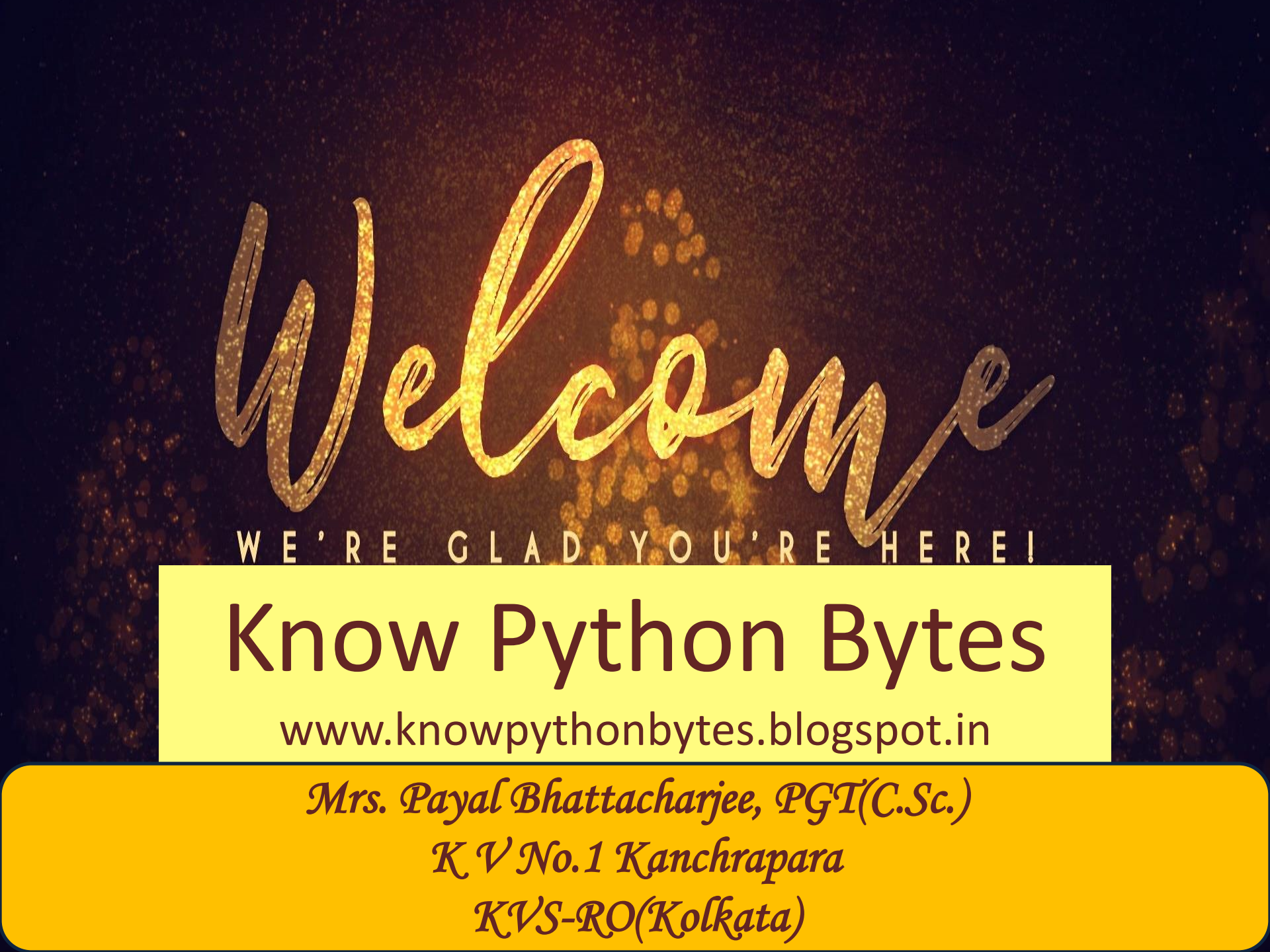

Know Python Bytes

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UNIT 3

For XII CSc:

Database Management

UNIT 2

For XII IP:

Database Query using SQL

UNIT 4

For XI IP:

Database concepts and the Structured Query Language

CONTENTS (Learning outcomes)

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ii. Length( )
iii. Concat( )
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LEARNING MySQL QUERIES....
(Practical)

MySQL Functions

(Library Functions in MySQL)

- String
- Mathematical
- Date and Time

MySQL Functions

- A ***function*** is a special type of predefined command set that performs some operation and returns a single value. The input given to the functions are known as ***parameters or arguments.***

Categories of MySQL Function

i) **String Functions**

String functions are used to manipulate the text string in many ways.

ii) **Mathematical Functions / Numeric Functions**

The numeric functions are those functions that accept numeric values as input parameters (arguments) and returns numeric values after execution of the query

iii) **Date and Time Functions**

Date and Time functions operate on values of the DATE data type.

STRING FUNCTIONS

```
mysql> SELECT * FROM PRODUCT;
+-----+--------------------+------------+-----------+----------+------+
| Pno | Pname              | DOP        | Company   | Price    | Qty  |
+-----+--------------------+------------+-----------+----------+------+
| 101 | Router             | 2003-12-09 | TitBit    | 3599.990 | 100  |
| 102 | Switch             | 2005-10-06 | Cosmos    | 3890.890 | 50   |
| 103 | RAM                | 2004-01-01 | Universal | 2899.990 | 60   |
| 104 | WebCam             | 2004-08-24 | Starlite  | 1950.490 | 20   |
| 105 | Memory Card        | 2004-07-03 | PCWorks   |  295.000 | 200  |
| 106 | Head Phone         | 2003-02-16 | NULL      |     NULL | NULL |
| 107 | Bluetooth Headset  | 2005-05-19 | Cosmos    | 1190.000 | 10   |
| 108 | Speaker            | 2004-07-10 | StarMark  | 1659.890 | 25   |
+-----+--------------------+------------+-----------+----------+------+
8 rows in set (0.00 sec)
```

READY TO RUN CODE

```
create table Product
(
Pno integer(6) primary key,
Pname varchar(20) Not Null,
DOP date,
Company varchar(20),
Price decimal(7,3),
Qty varchar(30)
);
Insert Into Product Values(101,'Router','2003-12-09',"TitBit",3599.99,100);
Insert Into Product Values(102,'Switch','2005-10-06',"Cosmos",3890.89,50);
Insert Into Product Values(103,'RAM','2004-01-01',"Universal",2899.99,60);
Insert Into Product Values(104,'WebCam','2004-08-24',"Starlite",1950.49,20);
Insert Into Product Values(105,'Memory Card','2004-07-03',"PCWorks",295.00,200);
Insert Into Product(Pno,Pname,DOP) Values(106,'Head Phone','2003-02-16');
Insert Into Product Values(107,'Bluetooth Headset','2005-05-19',"Cosmos",1190.00,10);
Insert Into Product Values(108,'Speaker','2004-07-10',"StarMark",1659.89,25);
```

STRING FUNCTIONS- char( )

STRING FUNCTIONS

i. **Char( )**
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper( )/Ucase( )
vi. Substring( )/ Substr( ) /Mid( )
vii. Trim() , LTrim() , RTrim()
viii. Left( ) / Right( )
ix. Instr( )

Returns the character for each integer passed.

```
mysql> SELECT CHAR(66,65,71);

OUTPUT
BAG
```

NOTE:

ASCII (American Standard Code for Informaton Interchange.

Eg. A=65,B=66.....and so on
a= 97,b=98.....and so on

STRING FUNCTIONS- Length( )

STRING FUNCTIONS

i. Char( )

ii. **Length( )**

iii. Concat( )

iv. Lower( )/Lcase( )

v. Upper( )/Ucase( )

vi. Substring( )/ Substr( ) /Mid( )

vii. Trim() , LTrim() , RTrim()

viii. Left( ) / Right( )

ix. Instr( )

Returns the length of the parameter (string) passed to it.

NOTE:
Length considers spaces and special characters as well.

```
mysql> SELECT LENGTH("I Love India");
+-----------------------+
| LENGTH("I Love India") |
+-----------------------+
|                    12 |
+-----------------------+
1 row in set (0.00 sec)

mysql> SELECT LENGTH("I Love India") "Length";
+--------+
| Length |
+--------+
|     12 |
+--------+
1 row in set (0.00 sec)

mysql> SELECT pname,LENGTH(pname)
    -> FROM Product;
+--------------------+---------------+
| pname              | LENGTH(pname) |
+--------------------+---------------+
| Router             |             6 |
| Switch             |             6 |
| RAM                |             3 |
| WebCam             |             6 |
| Memory Card        |            11 |
| Head Phone         |            10 |
| Bluetooth Headset  |            17 |
| Speaker            |             7 |
+--------------------+---------------+
8 rows in set (0.00 sec)
```

STRING FUNCTIONS- Concat ( )

STRING FUNCTIONS

i. Char( )
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper( )/Ucase( )
vi. Substring( )/ Substr( ) /Mid( )
vii. Trim() , LTrim() , RTrim()
viii. Left( ) / Right( )
ix. Instr( )

Returns the concatenated (joined) strings

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> select CONCAT("WORLD","PEACE");
+-----------------------+
| CONCAT("WORLD","PEACE") |
+-----------------------+
| WORLDPEACE            |
+-----------------------+
1 row in set (0.00 sec)
```

```
mysql> select CONCAT(pname,"-",price)
    -> from Product;
+---------------------------+
| CONCAT(pname,"-",price)   |
+---------------------------+
| Router-3599.990           |
| Switch-3890.890           |
| RAM-2899.990              |
| WebCam-1950.490           |
| Memory Card-295.000       |
| NULL                      |
| Bluetooth Headset-1190.000 |
| Speaker-1659.890          |
+---------------------------+
8 rows in set (0.00 sec)
```

STRING FUNCTIONS- lower( ) / lcase( )

STRING FUNCTIONS

i. Char( )
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper( )/Ucase( )
vi. Substring( )/ Substr( ) /Mid( )
vii. Trim() , LTrim() , RTrim()
viii. Left( ) / Right( )
ix. Instr( )

Returns the input parameter in lowercase.

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> select LCASE("INDIA");
+---------------+
| LCASE("INDIA") |
+---------------+
| india         |
+---------------+
1 row in set (0.07 sec)
```

```
mysql> select LCASE(pname) "In Small"
    -> from product;
+------------------+
| In Small         |
+------------------+
| router           |
| switch           |
| ram              |
| webcam           |
| memory card      |
| head phone       |
| bluetooth headset |
| speaker          |
+------------------+
8 rows in set (0.00 sec)
```

STRING FUNCTIONS- UPPER( ) / UCASE( )

STRING FUNCTIONS

i. Char( )
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper()/Ucase()
vi. Substring( )/ Substr( ) /Mid( )
vii. Trim() , LTrim() , RTrim()
viii. Left( ) / Right( )
ix. Instr( )

Returns the input parameter in UPPERCASE *(CAPITAL LETTERS)*

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> select UPPER("INDIA");
+---------------+
| UPPER("INDIA") |
+---------------+
| INDIA         |
+---------------+
1 row in set (0.07 sec)
```

```
mysql> select uCASE(pname) "In Capital"
    -> from product;
+-------------------+
| In Capital        |
+-------------------+
| ROUTER            |
| SWITCH            |
| RAM               |
| WEBCAM            |
| MEMORY CARD       |
| HEAD PHONE        |
| BLUETOOTH HEADSET |
| SPEAKER           |
+-------------------+
8 rows in set (0.00 sec)
```

STRING FUNCTIONS- Substring( ) / Substr() / Mid()

Returns the substring (part) of a string

STRING FUNCTIONS

i. Char( )
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper( )/Ucase( )
vi. **Substring( )/ Substr( )/ Mid( )**
vii. Trim( ) , LTrim( ) , RTrim()
viii. Left( ) / Right( )
ix. Instr( )

SYNTAX:

MID("string", starting Index number, number of characters to be extracted)
SUBSTR("string", starting Index number, number of characters to be extracted)
SUBSTRING("string", starting Index number, number of characters to be extracted)

NOTE: Index no. in MySQL for a string starts from 1. Any thing written inside ' ' or " " is the string. The output produced is the substring.

Index no.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
W	e	l	c	o	m	e		t	o		I	n	d	i	a	!	!	!

Characters

```
mysql> select substr("Welcome to India!!!",4,12);
+-------------------------------+
| substr("Welcome to India!!!",4,12) |
+-------------------------------+
| come to Indi                  |
+-------------------------------+
1 row in set (0.00 sec)
```

Here, 4 is the starting index no.

Here, 12 is the no. of characters to e extracted

STRING FUNCTIONS- Substring( ) / Substr() / Mid()

STRING FUNCTIONS

i. Char( )
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper( )/Ucase( )
vi. **Substring( )/ Substr( )/ Mid( )**
vii. Trim( ) , LTrim( ) , RTrim()
viii. Left( ) / Right( )
ix. Instr( )

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> select mid(Company,2,5)
    -> from Product;
+------------------+
| mid(Company,2,5) |
+------------------+
| itBit            |
| osmos            |
| niver            |
| tarli            |
| CWork            |
| NULL             |
| osmos            |
| tarMa            |
+------------------+
8 rows in set (0.00 sec)
```

```
mysql> select substring(Company,2,5)
    -> from Product;
+-----------------------+
| substring(Company,2,5) |
+-----------------------+
| itBit                 |
| osmos                 |
| niver                 |
| tarli                 |
| CWork                 |
| NULL                  |
| osmos                 |
| tarMa                 |
+-----------------------+
8 rows in set (0.00 sec)
```

NOTE:
Substring() / substr() / mid()
Represent the same function

STRING FUNCTIONS- Trim(), LTrim( ), Rtrim()

STRING FUNCTIONS

i. Char( )
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper( )/Ucase( )
vi. Substring( )/ Substr( ) /Mid( )
vii. Trim( ), LTrim( ) , RTrim( )
viii. Left( ) / Right( )
ix. Instr( )

Trim( ) : ***Removes both leading***(from the beginning) ***and trailing*** (at the end) ***spaces.***

LTrim( ) : ***Removes leading****(from the beginning) spaces.*

RTrim( ) : ***Removes trailing*** *(at the end) spaces.*

```
mysql> select Trim("       Hello World     ") AS Output;
+-------------+
| Output      |
+-------------+
| Hello World |
+-------------+
1 row in set (0.02 sec)

mysql> select LTrim("       Hello World     ") AS Output;
+------------------+
| Output           |
+------------------+
| Hello World      |
+------------------+
1 row in set (0.00 sec)

mysql> select RTrim("       Hello World     ") AS Output;
+--------------------+
| Output             |
+--------------------+
|       Hello World  |
+--------------------+
1 row in set (0.03 sec)
```

STRING FUNCTIONS- Left( ) / Right( )

STRING FUNCTIONS

i. Char( )
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper( )/Ucase( )
vi. Substring( )/ Substr( ) /Mid( )
vii. Trim() , LTrim() , RTrim()
viii. **Left( ) / Right( )**
ix. Instr( )

Left() : Returns the extracted characters from left (beginning) side .

Right() : Returns the extracted characters from right (trailing) side.

SYNTAX: Left("<String>",<n>)
Right("<String>",<n>)

*Where, **n** is the no. of characters to be extracted.*

```
mysql> select Left("Welcome to India!!!",14) AS output;
+----------------+
| output         |
+----------------+
| Welcome to Ind |
+----------------+
1 row in set (0.00 sec)
```

```
mysql> select Right("Welcome to India!!!",16) AS output;
+------------------+
| output           |
+------------------+
| come to India!!! |
+------------------+
1 row in set (0.00 sec)
```

STRING FUNCTIONS- Left( ) / Right( )

STRING FUNCTIONS

i. Char( )
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper( )/Ucase( )
vi. Substring( )/ Substr( ) /Mid( )
vii. Trim() , LTrim() , RTrim()
viii. **Left( ) / Right( )**
ix. Instr( )

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> select LEFT(Pname,3) "Left Output",
    -> RIGHT(Company,4) "Right Output"
    -> from Product;
+-------------+--------------+
| Left Output | Right Output |
+-------------+--------------+
| Rou         | tBit         |
| Swi         | smos         |
| RAM         | rsal         |
| Web         | lite         |
| Mem         | orks         |
| Hea         | NULL         |
| Blu         | smos         |
| Spe         | Mark         |
+-------------+--------------+
8 rows in set (0.00 sec)
```

STRING FUNCTIONS- Instr( )

STRING FUNCTIONS

i. Char( )
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper( )/Ucase( )
vi. Substring( )/ Substr( ) /Mid( )
vii. Trim() , LTrim() , RTrim()
viii. Left( ) / Right( )
ix. **Instr( )**

INSTR() : Returns the index of the first occurrence of substring

```
mysql> Select INSTR('Welcome Home','om');
+-----------------------------+
| INSTR('Welcome Home','om') |
+-----------------------------+
|                           5 |
+-----------------------------+
1 row in set (0.02 sec)

mysql> Select INSTR('Welcome Home','om') "OUTPUT";
+--------+
| OUTPUT |
+--------+
|      5 |
+--------+
1 row in set (0.00 sec)
```

STRING FUNCTIONS- Instr( )

STRING FUNCTIONS

i. Char( )
ii. Length( )
iii. Concat( )
iv. Lower( )/Lcase( )
v. Upper( )/Ucase( )
vi. Substring( )/ Substr( ) /Mid( )
vii. Trim() , LTrim() , RTrim()
viii. Left( ) / Right( )
ix. **Instr( )**

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> Select Company,INSTR(Company,'ar')
    -> From Product
    -> Where Qty<=50;
+----------+-----------------------+
| Company  | INSTR(Company,'ar') |
+----------+-----------------------+
| Cosmos   |                     0 |
| Starlite |                     3 |
| Cosmos   |                     0 |
| StarMark |                     3 |
+----------+-----------------------+
4 rows in set (0.00 sec)
```

MATHEMATICAL FUNCTIONS

MATHEMATICAL FUNCTIONS- Mod( ) or %

Numeric Functions

i. **Mod( ) or %**

ii. Power( ) /Pow( )

iii. Sqrt( )

iv. Sign( )

v. Round( )

vi. Truncate()

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> select Qty,MOD(qty,3) from Product where Qty<=50;
+------+------------+
| Qty  | MOD(qty,3) |
+------+------------+
| 50   |          2 |
| 20   |          2 |
| 10   |          1 |
| 25   |          1 |
+------+------------+
4 rows in set (0.00 sec)
```

Returns remainder of one expression by dividing by another expression.

```
mysql> select 11 % 4;
+--------+
| 11 % 4 |
+--------+
|      3 |
+--------+
1 row in set (0.00 sec)
```

```
mysql> select 11 mod 4;
+----------+
| 11 mod 4 |
+----------+
|        3 |
+----------+
1 row in set (0.00 sec)
```

```
mysql> select mod(11,4);
+-----------+
| mod(11,4) |
+-----------+
|         3 |
+-----------+
1 row in set (0.00 sec)
```

MATHEMATICAL FUNCTIONS- POWER( ) / POW()

Numeric Functions

i. Mod( ) or %

ii. **Power( ) / Pow()**

iii. Sqrt( )

iv. Sign( )

v. Round( )

vi. Truncate()

Returns the value of one expression raised to the power of another expression.

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> select power(4,3);
+-----------+
| power(4,3) |
+-----------+
|        64 |
+-----------+
1 row in set (0.08 sec)
```

```
mysql> select pow(5,4);
+---------+
| pow(5,4) |
+---------+
|     625 |
+---------+
1 row in set (0.00 sec)
```

```
mysql> select Qty,pow(Qty,2) from Product;
+------+------------+
| Qty  | pow(Qty,2) |
+------+------------+
|  100 |      10000 |
|   50 |       2500 |
|   60 |       3600 |
|   20 |        400 |
|  200 |      40000 |
| NULL |       NULL |
|   10 |        100 |
|   25 |        625 |
+------+------------+
8 rows in set (0.00 sec)
```

MATHEMATICAL FUNCTIONS- SQRT()

Numeric Functions

i. Mod( ) or %

ii. Power( ) / Pow()

iii. Sqrt( )

iv. Sign( )

v. Round( )

vi. Truncate()

Returns the non-negative square root of numeric expression.

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> select SQRT(25);
+----------+
| SQRT(25) |
+----------+
|        5 |
+----------+
1 row in set (0.00 sec)
```

```
mysql> Select SQRT(Qty) From Product;
+--------------------+
| SQRT(Qty)          |
+--------------------+
|                 10 |
| 7.0710678118654755 |
|  7.745966692414834 |
|  4.472135954999579 |
| 14.142135623730951 |
|               NULL |
| 3.1622776601683795 |
|                  5 |
+--------------------+
8 rows in set (0.00 sec)
```

MATHEMATICAL FUNCTIONS- SIGN( )

Numeric Functions

i. Mod( ) or %
ii. Power( ) / Pow()
iii. Sqrt( )
iv. Sign( )
v. Round( )
vi. Truncate()

Returns the sign of a given number.

NOTE: Sign() functions only returns **(+1,-1,0)** as per the given value.

```
mysql> Select SIGN(+15),SIGN(-240),SIGN(0);
+-----------+------------+---------+
| SIGN(+15) | SIGN(-240) | SIGN(0) |
+-----------+------------+---------+
|         1 |         -1 |       0 |
+-----------+------------+---------+
1 row in set (0.02 sec)
```

MATHEMATICAL FUNCTIONS- ROUND( )

Numeric Functions

i. Mod( ) or %

ii. Power( ) / Pow()

iii. Sqrt( )

iv. Sign( )

V. Round( )

vi. Truncate( )

Returns numeric expression rounded to an integer. It can be used to round an expression to a number of decimal points.

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> Select Price,ROUND(Price,1)
    -> From Product;
+----------+-----------------+
| Price    | ROUND(Price,1)  |
+----------+-----------------+
| 3599.990 |          3600.0 |
| 3890.890 |          3890.9 |
| 2899.990 |          2900.0 |
| 1950.490 |          1950.5 |
|  295.000 |           295.0 |
|     NULL |            NULL |
| 1190.000 |          1190.0 |
| 1659.890 |          1659.9 |
+----------+-----------------+
8 rows in set (0.00 sec)
```

MATHEMATICAL FUNCTIONS- TRUNCATE( )

Numeric Functions

i. Mod( ) or %

ii. Power( ) / Pow()

iii. Sqrt( )

iv. Sign( )

v. Round( )

vi. Truncate()

Returns numeric expression1 truncated to expression2 decimal places. If expression2 is 0, then the result will have no decimal point.

Pno	Pname	DOP	Company	Price	Qty
101	Router	2003-12-09	TitBit	3599.990	100
102	Switch	2005-10-06	Cosmos	3890.890	50
103	RAM	2004-01-01	Universal	2899.990	60
104	WebCam	2004-08-24	Starlite	1950.490	20
105	Memory Card	2004-07-03	PCWorks	295.000	200
106	Head Phone	2003-02-16	NULL	NULL	NULL
107	Bluetooth Headset	2005-05-19	Cosmos	1190.000	10
108	Speaker	2004-07-10	StarMark	1659.890	25

```
mysql> Select Price,TRUNCATE(Price,1)
    -> From Product;
+----------+---------------------+
| Price    | TRUNCATE(Price,1)   |
+----------+---------------------+
| 3599.990 |              3599.9 |
| 3890.890 |              3890.8 |
| 2899.990 |              2899.9 |
| 1950.490 |              1950.4 |
|  295.000 |               295.0 |
|     NULL |                NULL |
| 1190.000 |              1190.0 |
| 1659.890 |              1659.8 |
+----------+---------------------+
8 rows in set (0.00 sec)
```

Expression 1

Expression 2

MATHEMATICAL FUNCTIONS- ROUND( ) Vs TRUNCATE( )

```
mysql> Select round(54.279,1);
+------------------+
| round(54.279,1) |
+------------------+
|             54.3 |
+------------------+
1 row in set (0.00 sec)

mysql> Select round(54.279,2);
+------------------+
| round(54.279,2) |
+------------------+
|            54.28 |
+------------------+
1 row in set (0.00 sec)

mysql> Select round(54.279);
+---------------+
| round(54.279) |
+---------------+
|            54 |
+---------------+
1 row in set (0.00 sec)

mysql> Select round(54.279,0);
+------------------+
| round(54.279,0) |
+------------------+
|             54 |
+------------------+
1 row in set (0.00 sec)
```

```
mysql> Select truncate(54.279,1);
+--------------------+
| truncate(54.279,1) |
+--------------------+
|               54.2 |
+--------------------+
1 row in set (0.00 sec)

mysql> Select truncate (54.279,2);
+----------------------+
| truncate (54.279,2) |
+----------------------+
|                54.27 |
+----------------------+
1 row in set (0.00 sec)

mysql> Select truncate (54.279);
ERROR 1064 (42000): You have an error in your SQL syntax
; check the manual that corresponds to your MySQL server
 version for the right syntax to use near ')' at line 1
mysql> Select truncate (54.279,0);
+----------------------+
| truncate (54.279,0) |
+----------------------+
|                 54 |
+----------------------+
1 row in set (0.01 sec)
```

MATHEMATICAL FUNCTIONS- ROUND( ) Vs TRUNCATE( )

```
mysql> Select round(54.679);
+---------------+
| round(54.679) |
+---------------+
|            55 |
+---------------+
1 row in set (0.00 sec)

mysql> Select round(54.679,0);
+-----------------+
| round(54.679,0) |
+-----------------+
|              55 |
+-----------------+
1 row in set (0.00 sec)

mysql> Select round(54.279,-1);
+------------------+
| round(54.279,-1) |
+------------------+
|               50 |
+------------------+
1 row in set (0.00 sec)
```

```
mysql> Select truncate (54.679);
ERROR 1064 (42000): You have an error in your SQL syntax; check the
 manual that corresponds to your MySQL server version for the right
 syntax to use near ')' at line 1
mysql> Select truncate (54.679,0);
+--------------------+
| truncate (54.679,0) |
+--------------------+
|                 54 |
+--------------------+
1 row in set (0.00 sec)

mysql> Select truncate (54.279,-1);
+---------------------+
| truncate (54.279,-1) |
+---------------------+
|                  50 |
+---------------------+
1 row in set (0.00 sec)
```

MATHEMATICAL FUNCTIONS- ROUND( ) Vs TRUNCATE( )

```
mysql> Select round(324.279,-1);
+-------------------+
| round(324.279,-1) |
+-------------------+
|               320 |
+-------------------+
1 row in set (0.00 sec)

mysql> Select round(354.279,-2);
+-------------------+
| round(354.279,-2) |
+-------------------+
|               400 |
+-------------------+
1 row in set (0.00 sec)

mysql> Select round(754.279,-2);
+-------------------+
| round(754.279,-2) |
+-------------------+
|               800 |
+-------------------+
1 row in set (0.00 sec)
```

```
mysql> Select truncate (324.279,-1);
+----------------------+
| truncate (324.279,-1) |
+----------------------+
|                  320 |
+----------------------+
1 row in set (0.01 sec)

mysql> Select truncate (354.279,-2);
+----------------------+
| truncate (354.279,-2) |
+----------------------+
|                  300 |
+----------------------+
1 row in set (0.00 sec)

mysql> Select truncate (754.279,-2);
+----------------------+
| truncate (754.279,-2) |
+----------------------+
|                  700 |
+----------------------+
1 row in set (0.00 sec)
```

DATE AND TIME FUNCTIONS

DATE and TIME FUNCTIONS- CurDate( )

III. DATE and TIME FUNCTIONS

i. CurDate( ) / Current_Date( ) / Current_Date

ii. Date( )

iii. Month( )

iv. Year( )

v. Dayname( )

vi. DayofMonth( )

vii. DayofWeek( )

viii. DayofYear( )

ix. Now( )

x. Sysdate( )

Returns the current date

```
mysql> Select CURDATE();
+------------+
| CURDATE()  |
+------------+
| 2020-05-25 |
+------------+
1 row in set (0.07 sec)

mysql> Select CURRENT_DATE();
+----------------+
| CURRENT_DATE() |
+----------------+
| 2020-05-25     |
+----------------+
1 row in set (0.00 sec)

mysql> Select CURRENT_DATE;
+--------------+
| CURRENT_DATE |
+--------------+
| 2020-05-25   |
+--------------+
1 row in set (0.00 sec)
```

DATE and TIME FUNCTIONS- DATE( )

III. DATE and TIME FUNCTIONS

i. CurDate( )/ Current_Date( ) / Current_Date

ii. Date( )

iii. Month( )

iv. Year( )

v. Dayname( )

vi. DayofMonth( )

vii. DayofWeek( )

viii. DayofYear( )

ix. Now( )

x. Sysdate( )

Returns the Date part of a date or date time expression

```
mysql> Select DATE("2008-05-19 10:20:45");
+-----------------------------+
| DATE("2008-05-19 10:20:45") |
+-----------------------------+
| 2008-05-19                  |
+-----------------------------+
1 row in set (0.00 sec)
```

DATE and TIME FUNCTIONS- MONTH( )

III. DATE and TIME FUNCTIONS

i. CurDate( )/ Current_Date( ) / Current_Date

ii. Date( )

iii. Month( )

iv. Year( )

v. Dayname( )

vi. DayofMonth( )

vii. DayofWeek( )

viii. DayofYear( )

ix. Now( )

x. Sysdate( )

Returns the month from the date passed as argument.

```
mysql> Select MONTH("2008-05-19 10:20:45");
+-----------------------------------+
| MONTH("2008-05-19 10:20:45") |
+-----------------------------------+
|                                  5 |
+-----------------------------------+
1 row in set (0.00 sec)
```

```
mysql> Select DOP,MONTH(DOP)
    -> From Product;
+------------+-------------+
| DOP        | MONTH(DOP) |
+------------+-------------+
| 2003-12-09 |          12 |
| 2005-10-06 |          10 |
| 2004-01-01 |           1 |
| 2004-08-24 |           8 |
| 2004-07-03 |           7 |
| 2003-02-16 |           2 |
| 2005-05-19 |           5 |
| 2004-07-10 |           7 |
+------------+-------------+
8 rows in set (0.00 sec)
```

DATE and TIME FUNCTIONS- YEAR( )

III. DATE and TIME FUNCTIONS

i. CurDate( )/ Current_Date( ) / Current_Date

ii. Date( )

iii. Month( )

iv. Year( )

v. Dayname( )

vi. DayofMonth( )

vii. DayofWeek( )

viii. DayofYear( )

ix. Now( )

x. Sysdate( )

Returns the year from the Date argument passed.

```
mysql> Select YEAR("2008-05-19 10:20:45");
+-----------------------------------+
| YEAR("2008-05-19 10:20:45") |
+-----------------------------------+
|                                2008 |
+-----------------------------------+
1 row in set (0.00 sec)
```

```
mysql> Select DOP,YEAR(dop)
    -> From Product;
+------------+-----------+
| DOP        | YEAR(dop) |
+------------+-----------+
| 2003-12-09 |      2003 |
| 2005-10-06 |      2005 |
| 2004-01-01 |      2004 |
| 2004-08-24 |      2004 |
| 2004-07-03 |      2004 |
| 2003-02-16 |      2003 |
| 2005-05-19 |      2005 |
| 2004-07-10 |      2004 |
+------------+-----------+
8 rows in set (0.00 sec)
```

DATE and TIME FUNCTIONS- DAYNAME( )

DATE/TIME FUNCTIONS

i. CurDate()/ Current_Date()
/ Current_Date

ii. Date( )

iii. Month( )

iv. Year( )

V. Dayname( )

vi. DayofMonth( )

vii. DayofWeek( )

viii. DayofYear( )

ix. Now( )

x. Sysdate( )

Returns the name of the weekday.

```
mysql> Select DAYNAME("2008-05-19");
+-------------------------+
| DAYNAME("2008-05-19") |
+-------------------------+
| Monday                  |
+-------------------------+
1 row in set (0.00 sec)
```

```
mysql> Select DOP,DAYNAME(DOP)
    -> From Product;
+------------+--------------+
| DOP        | DAYNAME(DOP) |
+------------+--------------+
| 2003-12-09 | Tuesday      |
| 2005-10-06 | Thursday     |
| 2004-01-01 | Thursday     |
| 2004-08-24 | Tuesday      |
| 2004-07-03 | Saturday     |
| 2003-02-16 | Sunday       |
| 2005-05-19 | Thursday     |
| 2004-07-10 | Saturday     |
+------------+--------------+
8 rows in set (0.00 sec)
```

DATE and TIME FUNCTIONS- DAYOFMONTH()

DATE/TIME FUNCTIONS

i. CurDate( )/
Current_Date( ) /
Current_Date

ii. Date( )

iii. Month( )

iv. Year( )

v. Dayname( )

vi. DayofMonth( )

vii. DayofWeek( )

viii. DayofYear( )

ix. Now( )

x. Sysdate( )

Returns the Day of the Month (1-31)

```
mysql> select DAYOFMONTH('2008-05-19');
+-----------------------------+
| DAYOFMONTH('2008-05-19') |
+-----------------------------+
|                          19 |
+-----------------------------+
1 row in set (0.00 sec)
```

```
mysql> select DOP,DAYOFMONTH(DOP)
    -> from Product;
+------------+-------------------+
| DOP        | DAYOFMONTH(DOP) |
+------------+-------------------+
| 2003-12-09 |                 9 |
| 2005-10-06 |                 6 |
| 2004-01-01 |                 1 |
| 2004-08-24 |                24 |
| 2004-07-03 |                 3 |
| 2003-02-16 |                16 |
| 2005-05-19 |                19 |
| 2004-07-10 |                10 |
+------------+-------------------+
8 rows in set (0.00 sec)
```

DATE and TIME FUNCTIONS- DAYOFWEEK( )

III. DATE and TIME FUNCTIONS

i. CurDate( )/ Current_Date( ) / Current_Date

ii. Date( )

iii. Month( )

iv. Year( )

v. Dayname( )

vi. DayofMonth( )

vii. DayofWeek( )

viii. DayofYear( )

ix. Now( )

x. Sysdate( )

Returns the Day of the Week(1-7)

```
mysql> select DAYOFWEEK('2008-05-19');
+--------------------------+
| DAYOFWEEK('2008-05-19') |
+--------------------------+
|                        2 |
+--------------------------+
1 row in set (0.00 sec)
```

```
mysql> select DOP,DAYOFWEEK(DOP)
    -> from Product;
+------------+------------------+
| DOP        | DAYOFWEEK(DOP)   |
+------------+------------------+
| 2003-12-09 |                3 |
| 2005-10-06 |                5 |
| 2004-01-01 |                5 |
| 2004-08-24 |                3 |
| 2004-07-03 |                7 |
| 2003-02-16 |                1 |
| 2005-05-19 |                5 |
| 2004-07-10 |                7 |
+------------+------------------+
8 rows in set (0.00 sec)
```

DATE and TIME FUNCTIONS- DAYOFYEAR( )

III. DATE and TIME FUNCTIONS

i. CurDate( )/
Current_Date( ) /
Current_Date

ii. Date( )

iii. Month( )

iv. Year( )

v. Dayname( )

vi. DayofMonth( )

vii. DayofWeek( )

viii. DayofYear( )

ix. Now( )

x. Sysdate( )

Returns the Day of the Year.

```
mysql> select DAYOFYEAR('2008-05-19');
+--------------------------+
| DAYOFYEAR('2008-05-19') |
+--------------------------+
|                      140 |
+--------------------------+
1 row in set (0.00 sec)
```

NOTE:
A year has 365/366 days.

```
mysql> select DOP,DAYOFYEAR(DOP)
    -> from Product;
+------------+--------------------+
| DOP        | DAYOFYEAR(DOP)     |
+------------+--------------------+
| 2003-12-09 |                343 |
| 2005-10-06 |                279 |
| 2004-01-01 |                  1 |
| 2004-08-24 |                237 |
| 2004-07-03 |                185 |
| 2003-02-16 |                 47 |
| 2005-05-19 |                139 |
| 2004-07-10 |                192 |
+------------+--------------------+
8 rows in set (0.00 sec)
```

DATE and TIME FUNCTIONS-

NOW( ) and SYSDATE( )

III. DATE and TIME FUNCTIONS

i. CurDate( )/ Current_Date( ) / Current_Date
ii. Date( )
iii. Month( )
iv. Year( )
v. Dayname( )
vi. DayofMonth( )
vii. DayofWeek( )
viii. DayofYear( )
ix. Now( )
x. Sysdate( )

Now() : Returns the time at which the function executes

Sysdate() : Returns the current date and time

```
mysql> select NOW();
+---------------------+
| NOW()               |
+---------------------+
| 2020-05-29 13:56:16 |
+---------------------+
1 row in set (0.00 sec)
```

```
mysql> SELECT sysdate();
+---------------------+
| sysdate()           |
+---------------------+
| 2020-05-29 13:59:53 |
+---------------------+
1 row in set (0.00 sec)
```

DATE and TIME FUNCTIONS-

NOW( ) Vs SYSDATE( )

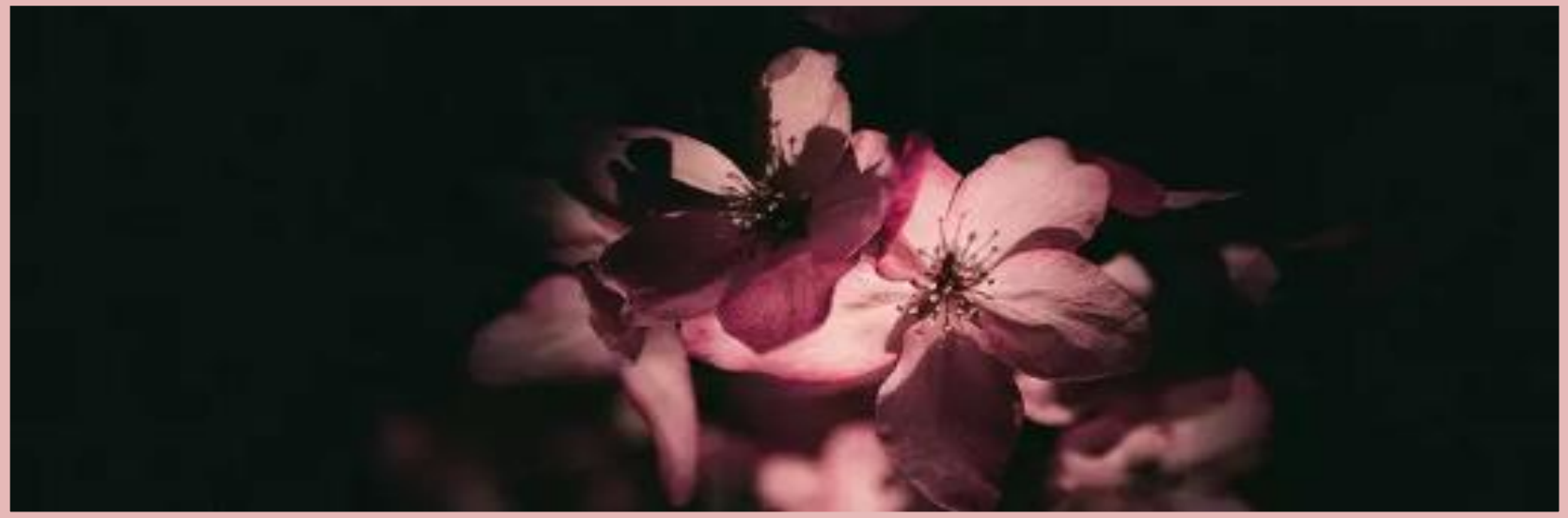
NOTE:

- **Sleep ( )** is a time delay function in seconds.
- **Now ( )** returns the same result even if used multiple time in the same query because it returns the begin –time of statement.
- **Sysdate ( )** returns the execution time i.e. at whattime it started to execute itself. Hence, the 2 secs sleep is considered in the 2nd query executed above

```
mysql> select NOW(), SLEEP(2),NOW();
+---------------------+----------+---------------------+
| NOW()               | SLEEP(2) | NOW()               |
+---------------------+----------+---------------------+
| 2020-05-29 14:32:13 |        0 | 2020-05-29 14:32:13 |
+---------------------+----------+---------------------+
1 row in set (2.00 sec)

mysql> select SYSDATE(), SLEEP(2),SYSDATE();
+---------------------+----------+---------------------+
| SYSDATE()           | SLEEP(2) | SYSDATE()           |
+---------------------+----------+---------------------+
| 2020-05-29 14:32:29 |        0 | 2020-05-29 14:32:31 |
+---------------------+----------+---------------------+
1 row in set (2.00 sec)
```

Inspirational thoughts motivational thoughts will not going to make you positive untill you will not create your own positive vibes...



Stay safe. Stay aware. Stay healthy. Stay alert.

THANK YOU
FOR YOUR
PATIENT HEARING ☺