600008        | 28      | 09/12/2016 | 2           | 35         | 0          | 108          |
| 1600009        | 38      | 09/11/2016 | 2           | 90         | 40         | 109          |

|         |    |            |   |     |    |     |
|---------|----|------------|---|-----|----|-----|
| 1600010 | 2  | 05/14/2016 | 3 | 25  | 0  | 102 |
| 1600011 | 3  | 09/15/2016 | 3 | 25  | 0  | 102 |
| 1600012 | 1  | 06/12/2016 | 4 | 15  | 0  | 115 |
| 1600013 | 8  | 07/09/2016 | 1 | 20  | 5  | 116 |
| 1600014 | 12 | 10/01/2016 | 2 | 40  | 5  | 119 |
| 1600015 | 10 | 07/23/2016 | 1 | 20  | 0  | 120 |
| 1600016 | 11 | 07/23/2016 | 6 | 75  | 15 | 121 |
| 1600017 | 39 | 06/18/2016 | 3 | 20  | 5  | 122 |
| 1600018 | 38 | 09/18/2016 | 4 | 85  | 15 | 126 |
| 1600019 | 25 | 08/29/2016 | 2 | 110 | 25 | 124 |
| 1600020 | 28 | 08/27/2016 | 2 | 35  | 10 | 124 |
| 1600021 | 32 | 06/11/2016 | 3 | 90  | 20 | 112 |
| 1600022 | 21 | 06/08/2016 | 1 | 95  | 25 | 119 |
| 1600024 | 38 | 09/11/2016 | 1 | 70  | 30 | 121 |
| 1600025 | 38 | 09/11/2016 | 2 | 70  | 45 | 125 |
| 1600026 | 12 | 10/01/2016 | 2 | 40  | 0  | 126 |
| 1600029 | 4  | 09/19/2016 | 4 | 105 | 25 | 120 |
| 1600030 | 15 | 07/25/2016 | 6 | 60  | 15 | 104 |

27 rows selected. 0.00 seconds

SELECT \*  
FROM TRIP;

| TRIP_ID | TRIP_NAME                | START_LOCATION    | STATE | DISTANCE | MAX_GRP_SIZE | TYPE     | SEASON      | TOTAL_PERSONS |
|---------|--------------------------|-------------------|-------|----------|--------------|----------|-------------|---------------|
| 1       | Arethusa Falls           | Harts Location    | NH    | 5        | 10           | Hiking   | Summer      | -             |
| 2       | Mt Ascutney - North Peak | Weathersfield     | VT    | 5        | 6            | Hiking   | Late Spring | -             |
| 3       | Mt Ascutney - West Peak  | Weathersfield     | VT    | 6        | 10           | Hiking   | Early Fall  | -             |
| 4       | Bradbury Mountain Ride   | Lewiston-Auburn   | ME    | 25       | 8            | Biking   | Early Fall  | -             |
| 5       | Baldpate Mountain        | North Newry       | ME    | 6        | 10           | Hiking   | Late Spring | -             |
| 6       | Blueberry Mountain       | Batchelders Grant | ME    | 8        | 8            | Hiking   | Early Fall  | -             |
| 7       | Bloomfield - Maidstone   | Bloomfield        | CT    | 10       | 6            | Paddling | Late Spring | -             |
| 8       | Black Pond               | Lincoln           | NH    | 8        | 12           | Hiking   | Summer      | -             |
| 9       | Big Rock Cave            | Tamworth          | NH    | 6        | 10           | Hiking   | Summer      | -             |
| 10      | Mt. Cardigan - Firescrew | Orange            | NH    | 7        | 8            | Hiking   | Summer      | -             |
| 11      | Chocorua Lake Tour       | Tamworth          | NH    | 12       | 15           | Paddling | Summer      | -             |

|    |                                  |                     |    |    |    |          |             |   |
|----|----------------------------------|---------------------|----|----|----|----------|-------------|---|
| 12 | Cadillac Mountain Ride           | Bar Harbor          | ME | 8  | 16 | Biking   | Early Fall  | - |
| 13 | Cadillac Mountain                | Bar Harbor          | ME | 7  | 8  | Hiking   | Late Spring | - |
| 14 | Cannon Mtn                       | Franconia           | NH | 6  | 6  | Hiking   | Early Fall  | - |
| 15 | Crawford Path Presidentials Hike | Crawford Notch      | NH | 16 | 4  | Hiking   | Summer      | - |
| 16 | Cherry Pond                      | Whitefield          | NH | 6  | 16 | Hiking   | Spring      | - |
| 17 | Huguenot Head Hike               | Bar Harbor          | ME | 5  | 10 | Hiking   | Early Fall  | - |
| 18 | Low Bald Spot Hike               | Pinkam Notch        | NH | 8  | 6  | Hiking   | Early Fall  | - |
| 19 | Mason's Farm                     | North Stratford     | CT | 12 | 7  | Paddling | Late Spring | - |
| 20 | Lake Mephrmagog Tour             | Newport             | VT | 8  | 15 | Paddling | Late Spring | - |
| 21 | Long Pond                        | Rutland             | MA | 8  | 15 | Hiking   | Summer      | - |
| 22 | Long Pond Tour                   | Greenville          | ME | 12 | 10 | Paddling | Summer      | - |
| 23 | Lower Pond Tour                  | Poland              | ME | 8  | 15 | Paddling | Late Spring | - |
| 24 | Mt Adams                         | Randolph            | NH | 9  | 6  | Hiking   | Summer      | - |
| 25 | Mount Battie Ride                | Camden              | ME | 20 | 8  | Biking   | Early Fall  | - |
| 26 | Mount Cardigan Hike              | Cardigan            | NH | 4  | 16 | Hiking   | Late Fall   | - |
| 27 | Mt. Chocorua                     | Albany              | NH | 6  | 10 | Hiking   | Spring      | - |
| 28 | Mount Garfield Hike              | Woodstock           | NH | 5  | 10 | Hiking   | Early Fall  | - |
| 29 | Metacomet-Monadnock Trail Hike   | Pelham              | MA | 10 | 12 | Hiking   | Late Spring | - |
| 30 | McLennan Reservation Hike        | Tyringham           | MA | 6  | 16 | Hiking   | Summer      | - |
| 31 | Missisquoi River - VT            | Lowell              | VT | 12 | 10 | Paddling | Summer      | - |
| 32 | Northern Forest Canoe Trail      | Stark               | NH | 15 | 10 | Paddling | Summer      | - |
| 33 | Park Loop Ride                   | Mount Desert Island | ME | 27 | 8  | Biking   | Late Spring | - |

|    |                                 |                 |    |    |    |          |              |   |
|----|---------------------------------|-----------------|----|----|----|----------|--------------|---|
| 34 | Pontook Reservoir Tour          | Dummer          | NH | 15 | 14 | Paddling | Late Spring  | - |
| 35 | Pisgah State Park Ride          | Northborough    | NH | 12 | 10 | Biking   | Summer       | - |
| 36 | Pondicherry Trail Ride          | White Mountains | NH | 15 | 16 | Biking   | Late Spring  | - |
| 37 | Seal Beach Harbor               | Bar Harbor      | ME | 5  | 16 | Hiking   | Early Spring | - |
| 38 | Sawyer River Ride               | Mount Carrigain | NH | 10 | 18 | Biking   | Early Fall   | - |
| 39 | Welch and Dickey Mountains Hike | Thorton         | NH | 5  | 10 | Hiking   | Summer       | - |
| 40 | Wachusett Mountain              | Princeton       | MA | 8  | 8  | Hiking   | Early Spring | - |
| 41 | Westfield River Loop            | Fort Fairfield  | ME | 20 | 10 | Biking   | Late Spring  | - |
| 86 | Westfield River Loop            | Fort Fairfield  | ME | 20 | 10 | Biking   | Late Spring  | 2 |

42 rows selected. 0.01 seconds

/\* Question 9 \*/

### LENGTH Function

The Oracle LENGTH function is used to return the length of a given string. If the string has the data type CHAR, then the length includes all trailing blanks. If a string is null, then this function will return null. In Oracle, the LENGTH function returns the length of a string in characters as defined by the input character set. In SQL Server, the LEN function can be used. The LEN function excludes trailing blanks. When applied to a CHAR column, Oracle LENGTH will return the maximum length of the column that is defined in CREATE TABLE. In SQL Server, LEN returns the actual data length. In Access, the Len Function (Length) returns a Long containing the number of characters in a string or the number of bytes required to store a variable. The Len function syntax has string and varname arguments. The string argument contains any valid string expression. If a string is Null, then Null will be returned. The varname argument contains any valid variable name. If the varname is Null, then Null will be returned. If the varname is a Variant, then Len treats it the same as a String and will always return the number of characters it contains. One of the two possible arguments will need to be specified. With user defined types, Len returns the size as it will be written to the file.

References:

<https://www.w3resource.com/oracle/character-functions/oracle-length-function.php>

<http://www.sqlines.com/oracle/functions/length>

<https://support.office.com/en-us/article/len-function-8282adcf-4e26-4ebd-87ed-73af04b0cf36>

### SUBSTR Function

In Oracle, the SUBSTR function returns the specified number (substring\_length) of characters from a particular position of a given string. SUBSTRB uses bytes instead of characters. If the position is 0, then it is treated as 1. If the position is positive, then the Oracle counts from the beginning of char to find the first character. If the position is negative, then

Oracle counts backward from the end of char. If substring\_length is omitted, then Oracle returns all characters to the end of char. If substring\_length is less than 1, then Oracle will return null. In SQL Server, the SUBSTRING function does not allow a negative start position to be specified and the substring length must be specified. The substring function is used to extract the characters in the string. The Substring function does not exist in Access, neither in query or VBA Code. The MS Access Substring LEFT Function is used to extract the characters from the string that began from the first characters at the left. The MS Access Substring RIGHT Function extracts the characters from a string that began from the characters located at the right. The MS Access Substring MID Function extracts characters from string data located in the middle of the string. The MS Access Substring INSTR Function is different than 3 functions listed above. It has more parameters and different functions, but it is still one of the substring function usages. Instead of extracting the characters from a string, it will search the “substring” and return the result as the position number of the substring.

References:

<https://www.w3resource.com/oracle/character-functions/oracle-substr-function.php>

<http://www.sqlines.com/oracle/functions/substr>

<https://database.access-templates.com/ms-access-substring-function.html>

### INITCAP Function

In Oracle, the INITCAP() function capitalizes the first letter of each word and changes all other letters to lowercase. Non-alphanumeric words are delimited by white space or characters that are not alphanumeric. In Oracle, INITCAP capitalizes the first letter of each word and makes all other letters in a string lowercase. Words are delimited by a space or any other non-alphanumeric letter. In SQL Server a user-defined function (UDF) can be used to implement this functionality. The Microsoft Access StrConv function returns a string converted as specified. The vbUpperCase converts the string to all uppercase. The vbLowerCase converts the string to all lowercase. The vbProperCase converts the first letter in every word to uppercase. All other characters will be left as lowercase. The vbProperCase is the most like the InitCap function in Oracle. The vbUnicode Converts the string to Unicode. The vbFromUnicode converts the string from Unicode to the default code page of the system.

References:

<https://www.w3resource.com/oracle/character-functions/oracle-initcap-function.php>

<http://www.sqlines.com/oracle/functions/initcap>

<https://www.techonthenet.com/access/functions/string/strconv.php>

### **/\* Question 9A \*/**

```
SELECT SUBSTR (TYPE, 0, 3) SUB_TYPE
FROM TRIP;
```

| SUB_TYPE |
|----------|
| Hik      |
| Hik      |
| Hik      |
| Bik      |
| Hik      |
| Hik      |
| Pad      |
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| Hik      |
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| Pad      |

|     |
|-----|
| Bik |
| Hik |
| Hik |
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**/\* Question 9B \*/**

```
SELECT SUBSTR (START_LOCATION, 4, 5) SUB_START_LOCATION
FROM TRIP;
```

| SUB_START_LOCATION |
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