

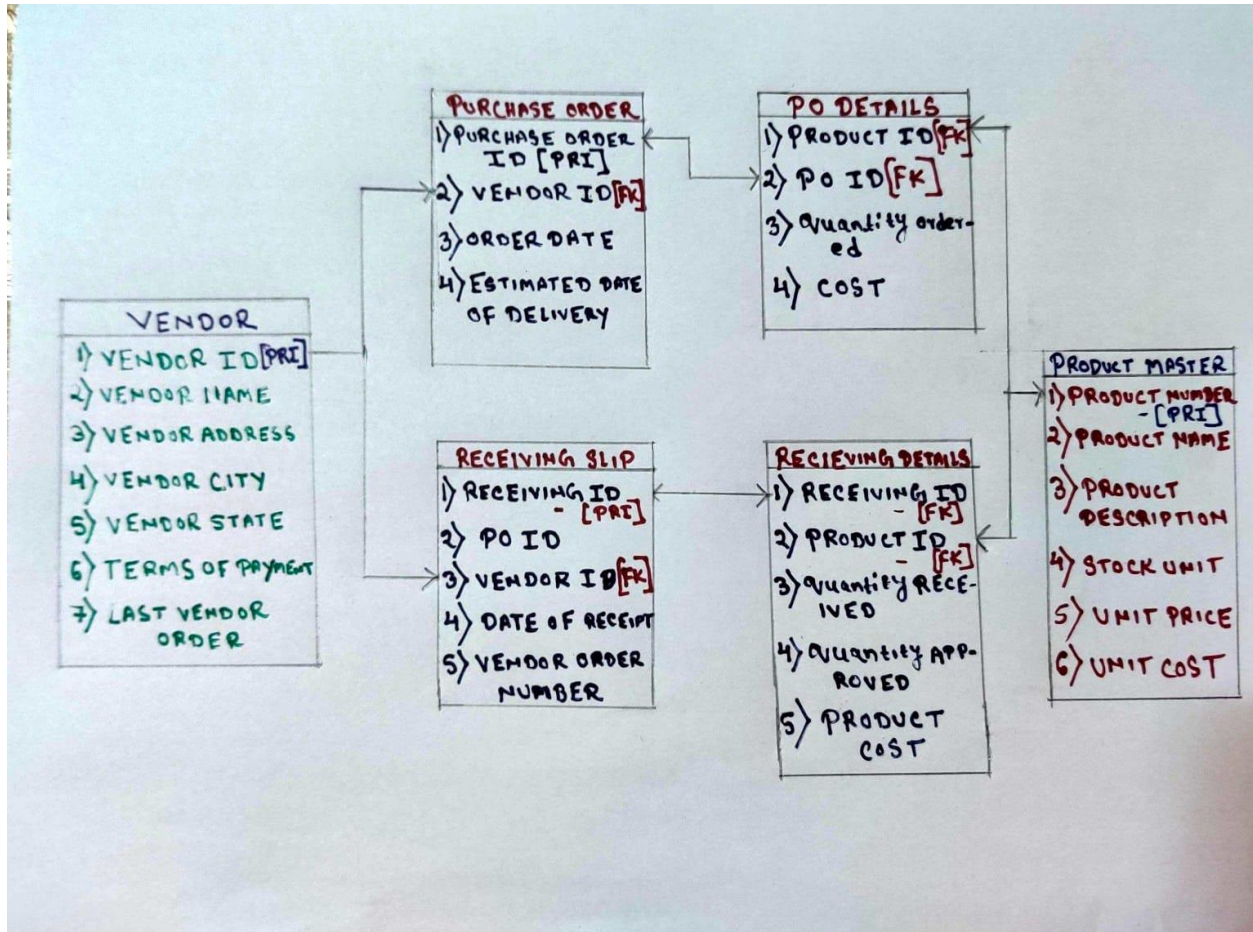
TOPIC:

**INVENTORY  
MANAGEMENT  
SYSTEM**

## **1.INTRODUCTION**

This project is aimed to develop a database named Inventory Management System for managing the inventory system of any organization. The Inventory Management System (IMS) refers to the system and processes to manage the stock of the organization with the involvement of Technology system. This system can be used to store the details of the inventory, stock maintenance ,update the inventory based on the sales details, generate sales and inventory report daily or weekly based.

## 2. ER DIAGRAM



### 3. DATABASE DESIGN

DATABASE: **INVENTORY\_MANAGEMENT\_SYSTEM**

TABLES:

- + VENDOR
- + PURCHASE\_ORDER
- + RECEIVING\_SLIP
- + PO\_DETAILS
- + RECEIVING\_DETAILS
- + PRODUCT\_MASTER

MySQL 8.0 Command Line Client - Unicode

```
mysql> show tables;
+-----+
| Tables_in_inventory_management_system |
+-----+
| po_details                            |
| product_master                        |
| purchase_order                        |
| receiving_slip                        |
| recieving_details                     |
| vendor                                |
+-----+
6 rows in set (0.00 sec)

mysql> _
```

## DESCRIBE TABLES:

### VENDOR:

MySQL 8.0 Command Line Client

```
mysql> use inventory_management_system;
Database changed
mysql> desc vendor;
```

Field	Type	Null	Key	Default	Extra
Vendor_id	int	NO	PRI	NULL	
Vendor_name	varchar(50)	YES		NULL	
vendor_address	varchar(50)	YES		NULL	
Vendor_city	varchar(50)	YES		NULL	
vendor_state	varchar(50)	YES		NULL	
terms_of_payment	varchar(50)	YES		NULL	
last_vendor_order	date	YES		NULL	

7 rows in set (0.04 sec)

### PURCHASE\_ORDER:

```
mysql> use inventory_management_system;
Database changed
mysql> desc purchase_order;
```

Field	Type	Null	Key	Default	Extra
PO_id	int	NO	PRI	NULL	
vendor_id	int	YES	MUL	NULL	
order_date	date	YES		NULL	
estimated_date_delivery	date	YES		NULL	

4 rows in set (0.00 sec)

## RECEIVING SLIP:

```
mysql> desc receiving_slip;
```

Field	Type	Null	Key	Default	Extra
Receiving_id	int	NO	PRI	NULL	
po_id	int	YES		NULL	
vendor_id	int	YES	MUL	NULL	
date_of_receipt	date	YES		NULL	
vendor_order_number	int	YES		NULL	

```
5 rows in set (0.00 sec)
```

## PO DETAILS:

```
mysql> desc po_details;
```

Field	Type	Null	Key	Default	Extra
product_id	int	YES	MUL	NULL	
po_id	int	YES	MUL	NULL	
quantity_ordered	varchar(50)	YES		NULL	
cost	varchar(50)	YES		NULL	

```
4 rows in set (0.00 sec)
```

```
mysql> _
```

## RECIEVING DETAILS:

```
mysql> desc recieving_details;
```

Field	Type	Null	Key	Default	Extra
receiving_id	int	YES	MUL	NULL	
product_id	int	YES	MUL	NULL	
quantity_received	varchar(50)	YES		NULL	
quantity_approved	varchar(50)	YES		NULL	
product_cost	int	YES		NULL	

```
5 rows in set (0.02 sec)
```



## PRODUCT\_MASTER:

```
mysql> desc product_master;
```

Field	Type	Null	Key	Default	Extra
product_number	int	NO	PRI	NULL	
product_name	varchar(50)	YES		NULL	
product_description	varchar(50)	YES		NULL	
stock_unit	varchar(50)	YES		NULL	
unit_price	varchar(50)	YES		NULL	
unit_cost	varchar(50)	YES		NULL	

6 rows in set (0.00 sec)

## TABLES :

### VENDOR:

>>> **SELECT\* FROM VENDOR:**

### OUTPUT:

```
mysql> select* from vendor;
```

Vendor_id	Vendor_name	vendor_address	Vendor_city	vendor_state	terms_of_payment	last_vendor_order
211	aramex	dubai24. avenue	dubai	gulf	cheque	2002-02-21
212	marpol3	thane16.jax	mumbai	maharashtra	cheque	2003-03-21
213	sammarine14	bilaspur5.fax	bilaspur	chatisgarh	cash	2004-04-21
214	sadhav8	csmt5.mar	mumbai	maharashtra	cheque	2006-06-21
215	gpmarine4	turbhe.mum	navi mumbai	maharashtra	cheque	2007-07-22
216	morya engines ltd	panvel.navmum	navi mumbai	maharashtra	cheque	2008-08-22

6 rows in set (0.00 sec)

### PURCHASE ORDER:

>>>SELECT\* FROM PURCHASE\_ORDER;

OUTPUT:

```
mysql> select* from purchase_order;
```

PO_id	vendor_id	order_date	estimated_date_delivery
341	211	2021-06-18	2021-06-29
342	212	2021-07-18	2021-07-24
343	213	2021-07-25	2021-08-24
344	214	2021-08-25	2021-08-30
345	215	2022-08-25	2022-09-30
346	216	2022-09-25	2022-10-10

```
6 rows in set (0.03 sec)
```

### RECEIVING SLIP:

>>>SELECT\* FROM RECEIVING\_SLIP;

OUTPUT:

```
mysql> select* from receiving_slip;
```

Receiving_id	po_id	vendor_id	date_of_receipt	vendor_order_number
51	341	211	2021-06-29	101
52	342	212	2021-07-29	102
53	343	213	2021-08-24	103
54	344	214	2021-08-30	104
55	345	215	2022-09-30	105
56	346	216	2022-10-10	106

```
6 rows in set (0.02 sec)
```

### PO DETAILS:

>>>SELECT\* FROM PO\_DETAILS;



## OUTPUT:

```
mysql> select* from po_details;
```

product_id	po_id	quantity_ordered	cost
12	341	15 pc	10,000 Rs
13	342	20 pc	15,000 Rs
14	343	25 pc	20,000 Rs
15	344	25 pc	30,000 Rs
16	345	28 pc	38,000 Rs
17	346	35 pc	40,000 Rs

```
6 rows in set (0.00 sec)
```

## RECIEVING DETAILS;

>>>SELECT\* FROM RECIEVING\_DETAILS;

```
mysql> select* from recieving_details;
```

receiving_id	product_id	quantity_received	quantity_approved	product_cost
51	12	15 pc	15 pc	10000
52	13	20 pc	20 pc	15000
53	14	25 pc	25 pc	20000
54	15	25 pc	25 pc	30000
55	16	28 pc	28 pc	38000
56	17	35 pc	35 pc	40000

```
6 rows in set (0.00 sec)
```

## PRODUCT MASTER:

>>>SELECT\* FROM PRODUCT\_MASTER;

## OUTPUT:

```
mysql> select* from product_master;
```

product_number	product_name	product_description	stock_unit	unit_price	unit_cost
12	smoke detector	smoke detector35	pcs	3,000 rs	null
13	printer roll	satc printer roll	pcs	5,000 rs	null
14	watt bulb	philips 400w bulb	pcs	6,000 rs	null
15	thinner	international thinner34	ltrs	7,000 rs	null
16	hand gloves	dotted hand gloves	pcs	6,500 rs	null
17	engine filter	main engine filter(ship)	pcs	8,000 rs	null

```
6 rows in set (0.00 sec)
```

## ❖ INSERT FUNCTION:

## OUTPUT:-

```
mysql> insert into vendor values(214,"sadhav8","csmt5.mar","mumbai","maharashtra","cheque",'06-06-21');
Query OK, 1 row affected (0.02 sec)

mysql> insert into vendor values(215,"gpmarine4","turbhe.mum","navi mumbai","maharashtra","cheque",'07-07-22');
Query OK, 1 row affected (0.02 sec)

mysql> insert into vendor values(216,"morya engines ltd","panvel.navmum","navi mumbai","maharashtra","cheque",'08-08-22');
Query OK, 1 row affected (0.02 sec)

mysql> select* from vendor;
```

Vendor_id	Vendor_name	vendor_address	Vendor_city	vendor_state	terms_of_payment	last_vendor_order
211	aramex	dubai24. avenue	dubai	gulf	cheque	2002-02-21
212	marpo13	thane16.jax	mumbai	maharashtra	cheque	2003-03-21
213	sammarine14	bilaspur5.fax	bilaspur	chatisgarh	cash	2004-04-21
214	sadhav8	csmt5.mar	mumbai	maharashtra	cheque	2006-06-21
215	gpmarine4	turbhe.mum	navi mumbai	maharashtra	cheque	2007-07-22
216	morya engines ltd	panvel.navmum	navi mumbai	maharashtra	cheque	2008-08-22

## ❖ UPDATE AND WHERE FUNCTION:

**RECEIVING\_SLIP SET RECEIVING\_ID="51" WHERE PO\_ID="341";**

### OUTPUT:

```
mysql> update receiving_slip set receiving_id="51" where po_id="341";
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update receiving_slip set receiving_id="52" where po_id="342";
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update receiving_slip set receiving_id="53" where po_id="343";
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update receiving_slip set receiving_id="54" where po_id="344";
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update receiving_slip set receiving_id="55" where po_id="345";
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update receiving_slip set receiving_id="56" where po_id="346";
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select* from receiving_slip;
```

Receiving_id	po_id	vendor_id	date_of_receipt	vendor_order_number
51	341	211	2021-06-29	101
52	342	212	2021-07-29	102
53	343	213	2021-08-24	103
54	344	214	2021-08-30	104
55	345	215	2022-09-30	105
56	346	216	2022-10-10	106

❖ ALTER FUNCTION:

>>>ALTER TABLE RECEIVING\_DETAILS ADD COLUMN PRODUCT\_COST INT;

OUTPUT:

```
mysql> alter table recieving_details add column product_cost int;
Query OK, 0 rows affected (0.04 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc recieving_details;
```

Field	Type	Null	Key	Default	Extra
receiving_id	int	YES		NULL	
product_id	int	YES		NULL	
quantity_received	varchar(50)	YES		NULL	
quantity_approved	varchar(50)	YES		NULL	
product_cost	int	YES		NULL	

5 rows in set (0.00 sec)

❖ PRIMARY AND FOREIGN KEY:

➤ Primary key(PRI)- alter table product\_master add primary key(product\_number);

## OUTPUT:

```
mysql> alter table product_master add primary key(product_number);
Query OK, 0 rows affected (0.07 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc product_master;
+-----+-----+-----+-----+-----+-----+
| Field                | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| product_number       | int           | NO   | PRI | NULL    |       |
| product_name         | varchar(50)   | YES  |     | NULL    |       |
| product_description  | varchar(50)   | YES  |     | NULL    |       |
| stock_unit          | varchar(50)   | YES  |     | NULL    |       |
| unit_price           | varchar(50)   | YES  |     | NULL    |       |
| unit_cost            | varchar(50)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

- Foreign key(MUL)- **alter table recieving\_details add foreign key(product\_id) references product\_master(product\_number);**

## OUTPUT:

```
mysql> alter table recieving_details add foreign key(product_id) references product_master(product_number);
Query OK, 6 rows affected (0.05 sec)
Records: 6 Duplicates: 0 Warnings: 0

mysql> desc recieving_details;
+-----+-----+-----+-----+-----+-----+
| Field                | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| receiving_id         | int           | YES  |     | NULL    |       |
| product_id           | int           | YES  | MUL | NULL    |       |
| quantity_received    | varchar(50)   | YES  |     | NULL    |       |
| quantity_approved    | varchar(50)   | YES  |     | NULL    |       |
| product_cost         | int           | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```



### ❖ JOINS:

- **INNER JOIN- SELECT VENDOR\_NAME,ORDER\_DATE FROM VENDOR  
INNER JOIN PURCHASE\_ORDER ON VENDOR.  
VENDOR\_ID=PURCHASE\_ORDER.VENDOR\_ID;**

### OUTPUT:

```
mysql> select vendor_name,order_date from vendor inner join purchase_order on vendor.vendor_id=purchase_order.vendor_id;
```

vendor_name	order_date
aramex	2021-06-18
marpo13	2021-07-18
sammarine14	2021-07-25
sadhav8	2021-08-25
gpmarine4	2022-08-25
morya engines ltd	2022-09-25

```
6 rows in set (0.02 sec)
```

- ❖ **RIGHT JOIN- select  
product\_name,product\_description,quantity\_received,quantity\_app**



roved from product\_master right join receiving\_details on  
product\_master.product\_number=receiving\_details.product\_id;

## OUTPUT:

```
mysql> select product_name,product_description,quantity_received,quantity_approved from product_master right join receiving_details on product_master.product_number=receiving_details.product_id;
```

product_name	product_description	quantity_received	quantity_approved
smoke detector	smoke detector35	15 pc	15 pc
printer roll	satc printer roll	20 pc	20 pc
watt bulb	philips 400w bulb	25 pc	25 pc
thinner	international thinner34	25 pc	25 pc
hand gloves	dotted hand gloves	28 pc	28 pc
engine filter	main engine filter(ship)	35 pc	35 pc

6 rows in set (0.00 sec)

## ❖ LEFT JOIN- Select

Receiving\_id,Order\_date,estimated\_Date\_Delivery,date\_of\_receipt  
from receiving\_slip left join purchase\_order on  
receiving\_slip.receiving\_id=purchase\_order.vendor\_id;

## OUTPUT:

```
mysql> select receiving_id,order_date,estimated_date_delivery,date_of_receipt from receiving_slip left join purchase_order on r
e_order.vendor_id;
```

receiving_id	order_date	estimated_date_delivery	date_of_receipt
51	2021-06-18	2021-06-29	2021-06-29
52	2021-07-18	2021-07-24	2021-07-29
53	2021-07-25	2021-08-24	2021-08-24
54	2021-08-25	2021-08-30	2021-08-30
55	2022-08-25	2022-09-30	2022-09-30
56	2022-09-25	2022-10-10	2022-10-10

```
6 rows in set (0.00 sec)

mysql>
```

## ❖ SUBQUERIES:

1) **Select\*** from product\_master where product\_number IN(select product\_number from product\_master where unit\_price> "5000");

## OUTPUT:

```
mysql> select* from product_master where product_number IN (select product_number from product_master where unit_price > "5000" );
```

product_number	product_name	product_description	stock_unit	unit_price	unit_cost
14	watt bulb	philips 400w bulb	pcs	6,000 rs	null
15	thinner	international thinner34	ltrs	7,000 rs	null
16	hand gloves	dotted hand gloves	pcs	6,500 rs	null
17	engine filter	main engine filter(ship)	pcs	8,000 rs	null

```
4 rows in set (0.00 sec)
```

## 2) Select

vendor.vendor\_name,purchase\_order.order\_date,estimated\_date\_delivery from vendor,purchase\_order where  
vendor.vendor\_id=purchase\_order.vendor\_id and po\_id=(select po\_id  
from purchase\_order where po\_id= '342');

## OUTPUT:

vendor_name	order_date	estimated_date_delivery
marpo13	2021-07-18	2021-07-24

```
1 row in set (0.02 sec)
```

3) `select* from po_details where product_id=(select product_id from receiving_details where product_cost = "15000");`

OUTPUT:

```
mysql> select* from po_details where product_id = (select product_id from recieving_details where product_cost = "15000");
```

product_id	po_id	quantity_ordered	cost
13	342	20 pc	15,000 Rs

❖ DISTINCT FUNCTION:

`Select distinct quantity_ordered from po_details;`

OUTPUT:

```
mysql> select distinct quantity_ordered from po_details;
```

quantity_ordered
15 pc
20 pc
25 pc
28 pc
35 pc

5 rows in set (0.02 sec)

## ❖ VIEWS:

```
create view inventory_table as select  
vendor_name,vendor_address,terms_of_payment,order_date,e  
stimated_date_delivery from vendor,purchase_order where  
vendor.vendor_id=purchase_order.vendor_id;
```

## OUTPUT:

```
MySQL 8.0 Command Line Client - Unicode  
mysql> create view inventory_table as select vendor_name,vendor_address,terms_of_payment,order_date,estimated_date_delivery from vendor,purchase_order where v  
endor.vendor_id=purchase_order.vendor_id;  
Query OK, 0 rows affected (0.03 sec)  
  
mysql> select* from inventory_table;  
+-----+-----+-----+-----+-----+  
| vendor_name | vendor_address | terms_of_payment | order_date | estimated_date_delivery |  
+-----+-----+-----+-----+-----+  
| aramex | dubai24. avenue | cheque | 2021-06-18 | 2021-06-29 |  
| marpo13 | thane16. jax | cheque | 2021-07-18 | 2021-07-24 |  
| sammarine14 | bilaspur5. fax | cash | 2021-07-25 | 2021-08-24 |  
| sadhav8 | csmt5. mar | cheque | 2021-08-25 | 2021-08-30 |  
| gpmarine4 | turbhe. mum | cheque | 2022-08-25 | 2022-09-30 |  
| morya engines ltd | panvel. navmum | cheque | 2022-09-25 | 2022-10-10 |  
+-----+-----+-----+-----+-----+  
6 rows in set (0.00 sec)
```