

CONSTRUCTION COMPANY MANAGEMENT SYSTEM

ABSTRACT:

Construction is the process of constructing a building or infrastructure. Construction differs from manufacturing.

Manufacturing typically involves mass production of similar items without a designated purchaser, while construction typically takes place on location for a known client. Construction is directly tied to the fields of civil engineering and architecture. A construction company is responsible for building structures in the commercial and private sectors. In simple words, we can say that a construction company is a type of business, enterprise, or similar organization created and operating to construct a wide variety of buildings, developments, housing, path, pavement, roads, motorways, and other types of construction projects. A construction company involves lot of parameters like details of projects, employees, machinaries and raw materials.

Komal Singh

"CONSTRUCTION COMPANY MANAGEMENT SYSTEM"

➤ AIM OF PROJECT :

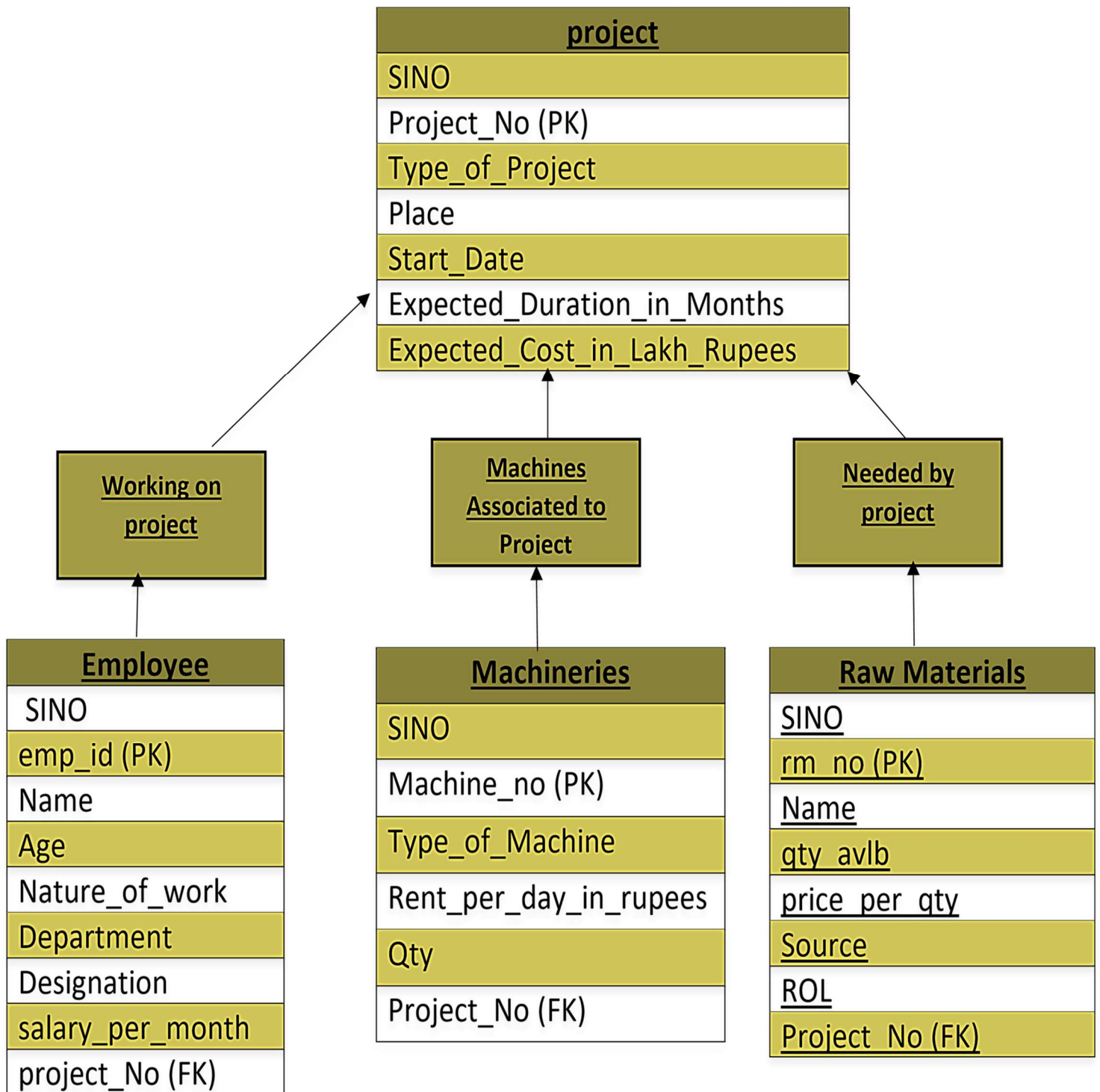
The main goal of project of construction industry is to ensure that construction projects are successfully completed within the constraints of best quality, stated period and with minimum cost possible using MYSQL

➤ INTRODUCTION :

Construction management (CM) is a professional service that uses specialized, project management techniques and software to oversee the planning, design, and construction of a project, from its beginning to its end. The purpose of Construction management is to control a project's time / delivery, cost and quality—sometimes referred to as a project management triangle or "triple constraints. CM is compatible with all project delivery systems, including design-bid-build, design-build, CM At-Risk and Public Private Partnerships. Professional construction managers may be reserved for lengthy, large-scale, high budget undertakings (commercial real estate, transportation infrastructure, industrial facilities, and military infrastructure), called capital projects.

➤ OBJECTIVE OF PROJECT :

- 1.The company will be able to easily track the details of **projects, employees, machinaries and raw materials.**
2. It will give a proper relation regarding which employees are working in which projects.
3. It will give details regarding how many raw materials are being allocated to each project.
4. It will help in tracking the machinaries linked to each project.



STRUCTURE OF TABLE

❖ PROJECTS :

```
MariaDB [mysql]> desc projects;
```

Field	Type	Null	Key	Default	Extra
S1No	int(11)	YES		NULL	
project_No	int(11)	NO	PRI	NULL	
Type_of_project	varchar(40)	YES		NULL	
Place	varchar(40)	YES		NULL	
start_Date	varchar(20)	YES		NULL	
Expected_Duration_in_Months	int(11)	YES		NULL	
Expected_cost_in_Lakh_Rupees	int(11)	YES		NULL	

7 rows in set (0.025 sec)

❖ EMPLOYEES:

```
MariaDB [mysql]> desc employees;
```

Field	Type	Null	Key	Default	Extra
S1No	int(11)	YES		NULL	
emp_id	int(11)	NO	PRI	NULL	
Name	varchar(40)	YES		NULL	
Age	int(11)	YES		NULL	
Nature_of_work	varchar(20)	YES		NULL	
Department	varchar(20)	YES		NULL	
designation	varchar(20)	YES		NULL	
salary_per_month	int(11)	YES		NULL	
Project_No	int(11)	YES	MUL	NULL	

9 rows in set (0.029 sec)

❖ MACHINERIES:

```
MariaDB [mysql]> desc employees;
```

Field	Type	Null	Key	Default	Extra
S1No	int(11)	YES		NULL	
emp_id	int(11)	NO	PRI	NULL	
Name	varchar(40)	YES		NULL	
Age	int(11)	YES		NULL	
Nature_of_work	varchar(20)	YES		NULL	
Department	varchar(20)	YES		NULL	
designation	varchar(20)	YES		NULL	
salary_per_month	int(11)	YES		NULL	
Project_No	int(11)	YES	MUL	NULL	

9 rows in set (0.029 sec)

❖ RAW MATERIALS :

```
MariaDB [mysql]> desc raw_materials;
```

Field	Type	Null	Key	Default	Extra
S1No	int(11)	YES		NULL	
rm_no	int(11)	NO	PRI	NULL	
Name	varchar(30)	YES		NULL	
qty_avlb	int(11)	YES		NULL	
price_per_qty	int(11)	YES		NULL	
source	varchar(20)	YES		NULL	
ROL	int(11)	YES		NULL	
Project_No	int(11)	YES	MUL	NULL	

```
8 rows in set (0.024 sec)
```

CONTENTS OF TABLES

1.PROJECTS :

```
MariaDB [projects]> select * from project;
```

SINO	Project_No	Type_of_Project	Place	Start_Date	Expected_Duration_in_Months	Expected_Cost_in_Lakh_Rupees
1	101	commercial_building	thane	1987	48	5000
2	102	station	mumbai	1978	30	6600
3	103	school	pune	1993	35	7000
4	104	hostel	indore	1996	36	1000
5	105	hotel	Navi_mumbai	1983	40	1500
6	106	bus_depot	mulund	2004	24	2500
7	107	college	jaipur	1995	30	5500
8	108	complex	surat	1990	25	1800
9	109	hospital	solapur	1996	10	8000
10	110	embassy	bangalore	1985	35	2800

```
10 rows in set (0.020 sec)
```


2.EMPLOYEES :

MariaDB [mysql]> select * from employees;

S1No	emp_id	Name	Age	Nature_of_work	Department	designation	salary_per_month	Project_No
1	201	gold	21	onsite	labour	cement_work	90000	1002
2	202	diksha	29	onsite	labour	cement_work	15000	NULL
3	203	depansh	25	onsite	labour	brick_work	17000	NULL
4	204	rudra	28	offsite	tech	water_work	74000	NULL
5	205	shiv	38	offsite	tech	water_work	7000	NULL
6	206	kumar	31	offsite	engineering	paint_work	4000	NULL
7	207	komal	20	onsite	data_scientist	data_analysis	80000	2121
8	208	sanjay	32	onsite	MR	data_management	15800	1890
9	209	Rajnish	31	onsite	sr_boss	data_handling	10000	2190
10	300	Diksha	29	onsite	reception	accounting	200000	2002
11	301	Dj_tillu	40	offsite	tech	supervisor	270	9
12	302	krish	21	onsite	MR	data_management	100	9990
13	303	Amrita	32	onsite	artist	Magician	15800	400
14	304	sonali	22	onsite	Doctor	dentist	443	330
15	305	Dhruv	20	onsite	pharmacist	medical	99580	9990

15 rows in set (0.001 sec)

3.MACHINERIES :

MariaDB [mysql]> select * from machineries;

S1No	Machine_no	Type_of_Machine	Rent_per_day_in_rupees	qty	Project_no
1	100	concrete_mixer_1_ton	4000	9	2001
2	101	concrete_mixer_2_ton	3020	4	2002
3	102	concrete_pump_100np	7000	10	2003
4	103	roadroller_2_ton	12020	15	2004
5	104	excavator_20_kg	1120	4	2005
6	105	bar_bending_maching	100	13	2006
7	106	bar_cutting_maching	179	23	2007
8	107	shovel	14	21	2008
9	108	sand_mesher	11	5	2009
10	109	tile_cutter	13	7	2010
11	110	welding_machine	99	121	2011
12	111	garbage_dumper_2_ton	16	9	2012

12 rows in set (0.001 sec)

4. RAW MATERIALS :

```
MariaDB [mysql]> select * from raw_materials;
```

S1No	rm_no	Name	qty_avlb	price_per_qty	source	ROL	Project_No
1	301	cement_10kg_pack	800	600	acc_cement	100	1004
2	302	cement_20kg_pack	650	1000	acc_cement	100	1007
3	303	fine_sand_20kg_pack	688	1000	ambuja_cement	600	1005
4	304	white_title_4x4_20_pack	3900	1299	ambuja_cement	600	1006
5	305	white_title_4x4_20_pack	880	129	ambuja_cement	600	1008
6	306	teak_wood	8440	12900	ambuja_cement	770	1009
7	307	rubber_wood	990	122	j&j	1100	1010
8	308	ply_wood	3535	434	raj_company	1150	1011
9	309	pop_pack	444	857	rj_company	3240	1012
10	310	grill_style_20_pack	4454	123	complex	9932	1013

```
10 rows in set (0.001 sec)
```

VIEWS

1.Create a table for employees and raw materials associated with accview project

QUERY:

```
MariaDB [projects]> create view accview as select
employees.emp_id,employees.Name, employees.salary_per_month,
raw_materials.rm_no, raw_materials.ROL from employees,raw_materials where
employees.project_No in (400,330) and raw_materials.Project_No in (1004,1005);
```

```
MariaDB [mysql]> create view accview as select employees.emp_id,employees.Name, employees.
aterials where employees.project_No in (400,330) and raw_materials.Project_No in (1004,1005
Query OK, 0 rows affected (0.077 sec)
```

```
MariaDB [mysql]> select * from accview;
```

emp_id	Name	salary_per_month	rm_no	ROL
304	sonali	443	301	100
303	Amrita	15800	301	100
304	sonali	443	303	600
303	Amrita	15800	303	600

```
4 rows in set (0.231 sec)
```

2.Create a table for the raw materials and machineries associated with residential building

QUERY:

MariaDB [projects]> create view kssview as select raw_materials.rm_no,raw_materials.Name,raw_materials.ROL, machineries.Machine_no,machineries.Type_of_Machine,machineries.qty from raw_materials, machineries where raw_materials.Project_No in(1005,1006) and machineries.project_no in(2001,2009);

```
MariaDB [mysql]> create view kssview as select raw_materials.rm_no,raw_materials.Name,raw
qty from raw_materials, machineries where raw_materials.Project_No in(1005,1006) and mach
Query OK, 0 rows affected (0.008 sec)
```

```
MariaDB [mysql]> select * from kssview;
```

rm_no	Name	ROL	Machine_no	Type_of_Machine	qty
303	fine_sand_20kg_pack	600	100	concrete_mixer_1_ton	9
304	white_title_4x4_20_pack	600	100	concrete_mixer_1_ton	9
303	fine_sand_20kg_pack	600	108	sand_mesher	5
304	white_title_4x4_20_pack	600	108	sand_mesher	5

```
4 rows in set (0.003 sec)
```

3.Show the employee and machineries associated with golview.

QUERY:

MariaDB [projects]> create view golview as select employees.Name,employees.emp_id,machineries.qty from employees,machineries where employees.S1No in (3,4) and machineries.S1No in (3,4);

```
Query OK, 0 rows affected (0.007 sec)
```

```
MariaDB [mysql]> select * from golview;
```

Name	emp_id	qty
depansh	203	10
depansh	203	15
rudra	204	10
rudra	204	15

4. Update the detail of view:

QUERY:

MariaDB [mysql]> update golview set qty=90 where emp_id=203;

```
MariaDB [mysql]> update golview set qty=90 where emp_id=203;
Query OK, 2 rows affected (0.008 sec)
Rows matched: 2  Changed: 2  Warnings: 0
```

```
MariaDB [mysql]> select * from golview;
```

Name	emp_id	qty
depansh	203	90
depansh	203	90
rudra	204	90
rudra	204	90

Joins

➤ 1.Left join :

QUERY:

MariaDB [projects]> select e.emp_id,e.Name,e.designation,
p.Type_of_project,p.start_date from employees e left join projects p on
e.S1No=p.S1No;

```
MariaDB [mysql]> select e.emp_id,e.Name,e.designation,p.Type_of_project,p.start_date
from employees e left join projects p on e.S1No=p.S1No;
```

emp_id	Name	designation	Type_of_project	start_date
201	gold	cement_work	commercial_building	2020-10-23
202	diksha	cement_work	complex	2021-08-03
203	depansh	brick_work	residential_building	2019-10-12
204	rudra	water_work	hotel	2019-08-12
205	shiv	water_work	hospital	2016-12-14
206	kumar	paint_work	school	2021-11-03
207	komal	data_analysis	embassy	2021-09-21
208	sanjay	data_management	parliament	2021-12-31
209	Rajnish	data_handling	bus_depot	2023-05-01
300	Diksha	accounting	raval_facility	2019-02-23
0	komal	NULL	NULL	NULL
301	Dj_tillu	supervisor	NULL	NULL
302	krish	data_management	NULL	NULL
303	Amrita	Magician	NULL	NULL
304	sonali	dentist	NULL	NULL
305	Dhruv	medical	NULL	NULL

16 rows in set (0.002 sec)

➤ 2.Right Join :

QUERY: MariaDB [projects]> select e.emp_id,e.Name,e.designation,
p.Type_of_project,p.start_date from employees e right join projects p on
e.S1No=p.S1No;

```
MariaDB [mysql]> select e.emp_id,e.Name,e.designation,p.type_of_project,p.start_date
```

emp_id	Name	designation	Type_of_project	start_date
201	gold	cement_work	commercial_building	2020-10-23
202	diksha	cement_work	complex	2021-08-03
203	depansh	brick_work	residential_building	2019-10-12
204	rudra	water_work	hotel	2019-08-12
205	shiv	water_work	hospital	2016-12-14
206	kumar	paint_work	school	2021-11-03
207	komal	data_analysis	embassy	2021-09-21
208	sanjay	data_management	parliament	2021-12-31
209	Rajnish	data_handling	bus_depot	2023-05-01
300	Diksha	accounting	raval_facility	2019-02-23

➤ 3.Cross join :

QUERY:

MariaDB [projects]> select e.emp_id,e.Name,e.designation,
p.Type_of_project,p.start_date from employees e cross join projects p on
e.S1No=p.S1No;

emp_id	Name	designation	Type_of_project	start_date
201	gold	cement_work	commercial_building	2020-10-23
202	diksha	cement_work	complex	2021-08-03
203	depansh	brick_work	residential_building	2019-10-12
204	rudra	water_work	hotel	2019-08-12
205	shiv	water_work	hospital	2016-12-14
206	kumar	paint_work	school	2021-11-03
207	komal	data_analysis	embassy	2021-09-21
208	sanjay	data_management	parliament	2021-12-31
209	Rajnish	data_handling	bus_depot	2023-05-01
300	Diksha	accounting	raval_facility	2019-02-23

➤ 4.Inner join:

QUERY: MariaDB [projects]> select e.emp_id,e.Name,e.designation, p.Type_of_project,p.start_date from employees e inner join projects p on e.S1No=p.S1No;

emp_id	Name	designation	Type_of_project	start_date
201	gold	cement_work	commercial_building	2020-10-23
202	diksha	cement_work	complex	2021-08-03
203	depansh	brick_work	residential_building	2019-10-12
204	rudra	water_work	hotel	2019-08-12
205	shiv	water_work	hospital	2016-12-14
206	kumar	paint_work	school	2021-11-03
207	komal	data_analysis	embassy	2021-09-21
208	sanjay	data_management	parliament	2021-12-31
209	Rajnish	data_handling	bus_depot	2023-05-01
300	Diksha	accounting	raval_facility	2019-02-23

10 rows in set (0.001 sec)

SUBQUERIES

➤ 1. Show the all the details of all the employees associated with hotel projects having salary> 10000

Query :

MariaDB [projects]> select * from employees where S1No in (select S1No from projects where Type_of_project="hotel") having salary_per_month>10000;

```
MariaDB [mysql]> select * from employees where S1No in (select S1No from projects where Type_of_project="hotel") having salary_per_month>=10000;
```

S1No	emp_id	Name	Age	Nature_of_work	Department	designation	salary_per_month	Project_No
4	204	rudra	28	offsite	tech	water_work	74000	NULL

row in set (0.002 sec)

- **2.Show all the details of machineries and raw materials associated with projects having estimation > 3000 lakh crores**

Query :

MariaDB [projects]> select * from machineries where S1No in (select S1No from projects where Expected_cost_in_Lakh_Rupees>3000);

```
MariaDB [mysql]> select * from machineries where S1No in (select S1No from projects where Expected_cost_in_Lakh_Rupees>3000);
```

S1No	Machine_no	Type_of_Machine	Rent_per_day_in_rupees	qty	Project_no
1	100	concrete_mixer_1_ton	4000	9	2001
2	101	concrete_mixer_2_ton	3020	4	2002
6	105	bar_bending_maching	100	13	2006
8	107	shovel	14	21	2008
9	108	sand_mesher	11	5	2009
10	109	tile_cutter	13	7	2010

6 rows in set (0.002 sec)

- **3. Show all the raw materials for college projects where qty available is more than 800.**

QUERY :

MariaDB [projects]>select * from raw_materials where S1No in (select S1No from projects where Type_of_project="embassy") having qty_avlb>800;

```
MariaDB [mysql]> select * from raw_materials where S1No in (select S1No from projects where Type_of_project="embassy") having qty_avlb>800;
```

S1No	rm_no	Name	qty_avlb	price_per_qty	source	ROL	Project_No
7	307	rubber_wood	990	122	j&j	1100	1010

1 row in set (0.001 sec)

BUILT-IN FUNCTIONS

1.MATH

2.STRING

3.DATETIME

4.AGGREGATE

```

MariaDB [mysql]> select abs(-1900);
+-----+
| abs(-1900) |
+-----+
|      1900 |
+-----+
1 row in set (0.005 sec)

MariaDB [mysql]> select ascii("K");
+-----+
| ascii("K") |
+-----+
|         75 |
+-----+
1 row in set (0.002 sec)

MariaDB [mysql]> select char(65),char(97),char(82),char(77);
+-----+-----+-----+-----+
| char(65) | char(97) | char(82) | char(77) |
+-----+-----+-----+-----+
| A        | a        | R        | M        |
+-----+-----+-----+-----+
1 row in set (0.003 sec)

MariaDB [mysql]> select ord("M"),ord("A"),ord("C"),ord("H"),ord("I"),ord("N");
+-----+-----+-----+-----+-----+-----+
| ord("M") | ord("A") | ord("C") | ord("H") | ord("I") | ord("N") |
+-----+-----+-----+-----+-----+-----+
|        77 |        65 |        67 |        72 |        73 |        78 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.005 sec)

```

```

MariaDB [(none)]> select curtime();
+-----+
| curtime() |
+-----+
| 03:43:37 |
+-----+
1 row in set (0.001 sec)

MariaDB [(none)]> select substr(" construction company management system ",5);
+-----+-----+
| substr(" construction company management system ",5) |
+-----+-----+
| struction company management system                    |
+-----+-----+
1 row in set (0.000 sec)

MariaDB [(none)]> select rtrim (" i am doing work ") as trim;
+-----+
| trim |
+-----+
| i am doing work |
+-----+
1 row in set (0.001 sec)

MariaDB [(none)]> select insert("construction" , 3,5,"sss");
+-----+-----+
| insert("construction" , 3,5,"sss") |
+-----+-----+
| cossction |
+-----+-----+
1 row in set (0.001 sec)

```

```
MariaDB [mysql]> select max(project_no) from employees;
+-----+
| max(project_no) |
+-----+
|          9990 |
+-----+
1 row in set (0.001 sec)

MariaDB [mysql]> select hour(sysdate());
+-----+
| hour(sysdate()) |
+-----+
|             3 |
+-----+
1 row in set (0.001 sec)
```

THANK YOU