

Data Changing Operations & String Operations

Session Objectives:

- ✓ Understand how to insert data into tables.
- ✚ Use `ALTER` statements to change table structures
- 👁 Use the `SHOW` and `USE` statements to inspect and interact with the database
- 📄 Common string functions: `LENGTH`, `TRIM`, `CONCAT`, `UPPER`, `LOWER`, `LEFT`, `RIGHT`, `REVERSE`, `REPLACE`, etc.
- ✂ Data Cleaning
- ✚ Data Manipulation
- 🔍 Substring Extraction

```

794 -- Adding a Country Column into Customers
795
796 -- Adding at the end of the Table
797 • ALTER TABLE Customers
798   ADD COLUMN Country VARCHAR(50);
799
800 • DESC Customers;
```

| Field | Type | Null | Key | Default | Extra |
|-----------------|-------------|------|-----|---------|-------|
| BirthDate | text | YES | | NULL | |
| MyUnknownColumn | text | YES | | NULL | |
| MaritalStatus | text | YES | | NULL | |
| Gender | text | YES | | NULL | |
| EmailAddress | text | YES | | NULL | |
| AnnualIncome | text | YES | | NULL | |
| TotalChildren | int | YES | | NULL | |
| EducationLevel | text | YES | | NULL | |
| Occupation | text | YES | | NULL | |
| HomeOwner | text | YES | | NULL | |
| Phone_number | bigint | YES | | NULL | |
| Country | varchar(50) | YES | | NULL | |

```
802 • SELECT * FROM Customers;
```

| Prefix | FirstName | LastName | BirthDate | MyUnknownColumn | MaritalStatus | Gender | EmailAddress | AnnualIncome | TotalChildren | EducationLevel | Occupation | HomeOwner | Phone_number | Country |
|--------|-----------|----------|------------|-----------------|---------------|--------|-----------------------------|--------------|---------------|----------------|--------------|-----------|--------------|---------|
| MR. | JON | YANG | 04/08/1966 | | M | M | jon24@learnsector.com | \$90,000 | 2 | Bachelors | Professional | Y | 6697921661 | NULL |
| MR. | EUGENE | HUANG | 14/05/1965 | | S | M | eugene10@learnsector.com | \$60,000 | 3 | Bachelors | Professional | N | 8586376955 | NULL |
| MR. | RUBEN | TORRES | 08/12/1965 | | M | M | ruben35@learnsector.com | \$60,000 | 3 | Bachelors | Professional | Y | 6528852745 | NULL |
| MS. | CHRISTY | ZHU | 15/02/1968 | | S | F | christy12@learnsector.com | | 0 | Bachelors | Professional | N | 3646568427 | NULL |
| MRS. | ELIZABETH | JOHNSON | 08/08/1968 | | S | F | elizabeth5@learnsector.com | \$80,000 | 5 | Bachelors | Professional | Y | 7132265883 | NULL |
| MR. | JULIO | RUIZ | 08/05/1965 | | S | M | julio1@learnsector.com | \$70,000 | 0 | Bachelors | Professional | Y | 1902716743 | NULL |
| MR. | MARCO | MEHTA | 05/09/1964 | | M | M | marco14@learnsector.com | \$60,000 | 3 | Bachelors | Professional | Y | 4203325209 | NULL |
| MRS. | ROBIN | VERHOFF | 07/07/1964 | | S | F | rob4@learnsector.com | \$60,000 | 4 | Bachelors | Professional | Y | 2866694333 | NULL |
| MR. | SHANNON | CARLSON | 04/01/1964 | | S | M | shannon38@learnsector.com | \$70,000 | 0 | Bachelors | Professional | N | 3417265787 | NULL |
| MS. | JACQUELYN | SUAREZ | 02/06/1964 | | S | F | jacquelyn20@learnsector.com | \$70,000 | 0 | Bachelors | Professional | N | 3166486176 | NULL |

Using Update Command, You can update Country Column with Where clause is NULL

```

804 • SET SQL_SAFE_UPDATES = 0;
805 -- Update Country to China Where CustomerKey = 11000
806 • UPDATE Customers
807     SET Country = "China"
808     WHERE CustomerKey = 11000;

```

| Result Grid | | Filter Rows: | | Export: | | Wrap Cell Contents: | | | | | | | | |
|-------------|-----------|--------------|------------|-----------------|---------------|---------------------|----------------------------|--------------|---------------|----------------|--------------|-----------|--------------|---------|
| Prefix | FirstName | LastName | BirthDate | MyUnknownColumn | MaritalStatus | Gender | EmailAddress | AnnualIncome | TotalChildren | EducationLevel | Occupation | HomeOwner | Phone_number | Country |
| MR. | JON | YANG | 04/08/1966 | | M | M | jon24@learnsector.com | \$90,000 | 2 | Bachelors | Professional | Y | 6697921661 | China |
| MR. | EUGENE | HUANG | 14/05/1965 | | S | M | eugene10@learnsector.com | \$60,000 | 3 | Bachelors | Professional | N | 8586376955 | China |
| MR. | RUBEN | TORRES | 08/12/1965 | | M | M | ruben35@learnsector.com | \$60,000 | 3 | Bachelors | Professional | Y | 6528852745 | China |
| MS. | CHRISTY | ZHU | 15/02/1968 | | S | F | christy12@learnsector.com | | 0 | Bachelors | Professional | N | 3646568427 | China |
| MRS. | ELIZABETH | JOHNSON | 08/08/1968 | | S | F | elizabeth5@learnsector.com | \$80,000 | 5 | Bachelors | Professional | Y | 7132265883 | China |
| MR. | JULIO | RUIZ | 08/05/1965 | | S | M | julio1@learnsector.com | \$70,000 | 0 | Bachelors | Professional | Y | 1902716743 | China |

```

810 • UPDATE Customers
811     SET Country = "Japan"
812     WHERE Country IS NULL;

```

| | | | | | | | | | | | | | | | |
|-------------|--------|--------------|----------|------------|-----------------|---------------------|--------|----------------------------|--------------|---------------|----------------|--------------|-----------|--------------|---------|
| Result Grid | | Filter Rows: | | Export: | | Wrap Cell Contents: | | | | | | | | | |
| | Prefix | FirstName | LastName | BirthDate | MyUnknownColumn | MaritalStatus | Gender | EmailAddress | AnnualIncome | TotalChildren | EducationLevel | Occupation | HomeOwner | Phone_number | Country |
| ▶ | MR. | JON | YANG | 04/08/1966 | | M | M | jon24@learnsector.com | \$90,000 | 2 | Bachelors | Professional | Y | 6697921661 | China |
| | MR. | EUGENE | HUANG | 14/05/1965 | | S | M | eugene10@learnsector.com | \$60,000 | 3 | Bachelors | Professional | N | 8586376955 | Japan |
| | MR. | RUBEN | TORRES | 08/12/1965 | | M | M | ruben35@learnsector.com | \$60,000 | 3 | Bachelors | Professional | Y | 6528852745 | Japan |
| | MS. | CHRISTY | ZHU | 15/02/1968 | | S | F | christy12@learnsector.com | | 0 | Bachelors | Professional | N | 3646568427 | Japan |
| | MRS. | ELIZABETH | JOHNSON | 08/08/1968 | | S | F | elizabeth5@learnsector.com | \$80,000 | 5 | Bachelors | Professional | Y | 7132265883 | Japan |
| | MR. | JULIO | RUIZ | 08/05/1965 | | S | M | julio1@learnsector.com | \$70,000 | 0 | Bachelors | Professional | Y | 1902716743 | Japan |
| | MR. | MARC | MERF | 08/05/1964 | | M | M | marc16@learnsector.com | \$60,000 | 2 | Bachelors | Professional | Y | 4603376786 | Spain |

```

INSERT INTO Customers(Country)
VALUES('South Korea');




```

| | | | | | | | | | | | | | | | | | | |
|-------------|-----------|----------|------------|-----------------|---------------|--------|-----------------------|---------|--------------|---------------|----------------|--------------|-----------|--------------|-------------|--------------|---------|---------------------|
| Result Grid | | | | | | | | | | | | | | | | Filter Rows: | Export: | Wrap Cell Contents: |
| | FirstName | LastName | BirthDate | MyUnknownColumn | MaritalStatus | Gender | EmailAddress | Regions | AnnualIncome | TotalChildren | EducationLevel | Occupation | HomeOwner | Phone_number | Country | | | |
| | JON | YANG | 04/08/1966 | | M | M | jon24@learnsector.com | | \$90,000 | 2 | Bachelors | Professional | Y | 6697921661 | South Korea | | | |

```

817 -- Add a Column at Specific Position
818 • ALTER TABLE Customers
819     ADD COLUMN Regions VARCHAR(50)
820     AFTER EmailAddress;

```

| Result Grid | |  Filter Rows: <input type="text"/> | Export:  | Wrap Cell Content:  | |
|-----------------|-------------|---|---|--|-------|
| Field | Type | Null | Key | Default | Extra |
| LastName | text | YES | | NULL | |
| BirthDate | text | YES | | NULL | |
| MyUnknownColumn | text | YES | | NULL | |
| MaritalStatus | text | YES | | NULL | |
| Gender | text | YES | | NULL | |
| EmailAddress | text | YES | | NULL | |
| Regions | varchar(50) | YES | | NULL | |

```

822 -- Change Column Data Type: BEFORE
823 • ALTER TABLE Customers
824   MODIFY COLUMN EmailAddress VARCHAR(100);

```

| Field | Type | Null | Key | Default | Extra |
|----------------|-------------|------|-----|---------|-------|
| MaritalStatus | text | YES | | NULL | |
| Gender | text | YES | | NULL | |
| EmailAddress | text | YES | | NULL | |
| Regions | varchar(50) | YES | | NULL | |
| AnnualIncome | text | YES | | NULL | |
| TotalChildren | int | YES | | NULL | |
| EducationLevel | text | YES | | NULL | |

```

822 -- Change Column Data Type:
823 • ALTER TABLE Customers
824   MODIFY COLUMN EmailAddress VARCHAR(100);

```

| Field | Type | Null | Key | Default | Extra |
|----------------|--------------|------|-----|---------|-------|
| MaritalStatus | text | YES | | NULL | |
| Gender | text | YES | | NULL | |
| EmailAddress | varchar(100) | YES | | NULL | |
| Regions | varchar(50) | YES | | NULL | |
| AnnualIncome | text | YES | | NULL | |
| TotalChildren | int | YES | | NULL | |
| EducationLevel | text | YES | | NULL | |

```

822 -- Change Column Data Type:
823 • ALTER TABLE Customers
824   MODIFY COLUMN EmailAddress VARCHAR(100)
825   AFTER MaritalStatus;

```

| Field | Type | Null | Key | Default | Extra |
|-----------------|--------------|------|-----|---------|-------|
| LastName | text | YES | | NULL | |
| BirthDate | text | YES | | NULL | |
| MyUnknownColumn | text | YES | | NULL | |
| MaritalStatus | text | YES | | NULL | |
| EmailAddress | varchar(100) | YES | | NULL | |
| Gender | text | YES | | NULL | |
| Regions | varchar(50) | YES | | NULL | |

```

827 -- RENAME COLUMN old_col_name TO new_col_name
828 • ALTER TABLE Customers
829   RENAME COLUMN BirthDate To DateOfBirth;

```

| Field | Type | Null | Key | Default | Extra |
|-----------------|------|------|-----|---------|-------|
| CustomerKey | int | YES | | NULL | |
| Prefix | text | YES | | NULL | |
| FirstName | text | YES | | NULL | |
| LastName | text | YES | | NULL | |
| DateOfBirth | text | YES | | NULL | |
| MyUnknownColumn | text | YES | | NULL | |
| MaritalStatus | text | YES | | NULL | |

BEFORE

AFTER

```

831 -- Delete (DROP) Columns:
832 • ALTER TABLE Customers
833   DROP COLUMN MyUnknownColumn;

```

| Field | Type | Null | Key | Default | Extra |
|-----------------|--------------|------|-----|---------|-------|
| CustomerKey | int | YES | | NULL | |
| Prefix | text | YES | | NULL | |
| FirstName | text | YES | | NULL | |
| LastName | text | YES | | NULL | |
| DateOfBirth | text | YES | | NULL | |
| MyUnknownColumn | text | YES | | NULL | |
| MaritalStatus | text | YES | | NULL | |
| EmailAddress | varchar(100) | YES | | NULL | |
| Gender | text | YES | | NULL | |
| Regions | varchar(50) | YES | | NULL | |

```

831 -- Delete (DROP) Columns:
832 • ALTER TABLE Customers
833   DROP COLUMN MyUnknownColumn;
834

```

| Field | Type | Null | Key | Default | Extra |
|---------------|--------------|------|-----|---------|-------|
| CustomerKey | int | YES | | NULL | |
| Prefix | text | YES | | NULL | |
| FirstName | text | YES | | NULL | |
| LastName | text | YES | | NULL | |
| DateOfBirth | text | YES | | NULL | |
| MaritalStatus | text | YES | | NULL | |
| EmailAddress | varchar(100) | YES | | NULL | |
| Gender | text | YES | | NULL | |
| Regions | varchar(50) | YES | | NULL | |
| AnnualIncome | text | YES | | NULL | |

```

835 -- DESCRIBE
836 • DESC Customers;
837 • DESCRIBE Customers;
838 • SHOW COLUMNS FROM Customers;

```

| Field | Type | Null | Key | Default | Extra |
|---------------|--------------|------|-----|---------|-------|
| CustomerKey | int | YES | | HULL | |
| Prefix | text | YES | | HULL | |
| FirstName | text | YES | | HULL | |
| LastName | text | YES | | HULL | |
| DateOfBirth | text | YES | | HULL | |
| MaritalStatus | text | YES | | HULL | |
| EmailAddress | varchar(100) | YES | | HULL | |
| Gender | text | YES | | HULL | |
| Regions | varchar(50) | YES | | HULL | |
| AnnualIncome | text | YES | | HULL | |

String Operations

```

845 • SELECT
846     EmailAddress,
847     LENGTH(EmailAddress) AS "email length"
848 FROM Customers;

```

| EmailAddress | email length |
|-----------------------------|--------------|
| jon24@learnsector.com | 21 |
| eugene10@learnsector.com | 24 |
| ruben35@learnsector.com | 23 |
| christy12@learnsector.com | 25 |
| elizabeth5@learnsector.com | 26 |
| julio1@learnsector.com | 22 |
| marco14@learnsector.com | 23 |
| rob4@learnsector.com | 20 |
| shannon38@learnsector.com | 25 |
| tanzeelun20@learnsector.com | 27 |

```

852 -- TRIM(), LTRIM(), RTRIM()
853
854 • SELECT TRIM(BOTH 'x' FROM 'xxxxxxCODING NINJAS xxxxxxxx') AS trimmed_strings;
855

```

| trimmed_strings |
|-----------------|
| CODING NINJAS |

```

855 • SELECT TRIM(BOTH '-' FROM '----- CODING NINJAS') AS trimmed_strings;

```

| trimmed_strings |
|-----------------|
| CODING NINJAS |

```

856 • SELECT TRIM(BOTH 'x' FROM '----- CODING NINJAS') AS trimmed_strings;

```

| trimmed_strings |
|---------------------|
| ----- CODING NINJAS |


```
857 • SELECT TRIM(BOTH 'x' FROM '----- CODING xxxxx NINJAS') AS trimmed_strings;
```

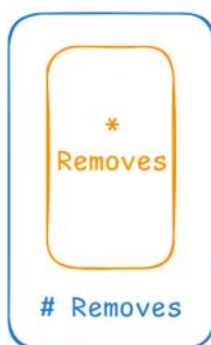
| | | | |
|-----------------|--------------|---------|--------------------|
| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
| trimmed_strings | | | |
| ▶ | | | |

```
858 • SELECT TRIM('*' FROM '***** CODING NINJAS *****') AS trimmed_strings;
```

| | | | |
|-----------------|--------------|---------|--------------------|
| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
| trimmed_strings | | | |
| ▶ | | | |

```
859 • SELECT TRIM('#' FROM TRIM('*' FROM '***** CODING NINJAS #####')) AS trimmed_strings;
```

| | | | |
|-----------------|--------------|---------|--------------------|
| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
| trimmed_strings | | | |
| ▶ | | | |



CODING NINJAS #####

```
861 -- LTRIM
```

```
862 • SELECT LTRIM(' CODING NINJAS ') AS trimmed_strings;
```

| | | | |
|-----------------|--------------|---------|--------------------|
| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
| trimmed_strings | | | |
| ▶ | | | |

```
864 -- RTRIM
```

```
865 • SELECT RTRIM(' CODING NINJAS ') AS trimmed_strings;
```

| | | | |
|-----------------|--------------|---------|--------------------|
| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
| trimmed_strings | | | |
| ▶ | | | |

```
mysql> SELECT TRIM(' bar ');
```

```
-> 'bar'
```

```
mysql> SELECT TRIM(LEADING 'x' FROM 'xxxbarxxx');
```

```
-> 'barxxx'
```

→ LTRIM()

```
mysql> SELECT TRIM(BOTH 'x' FROM 'xxxbarxxx');
```

```
-> 'bar'
```

```
mysql> SELECT TRIM(TRAILING 'xyz' FROM 'barxyz');
```

```
-> 'barx'
```

→ RTRIM()

Concat

→ Joining two or more columns

```
870 • SELECT
871     FirstName,
872     LastName,
873     CONCAT(FirstName , ' ', LastName) As FullName
874 FROM Customers;
```

Result Grid | Filter Rows: | Exports: | Wrap Cell Content: |

| | FirstName | LastName | FullName |
|---|-----------|----------|-------------------|
| ▶ | JON | YANG | JON YANG |
| | EUGENE | HUANG | EUGENE HUANG |
| | RUBEN | TORRES | RUBEN TORRES |
| | CHRISTY | ZHU | CHRISTY ZHU |
| | ELIZABETH | JOHNSON | ELIZABETH JOHNSON |
| | JULIO | RUIZ | JULIO RUIZ |
| | MARCO | MEHTA | MARCO MEHTA |
| | ROBIN | VERHOFF | ROBIN VERHOFF |
| | SHANNON | CARLSON | SHANNON CARLSON |
| | SHANNON | CARLSON | SHANNON CARLSON |

```
876 • DESC Customers;
877
878 • ALTER TABLE Customers
879     ADD COLUMN FullName Varchar(100)
880     AFTER LastName;
```

Result Grid | Filter Rows: | Exports: | Wrap Cell

| | Field | Type | Null | Key | Default | Extra |
|---|---------------|--------------|------|-----|---------|-------|
| | CustomerKey | int | YES | | NULL | |
| | Prefix | text | YES | | NULL | |
| | FirstName | text | YES | | NULL | |
| | LastName | text | YES | | NULL | |
| ▶ | FullName | varchar(100) | YES | | NULL | |
| | DateOfBirth | text | YES | | NULL | |
| | MaritalStatus | text | YES | | NULL | |
| | EmailAddress | varchar(100) | YES | | NULL | |
| | Gender | text | YES | | NULL | |
| | Demographic | varchar(50) | YES | | NULL | |

```
882 • SELECT
883     FirstName,
884     LastName,
885     FullName
886 From Customers;
```

Result Grid | Filter Rows: |

| | FirstName | LastName | FullName |
|---|-----------|----------|----------|
| ▶ | JON | YANG | NULL |
| | EUGENE | HUANG | NULL |
| | RUBEN | TORRES | NULL |
| | CHRISTY | ZHU | NULL |
| | ELIZABETH | JOHNSON | NULL |
| | JULIO | RUIZ | NULL |
| | MARCO | MEHTA | NULL |
| | ROBIN | VERHOFF | NULL |
| | SHANNON | CARLSON | NULL |
| | SHANNON | CARLSON | NULL |

```

888 • UPDATE Customers
889     SET FullName = CONCAT(FirstName, ' ', LastName);
890     -- 2062 row(s) affected Rows matched: 2063  Changed: 2062  Warnings: 0
891

```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
|-------------|--------------|-------------------|--------------------|
| FirstName | LastName | FullName | |
| JON | YANG | JON YANG | |
| EUGENE | HUANG | EUGENE HUANG | |
| RUBEN | TORRES | RUBEN TORRES | |
| CHRISTY | ZHU | CHRISTY ZHU | |
| ELIZABETH | JOHNSON | ELIZABETH JOHNSON | |
| JULIO | RUIZ | JULIO RUIZ | |
| MARCO | MEHTA | MARCO MEHTA | |
| ROBIN | VERHOFF | ROBIN VERHOFF | |
| SHANNON | CARLSON | SHANNON CARLSON | |
| SHANNON | CARLSON | SHANNON CARLSON | |

```

892     -- DROP the FirstName & LastName Column
893 • ALTER TABLE Customers
894     DROP COLUMN FirstName;
895
896 • ALTER TABLE Customers
897     DROP COLUMN LastName;
898
899 • ALTER TABLE Customers
900     DROP COLUMN FirstName,
901     DROP COLUMN LastName;
902
903 • DESC Customers;

```

| Field | Type | Null | Key | Default | Extra |
|---------------|--------------|------|-----|---------|-------|
| CustomerKey | int | YES | | HULL | |
| Prefix | text | YES | | HULL | |
| FullName | varchar(100) | YES | | HULL | |
| DateOfBirth | text | YES | | HULL | |
| MaritalStatus | text | YES | | HULL | |
| EmailAddress | varchar(100) | YES | | HULL | |
| Gender | text | YES | | HULL | |
| Regions | varchar(50) | YES | | HULL | |
| AnnualIncome | text | YES | | HULL | |
| TotalChildren | int | YES | | HULL | |

```

905 • SELECT * FROM Customers;

```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

| | CustomerKey | Prefix | FullName | DateOfBirth | MaritalStatus | EmailAddress | Gender |
|--|-------------|--------|-------------------|-------------|---------------|----------------------------|--------|
| | 11000 | MR. | JON YANG | 04/08/1966 | M | jon24@learnsector.com | M |
| | 11001 | MR. | EUGENE HUANG | 14/05/1965 | S | eugene10@learnsector.com | M |
| | 11002 | MR. | RUBEN TORRES | 08/12/1965 | M | ruben35@learnsector.com | M |
| | 11003 | MS. | CHRISTY ZHU | 15/02/1968 | S | christy12@learnsector.com | F |
| | 11004 | MRS. | ELIZABETH JOHNSON | 08/08/1968 | S | elizabeth5@learnsector.com | F |
| | 11005 | MR. | JULIO RUIZ | 08/05/1965 | S | julio1@learnsector.com | M |
| | 11007 | MR. | MARCO MEHTA | 05/09/1964 | M | marco14@learnsector.com | M |
| | 11008 | MRS. | ROBIN VERHOFF | 07/07/1964 | S | rob4@learnsector.com | F |
| | 11009 | MR. | SHANNON CARLSON | 04/01/1964 | S | shannon38@learnsector.com | M |

Substring_index:

Syntax :

```
SUBSTRING_INDEX(str, 'delimiter' , count)
```

count > 0 -> Left to right [From Start]

count < 0 -> Right to Left [From End]

Jon Yang

" " [delimiter]

count = 1 ['Jon']

count = -1 ['Yang']

1 -1
Ram Neel Gong

count = 2 ['Ram' , 'Neel'] -1

count = -2 ['Neel' , 'Gong']
1

SUBSTRING_INDEX(str, 'delimiter' , count)
" " 2 [Ram Neel]

SUBSTRING_INDEX(str, 'delimiter' , count)
" " , -1 Neel

Sports List

'Cricket' , 'Badminton' , 'Golf' , 'BasketBall' , 'Hockey' , 'FootBall' , 'VolleyBall'

SUBSTRING_INDEX(str, 'delimiter' , count)
sports_list " , " 3
-1

'Cricket' , 'Badminton' , 'Golf'

SUBSTRING_INDEX(str, 'delimiter' , count)
sports_list " , " -5

1
'Golf' , 'BasketBall' , 'Hockey' , 'FootBall' , 'VolleyBall'


```

907 -- ADD Column FirstName & LastName into Customers
908 • ALTER TABLE Customers
909   ADD COLUMN FirstName VARCHAR(50)
910   AFTER Prefix;
911
912 • ALTER TABLE Customers
913   ADD COLUMN LastName VARCHAR(50)
914   AFTER FirstName;
915
916 • DESC Customers;

```

| Field | Type | Null | Key | Default | Extra |
|---------------|--------------|------|-----|---------|-------|
| CustomerKey | int | YES | | NULL | |
| Prefix | text | YES | | NULL | |
| FirstName | varchar(50) | YES | | NULL | |
| LastName | varchar(50) | YES | | NULL | |
| FullName | varchar(100) | YES | | NULL | |
| DateOfBirth | text | YES | | NULL | |
| MaritalStatus | text | YES | | NULL | |
| EmailAddress | varchar(100) | YES | | NULL | |
| Gender | text | YES | | NULL | |
| Reasons | varchar(50) | YES | | NULL | |

```

918 • SELECT
919     FirstName,
920     LastName,
921     FullName
922 FROM Customers;

```

| FirstName | LastName | FullName |
|-----------|----------|-------------------|
| NULL | NULL | JON YANG |
| NULL | NULL | EUGENE HUANG |
| NULL | NULL | RUBEN TORRES |
| NULL | NULL | CHRISTY ZHU |
| NULL | NULL | ELIZABETH JOHNSON |
| NULL | NULL | JULIO RUIZ |
| NULL | NULL | MARCO MEHTA |
| NULL | NULL | ROBIN VERHOFF |
| NULL | NULL | SHANNON CARLSON |
| NULL | NULL | JACQUELYN SIARD |

```

924 -- Update the FirstName , LastName By Extracting From FullName
925 -- Hint : Use Substring_index
926
927 • UPDATE Customers
928   SET FirstName = SUBSTRING_INDEX(FullName, ' ', 1);

```

| FirstName | LastName | FullName |
|-----------|----------|-------------------|
| JON | NULL | JON YANG |
| EUGENE | NULL | EUGENE HUANG |
| RUBEN | NULL | RUBEN TORRES |
| CHRISTY | NULL | CHRISTY ZHU |
| ELIZABETH | NULL | ELIZABETH JOHNSON |
| JULIO | NULL | JULIO RUIZ |
| MARCO | NULL | MARCO MEHTA |
| ROBIN | NULL | ROBIN VERHOFF |
| SHANNON | NULL | SHANNON CARLSON |
| JACQUELYN | NULL | JACQUELYN SIARD |

930 • **UPDATE** Customers

931 **SET** LastName = SUBSTRING_INDEX(FullName, ' ', -1);

| Result Grid | | | |
|--------------|------------|----------|--------------------|
| Filter Rows: | | Export: | Wrap Cell Content: |
| | FirstName | LastName | FullName |
| | JON | YANG | JON YANG |
| | EUGENE | HUANG | EUGENE HUANG |
| | RUBEN | TORRES | RUBEN TORRES |
| | CHRISTY | ZHU | CHRISTY ZHU |
| | ELIZABETH | JOHNSON | ELIZABETH JOHNSON |
| | JULIO | RUIZ | JULIO RUIZ |
| | MARCO | MEHTA | MARCO MEHTA |
| | ROBIN | VERHOFF | ROBIN VERHOFF |
| | SHANNON | CARLSON | SHANNON CARLSON |
| | 1&C011F1YN | SI&RF7 | 1&C011F1YN SI&RF7 |

UPPER()/LOWER()

933 -- UPPER() -> Convert the string Columns into UpperCase

934 • **SELECT**

935 EmailAddress,

936 UPPER(EmailAddress) AS Email

937 **FROM** Customers;

| Result Grid | | |
|--------------|------------------------------|------------------------------|
| Filter Rows: | | Export: Wrap Cell Content: |
| | EmailAddress | Email |
| | jon24@learnsector.com | JON24@LEARNSECTOR.COM |
| | eugene10@learnsector.com | EUGENE10@LEARNSECTOR.COM |
| | ruben35@learnsector.com | RUBEN35@LEARNSECTOR.COM |
| | christy12@learnsector.com | CHRISTY12@LEARNSECTOR.COM |
| | elizabeth5@learnsector.com | ELIZABETH5@LEARNSECTOR.COM |
| | julio1@learnsector.com | JULIO1@LEARNSECTOR.COM |
| | marco14@learnsector.com | MARCO14@LEARNSECTOR.COM |
| | rob4@learnsector.com | ROB4@LEARNSECTOR.COM |
| | shannon38@learnsector.com | SHANNON38@LEARNSECTOR.COM |
| | 1&C011F1YN20@learnsector.com | 1&C011F1YN20@LEARNSECTOR.COM |

939 • **SELECT**

940 ProductName,

941 ModelName,

942 UPPER(ProductColor) AS Color

943 **FROM** Products;

| Result Grid | | | |
|--------------|-----------------------------|-------------------------|--------------------|
| Filter Rows: | | Export: | Wrap Cell Content: |
| | ProductName | ModelName | Color |
| | Sport-100 Helmet, Red | Sport-100 | RED |
| | Sport-100 Helmet, Black | Sport-100 | BLACK |
| | Mountain Bike Socks, M | Mountain Bike Socks | WHITE |
| | Mountain Bike Socks, L | Mountain Bike Socks | WHITE |
| | Sport-100 Helmet, Blue | Sport-100 | BLUE |
| | AWC Logo Cap | Cycling Cap | MULTI |
| | Long-Sleeve Logo Jersey, S | Long-Sleeve Logo Jersey | MULTI |
| | Long-Sleeve Logo Jersey, M | Long-Sleeve Logo Jersey | MULTI |
| | Long-Sleeve Logo Jersey, L | Long-Sleeve Logo Jersey | MULTI |
| | Long-Sleeve Logo Jersey, XL | Long-Sleeve Logo Jersey | MULTI |

```

945 -- LOWER() -> transform the string columns into lower case
946 • SELECT * FROM Customers;
947 • SELECT
948     FirstName,
949     LastName,
950     FullName,
951     Lower(FullName) AS customer_name
952 FROM Customers;

```

| Result Grid | Filter Rows: | Export: | Wrap Cell Contents: |
|-------------|--------------|-------------------|---------------------|
| FirstName | LastName | FullName | customer_name |
| JON | YANG | JON YANG | jon yang |
| EUGENE | HUANG | EUGENE HUANG | eugene huang |
| RUBEN | TORRES | RUBEN TORRES | ruben torres |
| CHRISTY | ZHU | CHRISTY ZHU | christy zhu |
| ELIZABETH | JOHNSON | ELIZABETH JOHNSON | elizabeth johnson |
| JULIO | RUIZ | JULIO RUIZ | julio ruiz |
| MARCO | MEHTA | MARCO MEHTA | marco mehta |
| ROBIN | VERHOFF | ROBIN VERHOFF | robin verhoff |
| SHANNON | CARLSON | SHANNON CARLSON | shannon carlson |




Right()/Left()

```

957 • SELECT
958     EmailAddress,
959     RIGHT(EmailAddress,4) -- .com
960 FROM Customers;

```

-- RIGHT -- Extracted From Right
 -- Syntax : Right(str, no_of_characters)

| | | | | | |
|-------------|---|--|---------|---|---------------------|
| Result Grid |  |  Filter Rows: | Export: |  | Wrap Cell Contents: |
| | EmailAddress | RIGHT(EmailAddress,4) | | | |
| | jon24@learnsector.com | .com | | | |
| | eugene10@learnsector.com | .com | | | |
| | ruben35@learnsector.com | .com | | | |
| | christy12@learnsector.com | .com | | | |
| | elizabeth5@learnsector.com | .com | | | |
| | julio1@learnsector.com | .com | | | |
| | marco14@learnsector.com | .com | | | |
| | rob4@learnsector.com | .com | | | |
| ▶ | shannon38@learnsector.com | .com | | | |
| | tanquilun70@learnsector.com | .com | | | |

```

962 • SELECT
963     EmailAddress,
964     RIGHT(EmailAddress,15) AS Domain_Name -- learnsector.com
965 FROM Customers;

```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

| EmailAddress | Domain_Name |
|----------------------------|-----------------|
| jon24@learnsector.com | learnsector.com |
| eugene10@learnsector.com | learnsector.com |
| ruben35@learnsector.com | learnsector.com |
| christy12@learnsector.com | learnsector.com |
| elizabeth5@learnsector.com | learnsector.com |
| julio1@learnsector.com | learnsector.com |
| marco14@learnsector.com | learnsector.com |
| rob4@learnsector.com | learnsector.com |
| shannon38@learnsector.com | learnsector.com |
| shannon38@learnsector.com | learnsector.com |

Result 53

```

970 • SELECT
971     ProductSKU,
972     LEFT(ProductSKU,2) AS Category_abbreviation
973 FROM Products;

```

| ProductSKU | Category_abbreviation |
|------------|-----------------------|
| HL-U509-R | HL |
| HL-U509 | HL |
| SO-B909-M | SO |
| SO-B909-L | SO |
| HL-U509-B | HL |
| CA-1098 | CA |
| LJ-0192-S | LJ |
| LJ-0192-M | LJ |
| LJ-0192-L | LJ |
| LJ-0192-Y | LJ |

LPAD() / RPAD()

Syntax -

LPAD(str, length, pad_string)

Syntax -

RPAD(str, length, pad_string)

XXXX-XXXX-XXXX-1234

Concat

LPAD(credit_card,12,'X')

RIGHT(credit_card , 4)

```

977 -- LPAD()
978 • SELECT
979     Phone_number,
980     LPAD(Phone_number , 10 , '0') AS New_Phone_number
981 FROM Customers;

```

| Phone_num | New_Phone_number |
|------------|------------------|
| 4203325209 | 4203325209 |
| 2866694333 | 2866694333 |
| 3417265787 | 3417265787 |
| 3166486176 | 3166486176 |
| 8338877898 | 8338877898 |
| 8043834080 | 8043834080 |
| 211712173 | 0211712173 |
| 435758409 | 0435758409 |
| 7907467471 | 7907467471 |
| 6407845787 | 6407845787 |


```

983 -- RPAD()
984 • SELECT
985     Phone_number,
986     RPAD(Phone_number , 10 , '0') AS New_Phone_number
987 FROM Customers;

```

| Phone_num | New_Phone_number |
|------------|------------------|
| 3166486176 | 3166486176 |
| 8338877898 | 8338877898 |
| 8043834080 | 8043834080 |
| 211712173 | 2117121730 |
| 435758409 | 4357584090 |
| 7907467471 | 7907467471 |
| 6493845387 | 6493845387 |
| 3314308824 | 3314308824 |
| 5733069938 | 5733069938 |
| 4664742107 | 4664742107 |
| 6256139890 | 6256139890 |
| 1541159953 | 1541159953 |
| 4632815751 | 4632815751 |
| 70966652 | 7096665200 |
| 179191924 | 1791919240 |
| 7656246051 | 7656246051 |
| 1202157905 | 1202157905 |
| 3621965800 | 3621965800 |
| 6896499029 | 6896499029 |
| 6744432397 | 6744432397 |

(+91) → Length 15 maintain

```

989 -- LPAD() -> (+91) - 5 length
990 • SELECT
991     Phone_number,
992     LPAD(Phone_number , 15 , ' (+91)00') AS New_Phone_number
993 FROM Customers;

```

| Phone_num | New_Phone_number |
|------------|------------------|
| 7249108709 | (+91)7249108709 |
| 4886463204 | (+91)4886463204 |
| 3381736502 | (+91)3381736502 |
| 6256139890 | (+91)6256139890 |
| 1541159953 | (+91)1541159953 |
| 4632815751 | (+91)4632815751 |
| 70966652 | (+91)0070966652 |
| 179191924 | (+91)0179191924 |
| 7656246051 | (+91)7656246051 |
| 1202157905 | (+91)1202157905 |

```

997 -- RPAD() -> Concat (+91) [5 Length] -> Rpad [0] at the end
998 • SELECT
999     Phone_number,
1000     CONCAT(
1001         ' (+91)',
1002         RPAD(Phone_number , 10 , '0')
1003     ) AS New_Phone_number
1004 FROM Customers;

```

| Phone_num | New_Phone_number |
|------------|------------------|
| 6697921661 | (+91)6697921661 |
| 8586376955 | (+91)8586376955 |
| 6528852745 | (+91)6528852745 |
| 3646568427 | (+91)3646568427 |
| 7132265883 | (+91)7132265883 |
| 1902716743 | (+91)1902716743 |
| 4203325209 | (+91)4203325209 |
| 2866694333 | (+91)2866694333 |
| 3417265787 | (+91)3417265787 |
| 3166486176 | (+91)3166486176 |
| 8338877898 | (+91)8338877898 |

Reverse()

```
008 • SELECT REVERSE("Hello World") AS Reversed_string;
```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
|-----------------|--------------|---------|--------------------|
| Reversed_string | | | |
| ▶ diroW olleH | | | |

```
010 • SELECT
011     FirstName,
012     REVERSE(FirstName) AS Reversed_FirstName
013 FROM Customers;
```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
|-------------|--------------------|---------|--------------------|
| FirstName | Reversed_FirstName | | |
| ▶ JON | NOJ | | |
| EUGENE | ENEGUE | | |
| RUBEN | NEBUR | | |
| CHRISTY | YTSIRHC | | |
| ELIZABETH | HTEBAZILE | | |
| JULIO | OILUJ | | |
| MARCO | OCRAM | | |
| ROBIN | NIBOR | | |
| SHANNON | NONNAHS | | |
| JACQUELYN | NYLEUQCAJ | | |
| CURTIS | SITRUC | | |

Palindrome

Concat(original_str + reversed_str)

'level', 'madam', 'racecar', 'mom',
'malayalam', 'dad', 'naman', 'nitin',
'rotator', 'reviver', 'noon', 'radar',
'lol', 'tenet', 'wow', 'hannah', etc....

```
015 -- Palindrome
016 • SELECT
017     FirstName,
018     REVERSE(FirstName) AS Reversed_FirstName,
019     CONCAT(FirstName, REVERSE(FirstName)) AS Palindrome_str
020 FROM Customers;
```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
|-------------|--------------------|---------------------|--------------------|
| FirstName | Reversed_FirstName | Palindrome_str | |
| ▶ JON | NOJ | JONNOJ | |
| EUGENE | ENEGUE | EUGENEENEGUE | |
| RUBEN | NEBUR | RUBENNEBUR | |
| CHRISTY | YTSIRHC | CHRISTYYTSIRHC | |
| ELIZABETH | HTEBAZILE | ELIZABETH#HTEBAZILE | |
| JULIO | OILUJ | JULIOOILUJ | |
| MARCO | OCRAM | MARCOOCRAM | |
| ROBIN | NIBOR | ROBINNIBOR | |
| SHANNON | NONNAHS | SHANNONNONNAHS | |
| JACQUELYN | NYLEUQCAJ | JACQUELYNNYLEUQCAJ | |
| CURTIS | SITRUC | CURTISSITRUC | |