

# **COMMISSION CALCULATOR**

**PROJECT Report**

*Submitted by*

**RIJU TIWARI RA1911028010086**

**TANMAY CHAUHAN RA1911028010092**

**ABDUL HADI RUMANEYRA1911028010093**

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## **ABSTRACT**

Commission calculator is a tool which helps us calculate commission on the sales done by the employee. What we plan is to implement a system which ease the job of the admin. It would basically calculate the commissions on the total sales value done by an employee on a given date. The system allows the registered admin to login to its module. Then the admin enters the sales value and the commission is calculated on the sales value.

### **Functionalities:**

#### **Login:**

Admin logs in to the module using the registered the credentials.

#### **Add Employee:**

Add the new employee to the system.

#### **Entry:**

Admin selects employee from the system database. After that the admin enters the total sales value on the given date. The system calculates the commission on the given amount based on the constraint set. Then the commission value is added to the earning/pay-out section.

#### **Pay-out:**

The admin goes to the pay-out section and enters the amount to be paid to the employee. The paid amount is deducted from the pay-out section of the database.





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## LIST OF ABBREVIATIONS

Abbreviations	Description
#	Primary Key of an entity
*	Normal Attribute
	Entity
	Relationship type
A: B	Cardinality between entities
	Straight Relationship line
	Relationship arrow with head

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# INTRODUCTION

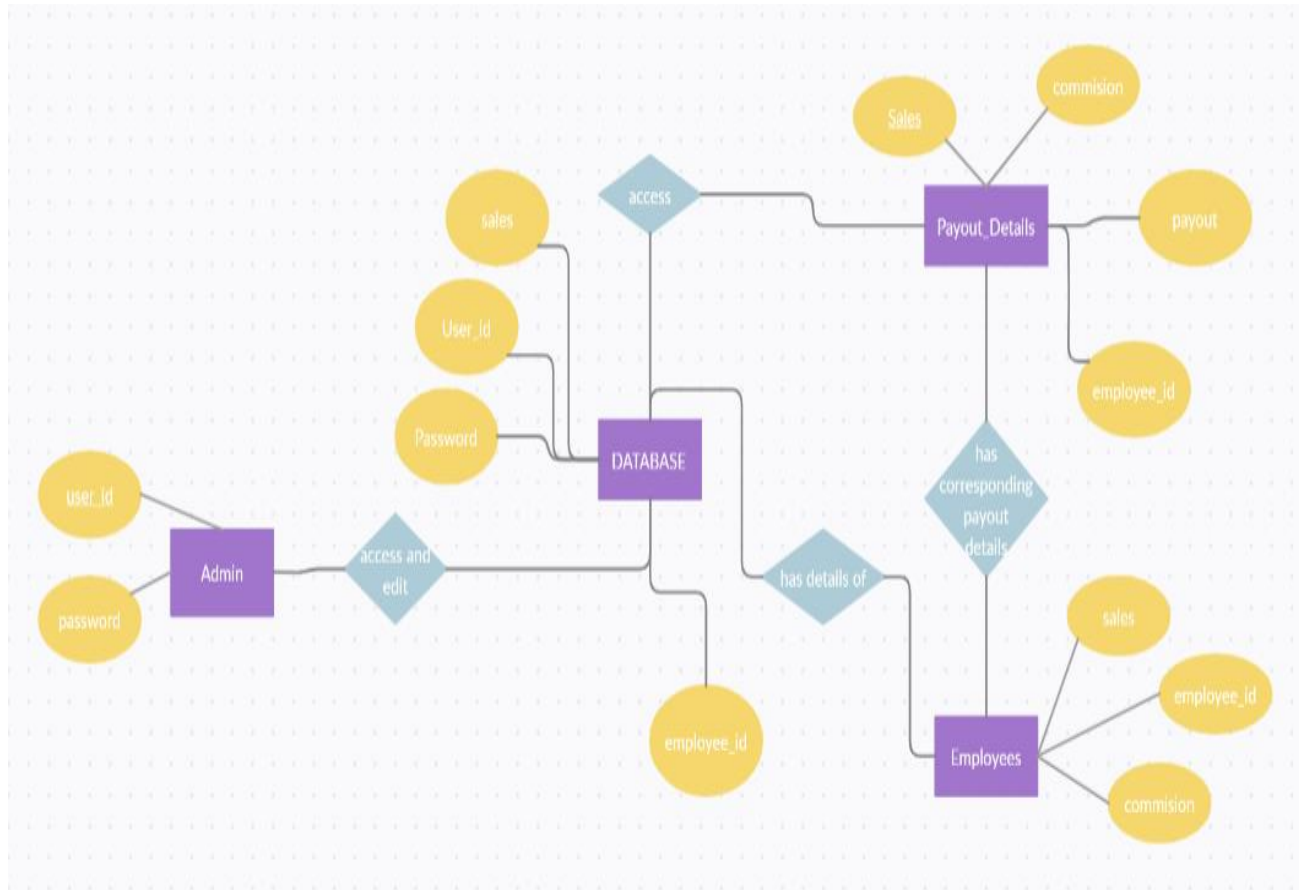
This is a Commission Calculator which has different entities related with each other. Our commission calculators' main purpose is to calculate commission based on the sales of the employee. There are three main section/parts of our commission calculator. First, the login module which allows admin to login to our system. This module is connected to one of our database tables containing the login credentials of all the admin accounts. Once admin logs in to our system he has three main options, to add an employee, to calculate commission and to pay out the commission value.

Add an employee section is used to add new employees to the system through a GUI interface. This model is connected to the table which stores the employee details.

Calculate commission is the module used to calculate the commission of the employee based on the sales value. Here the admin just has to choose the employee and add the sales value of that particular employee and the GUI will display the calculated commission of that employee. This module is connected to the another called CALC which stores the sales and commission value of the employee.

Last module is the pay-out module, where the admin has to choose the emp id and click on pay out button, what it does is it clears the commission value stored in the CALC table indicating that all the previous dues has been cleared by the company.

# Entity Relationship Diagram



## Components of ERD

### Entities

#### Admin

This entity contains login credentials of the Administrator. It has two attributes namely *user\_id* and *password*.

#### Database

This entity contains records of employees and their sales, login id of Administrator and its details. It has the *employee\_id* and *sales* attributes to keep track of sales of an employee. And *user\_id* and *password* keep track of login data of administrator.



## Employees

This entity contains records of employees. It consists of the employee\_id, sales and commission attributes. These attributes help us keep track of sales and earnings of the employees.

## Payout

This entity contains records of payout of the employees. It contains sales, commission, payout and employee\_id attribute which help keep track of the payouts of the employees and their earnings.

## Cardinality

### Admin and Database

One to One

### Database and Employee

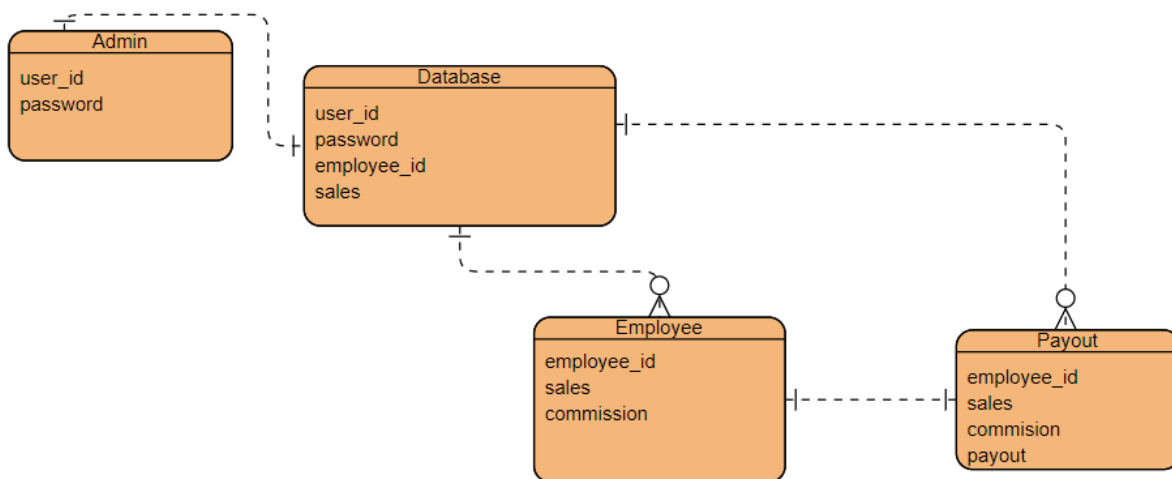
One to many

### Database and Payout

One to many

### Employee and Payout

One to One



## Normalized Database Table

When the above ER diagram is converted to relational model as we move from conceptual design to logical design we get 3 relations or tables. All these tables will be in 1NF as belong to RDBMS. In all these relations only, the unique attribute reserves the ability to uniquely determine all the other prime as well as non-prime attributes.

```
mysql> show tables;
+-----+
| Tables_in_commission |
+-----+
| admin                 |
| calc                  |
| emp                   |
+-----+
3 rows in set (0.00 sec)
```

**ADMIN:**

```
mysql> desc ADMIN;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| usrId | varchar(25)   | NO   | PRI | NULL    |       |
| pass  | varchar(25)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

## EMP:

```
mysql> desc EMP;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| empid | int           | NO   | PRI | NULL    |       |
| ename | varchar(255)  | YES  |     | NULL    |       |
| loc   | varchar(255)  | YES  |     | NULL    |       |
| sal   | int           | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

## CALC:

```
mysql> desc CALC;
+-----+-----+-----+-----+-----+-----+
| Field      | Type   | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| empId      | int    | YES  | MUL | NULL    |               |
| sales      | int    | YES  |     | NULL    |               |
| commision  | double | YES  |     | NULL    | VIRTUAL GENERATED |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)
```

## SQL QUERIES WITH RESULTS

```
mysql> show tables;
+-----+
| Tables_in_commission |
+-----+
| admin                 |
| calc                  |
| emp                   |
+-----+
3 rows in set (0.00 sec)
```

```
mysql> select * from ADMIN;
+-----+-----+
| usrId | pass  |
+-----+-----+
| abc   | 12345 |
| xyz   | 123456|
+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> select * from CALC;
+-----+-----+-----+
| empId | sales | commision |
+-----+-----+-----+
| 111   | 10000 | 1000      |
| 123   | 5000  | 500       |
| 149   | 90000 | 9000      |
| 156   | NULL  | NULL      |
+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> select * from EMP;
```

empid	ename	loc	sal
111	abc	chennai	10000
112	abcd	chennai	10000
113	abce	chennai	10000
114	abc a	chennai	10000
115	abc c	chennai	10000
116	abc d	chennai	10000
117	abc q	chennai	10000
118	abc a	chennai	10000
119	ab a	chennai	10000
120	ab b	chennai	10000
121	a a	chennai	10000
122	XYZ	Mumbai	10000
123	a c	chennai	10000
124	a d	chennai	10000
125	a w	chennai	10000
126	a e	chennai	10000
127	abq	chennai	10000
128	abl	chennai	10000
129	pqr	chennai	10000
130	xyz	chennai	10000
131	axy	chennai	10000
132	aaa	chennai	10000
133	lll	chennai	10000
134	aqwe	chennai	10000
135	lmn	chennai	10000
136	jkl	chennai	10000
137	qyu	chennai	10000
138	lzz	chennai	10000
139	az	chennai	10000
140	ac	chennai	10000
141	abc tt	chennai	10000
142	abc tv	chennai	10000
143	abc tx	chennai	10000
144	ab tc	chennai	10000
145	abc pl	chennai	10000
146	abc pq	chennai	10000
147	abc qw	chennai	10000
148	abc qq	chennai	10000
149	abc ql	chennai	10000
150	abc qm	chennai	10000
151	abc ww	chennai	10000
152	abc qq	chennai	10000
153	abc qp	chennai	10000
154	abc ql	chennai	10000
155	abc wi	chennai	10000
156	abc wz	chennai	10000
157	abc wq	chennai	10000
158	abc wr	chennai	10000
159	abc pq	chennai	10000
160	abc p	chennai	10000
161	abc o	chennai	10000
162	abc d	chennai	10000
163	abc s	chennai	10000
164	abc q	chennai	10000
165	abc a	chennai	10000
166	abc l	chennai	10000
167	abl	chennai	10000
168	aba	chennai	10000
169	ab q	chennai	10000
170	pbc	chennai	10000
420	riju	Kanpur	450000



```
mysql> insert into CALC(empId,sales) values(149,90000);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> select * from CALC;
```

empId	sales	commision
111	10000	1000
123	5000	500
149	90000	9000

3 rows in set (0.00 sec)

```
mysql> update CALC SET sales=NULL where empId='111';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> select * from CALC;
```

empId	sales	commision
111	NULL	NULL
123	5000	500
149	90000	9000

3 rows in set (0.00 sec)

## SQL WORKBENCH:

```
1 • create database commission;
2
3 • use commission;
4
5 -- creating a table to store user id and password
6 • ○ create table ADMIN(
7     |     usrId varchar(25) PRIMARY KEY,
8     |     pass varchar(25)
9     | );
10
11 -- create TABLE emp which contains emp details
12 • ○ create table EMP(
13     |     empId Integer PRIMARY KEY,
14     |     ename varchar(255),
15     |     loc varchar(255),
16     |     sal INTEGER
17     | );
18
19 -- creating a table to calaculate commision
20 • ○ CREATE TABLE CALC(
21     |     empId INTEGER,
22     |     sales INTEGER,
23     |     commision double as (sales*0.10),
24     |     FOREIGN KEY (empId) REFERENCES EMP(empId)
25     | );
26
```

```

28 • insert into ADMIN value('xyz','123456');
29
30 • insert into EMP values(112,'abcd','chennai',10000);
31 • insert into EMP values(113,'abce','chennai',10000);
32 • insert into EMP values(114,'abc a','chennai',10000);
33 • insert into EMP values(115,'abc c','chennai',10000);
34 • insert into EMP values(116,'abc d','chennai',10000);
35 • insert into EMP values(117,'abc q','chennai',10000);
36 • insert into EMP values(118,'abc a','chennai',10000);
37 • insert into EMP values(119,'ab a','chennai',10000);
38 • insert into EMP values(120,'ab b','chennai',10000);
39 • insert into EMP values(121,'a a','chennai',10000);
40 • insert into EMP values(123,'a c','chennai',10000);
41 • insert into EMP values(124,'a d','chennai',10000);
42 • insert into EMP values(125,'a w','chennai',10000);
43 • insert into EMP values(126,'a e','chennai',10000);
44 • insert into EMP values(127,'abq','chennai',10000);
45 • insert into EMP values(128,'abl','chennai',10000);
46 • insert into EMP values(129,'pqr','chennai',10000);
47 • insert into EMP values(130,'xyz','chennai',10000);
48 • insert into EMP values(131,'axy','chennai',10000);
49 • insert into EMP values(132,'aaa','chennai',10000);
50 • insert into EMP values(133,'lll','chennai',10000);
51 • insert into EMP values(134,'aqwe','chennai',10000);
52 • insert into EMP values(135,'lmn','chennai',10000);
53 • insert into EMP values(136,'jkl','chennai',10000);
54 • insert into EMP values(137,'qyu','chennai',10000);
55 • insert into EMP values(138,'lzz','chennai',10000);

```



```

56 • insert into EMP values(139,'az','chennai',10000);
57 • insert into EMP values(140,'ac','chennai',10000);
58 • insert into EMP values(141,'abc tt','chennai',10000);
59 • insert into EMP values(142,'abc tv','chennai',10000);
60 • insert into EMP values(143,'abc tx','chennai',10000);
61 • insert into EMP values(144,'ab tc','chennai',10000);
62 • insert into EMP values(145,'abc pl','chennai',10000);
63 • insert into EMP values(146,'abc pq','chennai',10000);
64 • insert into EMP values(147,'abc qw','chennai',10000);
65 • insert into EMP values(148,'abc qq','chennai',10000);
66 • insert into EMP values(149,'abc ql','chennai',10000);
67 • insert into EMP values(150,'abc qm','chennai',10000);
68 • insert into EMP values(151,'abc ww','chennai',10000);
69 • insert into EMP values(152,'abc qq','chennai',10000);
70 • insert into EMP values(153,'abc qp','chennai',10000);
71 • insert into EMP values(154,'abc ql','chennai',10000);
72 • insert into EMP values(155,'abc wi','chennai',10000);
73 • insert into EMP values(156,'abc wz','chennai',10000);
74 • insert into EMP values(157,'abc wq','chennai',10000);
75 • insert into EMP values(158,'abc wr','chennai',10000);
76 • insert into EMP values(159,'abc pq','chennai',10000);
77 • insert into EMP values(160,'abc p','chennai',10000);
78 • insert into EMP values(161,'abc o','chennai',10000);
79 • insert into EMP values(162,'abc d','chennai',10000);
80 • insert into EMP values(163,'abc s','chennai',10000);
81 • insert into EMP values(164,'abc q','chennai',10000);
82 • insert into EMP values(165,'abc a','chennai',10000);

```

```

83 • insert into EMP values(166,'abc l','chennai',10000);
84 • insert into EMP values(167,'abl ','chennai',10000);
85 • insert into EMP values(168,'aba','chennai',10000);
86 • insert into EMP values(169,'ab q','chennai',10000);
87 • insert into EMP values(170,'pbc','chennai',10000);
88
90
91 • insert into CALC(empId,sales) values(149,90000);
92
93 • select * from ADMIN;
94 • select * from EMP;
95 • Select * from CALC;
96
97
98 • update CALC SET sales=NULL where empId='111';
99

```

## SQL COMMANDS IN PYTHON:

To set values to null after paying out the commission:

```

49     if(num==0):
50         empDEL = "update CALC SET sales=NULL where empId=%s"
51         print(a)
52         del_emp = (a,)
53
54         cursor.execute(empDEL, del_emp)
55
56         conn.commit()
57         cursor.close()
58         conn.close()
59

```

## Inserting employees into EMP table:

```
49  ✓      if(num==0):
50          empAdd = " insert into EMP VALUES (%s,%s,%s,%s)"
51
52          insert_emp = (a, b, c, d)
53
54          cursor.execute(empAdd, insert_emp)
55
56          conn.commit()
57          cursor.close()
58          conn.close()
```

## Inserting sales values into CALC and returning commission:

```
52  ✓      def buttonclick(self,num):
53  ✓          if(num==0):
54              a=int(self.clicked.get())
55              b=self.e3.get()
56
57              com = " insert into CALC(empId, sales) VALUES (%s,%s)"
58              cursor.execute(com,(a,b))
59              conn.commit()
60
61              com_calc = "SELECT commision from CALC WHERE empId=%s"
62              com_cursor.execute(com_calc,(a,))
63              com_calc = com_cursor.fetchall()
64
65              lis=[i[0] for i in com_calc]
66
67              self.e4=Label(text=str(lis[-1]),width=30,fg="black",bg="white",font=('Calibri',14))
68              self.e4.place(x=250,y=200)
69
70              cursor.close()
71              conn.close()
```

## Fetch password from ADMIN table:

```
1 # fetches password form DB
2
3 import mysql.connector
4
5 def matchID(id,pw):
6     conn=mysql.connector.connect(host='localhost',database='commission',user='root',password='123456')
7     cursor=conn.cursor()
8     conn.commit()
9
10    pwd = "SELECT pass from ADMIN where usrId=%s and pass=%s"
11    cursor.execute(pwd,(id,pw))
12    pwd = cursor.fetchone()
13
14    conn.close()
15
16    return pwd[0]
```

## List all the emp id in the drop-down bar by fetching it from the EMP table:

```
1 # Fetches IDs from DB
2
3 import mysql.connector
4
5 def db_dropdown():
6     conn=mysql.connector.connect(host='localhost',database='commission',user='root',password='123456')
7     cursor=conn.cursor()
8     conn.commit()
9
10    sql = 'SELECT empid FROM EMP'
11
12    cursor.execute(sql)
13    list_tested = cursor.fetchall()
14    list_tested = [i for sub in list_tested for i in sub]
15
16    return list_tested
```

## **Conclusion**

The above obtained relational model derived from an abstracted ER diagram successfully manages to calculate commission based on the sales done by the respective employee. Therefore, our model can be used by an admin to easily calculate the value of commission just by entering the sales done by the employee. Also, it helps the admin track the commission due and once the commission is paid admin can reset the value by using the pay-out module of our project.

## **Future Work**

We are planning to introduce a tier-based commission calculation system which will allow us to give different commission percentage based on their sales.

We are also planning to introduce a employee detail section which will give out information like their sales number, sales location and date.

## **References**

- DBMS Text Book by Abraham Silberscha and Henry F. Korth
- tutorialspoint
- W3schools