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INT306

Database Management System

Project Title

Inventory Management System

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Introduction:-

An inventory management system is the combination of technology (hardware and software) and processes and procedures that oversee the monitoring and maintenance of stocked products, whether those products are company assets, raw materials and supplies, or finished products ready to be sent to vendors or end consumers.
This system can widely be used by normal shops, departmental stores or MNCs for keeping a proper track of the stock. It also consists of information like manager details, customer details etc.
With the help of this system we can fix a minimum quantity of any inventory below which we need to place an order for that inventory. This will help us in good sales results and never the out of stock stage for any inventory

Working:-

This application will have different front ends for different kinds of users. The person who is sitting on the billing counter will have access to only modify the quantity of any product i.e. he/she can either generate an invoice for any sold product or can generate a return note for any returns from any customer. The manager will have the access to modify the rates if there exist any dynamic price inventory. The owner of the firm will have the access to generate the final report which will be consisting of sales done on any particular day, the total sales on any particular counter or by any salesperson.

Technical Feasibility

In this project we've only implemented the back end of the system which is designed on "Oracle"
On this sequence query language we created 10 tables named:
1. Brands

2. inv_user

3. Categories

4. Products

5. Stores

6. Providers

7. Customer_cart

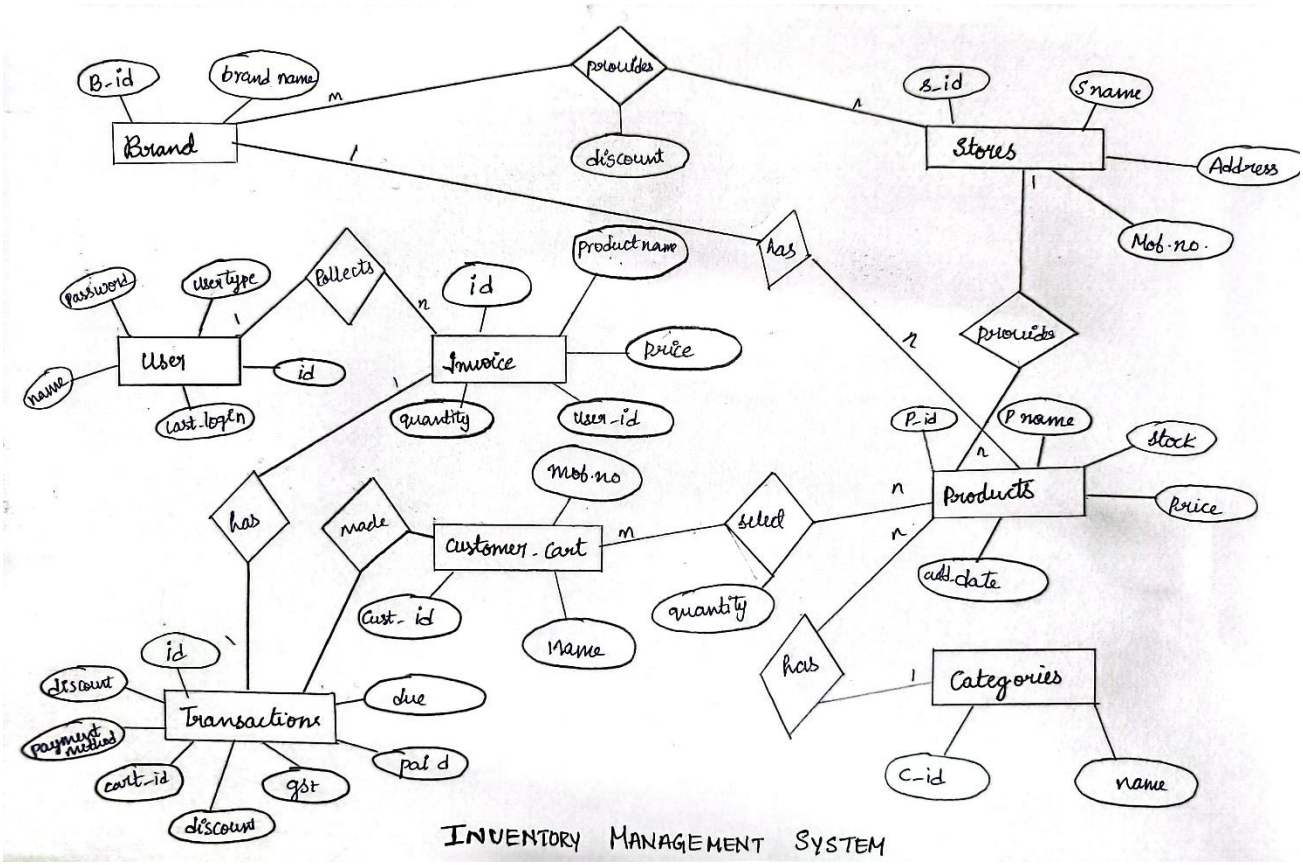
8. Select_product

9. Transaction

10. Invoice

Design of the Project

E-R Model:



Considerations taken from ER diagram:

- Each entity is converted into table.
- Each attribute is given a column name.
- Each table has its own primary keys and foreign keys as applicable.
- Multivalued attributes are further decomposed into new tables.
- I gave the all references with the each table
- There is no null values in the table

Screenshots

Brands Table

Table Description

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
BRANDS	BID	Number	-	-	-	1	-	-	-
	BNAME	Varchar2	20	-	-	-	✓	-	-
									1 - 2

Content

BID	BNAME
1	Adidas
2	Samsung
3	Nike
4	LG

Inv_User Table

Table Description

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
INV_USER	USER_ID	Varchar2	20	-	-	1	-	-	-
	NAME	Varchar2	20	-	-	-	✓	-	-
	PASSWORD	Varchar2	20	-	-	-	✓	-	-
	LAST_LOGIN	Timestamp(6)	11	-	6	-	✓	-	-
	USER_TYPE	Varchar2	10	-	-	-	✓	-	-
									1 - 5

Content

USER_ID	NAME	PASSWORD	LAST_LOGIN	USER_TYPE
gopi@gmail.com	Venkata Gopi	1111	30-OCT-22 10.20.00.000000 AM	Manager
srikanth@gmail.com	Srikanth	0011	29-OCT-22 10.20.00.000000 AM	Accountant

Categories Table

Table Description

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CATEGORIES	CID	Number	-	-	-	1	-	-	-
	CATEGORY_NAME	Varchar2	20	-	-	-	✓	-	-
									1 - 2

Content

CID	CATEGORY_NAME
1	Electronics
2	Clothing
3	Grocey

Stores Table

Table Description

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
STORES	SID	Number	-	5	0	1	-	-	-
	SNAME	Varchar2	20	-	-	-	✓	-	-
	ADDRESS	Varchar2	20	-	-	-	✓	-	-
	MOBNO	Number	-	10	0	-	✓	-	-
									1 - 4

Content

SID	SNAME	ADDRESS	MOBNO
1	Vijay	Andhrapradesh	9550783022
2	Rakesh kumar	Telangana	8888555541
3	Suraj	Punjab	7777555541

Product Table

Table Description

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PRODUCT	PID	Number	-	-	-	1	-	-	-
	CID	Number	-	-	-	-	✓	-	-
	BID	Number	-	-	-	-	✓	-	-
	SID	Number	-	-	-	-	✓	-	-
	PNAME	Varchar2	20	-	-	-	✓	-	-
	P_STOCK	Number	-	-	-	-	✓	-	-
	PRICE	Number	-	-	-	-	✓	-	-
	ADDED_DATE	Date	7	-	-	-	✓	-	-

1 - 8

contents

PID	CID	BID	SID	PNAME	P_STOCK	PRICE	ADDED_DATE
1	1	2	2	ZPhone	3	19000	27-OCT-22
2	2	1	2	AdiZero	3	9000	27-OCT-22
3	1	4	1	TV	3	19000	27-OCT-22
4	2	3	2	Air Max	6	7000	27-OCT-22

Provides Table

Table Description

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PROVIDES	BID	Number	-	5	0	-	✓	-	-
	SID	Number	-	5	0	-	✓	-	-
	DISCOUNT	Number	-	5	0	-	✓	-	-

1 - 3

Contents

BID	SID	DISCOUNT
1	1	12
4	3	19
3	3	15
4	1	20
2	2	7
1	2	7

Customer_cart Table

Table Description

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMER_CART	CUST_ID	Number	-	5	0	1	-	-	-
	NAME	Varchar2	20	-	-	-	✓	-	-
	MOBNO	Number	-	10	0	-	✓	-	-
									1 - 3

content

CUST_ID	NAME	MOBNO
1	Ram	7788877777
2	Shyam	7777777777
3	Mohan	7777777775

Select_product Table

Table Description

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PRODUCT	PID	Number	-	-	-	1	-	-	-
	CID	Number	-	-	-	-	✓	-	-
	BID	Number	-	-	-	-	✓	-	-
	SID	Number	-	-	-	-	✓	-	-
	PNAME	Varchar2	20	-	-	-	✓	-	-
	P_STOCK	Number	-	-	-	-	✓	-	-
	PRICE	Number	-	-	-	-	✓	-	-
	ADDED_DATE	Date	7	-	-	-	✓	-	-
									1 - 8

Content

CUST_ID	PID	QUANTITY
1	2	2
2	3	3
3	2	1

Transaction Table

Table Description

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
TRANSACTION	ID	Number	-	5	0	1	-	-	-
	TOTAL_AMOUNT	Number	-	5	0	-	✓	-	-
	PAID	Number	-	5	0	-	✓	-	-
	DUE	Number	-	5	0	-	✓	-	-
	GST	Number	-	3	0	-	✓	-	-
	DISCOUNT	Number	-	5	0	-	✓	-	-
	PAYMENT_METHOD	Varchar2	10	-	-	-	✓	-	-
	CART_ID	Number	-	5	0	-	✓	-	-
									1 - 8

Content

ID	TOTAL_AMOUNT	PAID	DUE	GST	DISCOUNT	PAYMENT_METHOD	CART_ID
1	57000	2000	5000	350	350	card	1
2	57000	57000	0	570	570	cash	2
3	19000	17000	2000	190	190	cash	3
4	19000	17000	2000	190	190	cash	3

Invoice Table

Table Description

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
INVOICE	ITEM_NO	Number	-	5	0	-	✓	-	-
	PRODUCT_NAME	Varchar2	20	-	-	-	✓	-	-
	QUANTITY	Number	-	5	0	-	✓	-	-
	NET_PRICE	Number	-	5	0	-	✓	-	-
	TRANSACTION_ID	Number	-	5	0	-	✓	-	-
									1 - 5

Content

ITEM_NO	PRODUCT_NAME	QUANTITY	NET_PRICE	TRANSACTION_ID
1	TV	1	17000	2
1	REFINED OIL	4	3000	3
1	Air Max	1	6000	4
1	ZPhone	1	17000	1

Code

Creating Brands Table

```
create table brands
(
bid number primary key ,
bname varchar2(20)
);
```

Inserting Values into Brands Table

```
insert into brands values(1,'Adidas');
insert into brands values(2,'Samsung');
insert into brands values(3,'Nike');
insert into brands values(4,'LG');
insert into brands values(5,'Fortune');
select * from brands
```

Creating Inv_Users Table

```
create table inv_user(
user_id varchar2(20) primary key,
name varchar2(20),
password varchar2(20),
last_login timestamp,
user_type varchar2(10)
);
```

Inserting Values into Inv_User Table

```
insert into inv_user values('gopi@gmail.com','Venkata Gopi','1111','30-oct-22
10:20','Manager');
insert into inv_user values('srikanth@gmail.com','Srikanth','0011','29-oct-22
10:20','Accountant');
select * from inv_user
desc inv_user
```

Creating Categories Table

```
create table categories
(
cid number primary key,
category_name varchar2(20)
);
```

Inserting Values into Categories Table

```
insert into categories values(1,'Electronics');
insert into categories values(2,'Clothing');
insert into categories values(3,'Grocey');
select * from categories
```

Creating Stores Table

```
create table stores
(
sid number(5) primary key,
sname varchar(20),
address varchar(20),
mobno number(10)
);
```

Inserting Values into Stores Table

```
insert into stores values(1,'Vijay','Andhrapradesh',9550783022);
insert into stores values(2,'Rakesh kumar','Telangana',8888555541);
insert into stores values(3,'Suraj','Punjab',7777555541);
select* from stores
```

Creating Product Table

```
create table product
(
pid number primary key,
cid number references categories(cid),
```

```
bid number references brands(bid),
sid number references stores(sid),
pname varchar(20),
p_stock number,
price number,
added_date date
);
```

Inserting Values into Product Table

```
insert into product values(1,1,2,2,'ZPhone',3,19000,'27-oct-22');
insert into product values(2,2,1,2,'AdiZero',3,9000,'27-oct-22');
insert into product values(3,1,4,1,'TV',3,19000,'27-oct-22');
insert into product values(4,2,3,2,'Air Max',6,7000,'27-oct-22');
insert into product values(5,3,5,3,'REFINED OIL',6,750,'25-oct-22');
select * from product
```

Creating table Provides

```
create table provides
(
bid number(5)references brands(bid),
sid number(5)references stores(sid),
discount number(5)
);
```

Inserting Values into Provides table

```
insert into provides values(1,1,12);
insert into provides values(2,2,7);
insert into provides values(3,3,15);
insert into provides values(1,2,7);
insert into provides values(4,3,19);
insert into provides values(4,1,20);
select * from provides
```

Creating Customer_cart Table

```
create table customer_cart
(
cust_id number(5) primary key,
name varchar(20),
mobno number(10)
);
```

Inserting Values Into Customer_cart Table

```
insert into customer_cart values(1,'Ram',7788877777);
insert into customer_cart values(2,'Shyam',7777777777);
insert into customer_cart values(3,'Mohan',7777777775);
select * from customer_cart
```

Creating Select_product table

```
create table select_product
(
cust_id number(5) references customer_cart(cust_id),
pid number(5)references product(pid),
quantity number(4)
);
```

Inserting values into select_product table

```
insert into select_product values(1,2,2);
insert into select_product values(1,3,1);
insert into select_product values(2,3,3);
insert into select_product values(3,2,1);
select * from select_product
```

Creating Transcation Table

```
create table transaction
(
id number(5) primary key,
```

```
total_amount number(5),
paid number(5),
due number(5),
gst number(3),
discount number(5),
payment_method varchar(10),
cart_id number(5) references customer_cart(cust_id)
);
```

Inserting Values into Transaction table

```
insert into transaction values(1,57000,2000,5000,350,350,'card',1);
insert into transaction values(2,57000,57000,0,570,570,'cash',2);
insert into transaction values(3,19000,17000,2000,190,190,'cash',3);
insert into transaction values(4,19000,17000,2000,190,190,'cash',3);
select * from transcation
```

Creating Invoice Table

```
create table invoice
(
item_no number(5),
product_name varchar(20),
quantity number(5),
net_price number(5),
transaction_id number(5)references transaction(id)
);
```

Inserting Values Into Invoice Table

```
insert into invoice values(1,'ZPhone',1,17000,1);
insert into invoice values(1,'TV',1,17000,2);
insert into invoice values(1,'REFINED OIL',4,3000,3);
insert into invoice values(1,'Air Max',1,6000,4);
select * from invoice
```

Query

Query for Creating Brands table

```
create table brands
(
bid number primary key ,
bname varchar2(20)
);
```

Query for Creating inv_user table

```
create table inv_user(
user_id varchar2(20) primary key,
name varchar2(20),
password varchar2(20),
last_login timestamp,
user_type varchar2(10)
);
```

Query for Creating Categories table

```
create table categories
(
cid number primary key,
category_name varchar2(20)
);
```

Query for Creating Stores table

```
create table stores
(
sid number(5) primary key,
sname varchar(20),
address varchar(20),
mobno number(10)
);
```

Query for Creating Product table

```
create table product
(
pid number primary key,
cid number references categories(cid),
bid number references brands(bid),
sid number references stores(sid),
pname varchar(20),
p_stock number,
price number,
added_date date
);
```

Query for Creating Provides table

```
create table provides
(
bid number(5)references brands(bid),
sid number(5)references stores(sid),
discount number(5)
);
```

Query for Creating customer_cart table

```
create table customer_cart
(
cust_id number(5) primary key,
name varchar(20),
mobno number(10)
);
```

Query for Creating select_product table

```
create table select_product
(
cust_id number(5) references customer_cart(cust_id),
```

```
pid number(5)references product(pid),
quantity number(4)
);
```

Query for Creating Transaction table

```
create table transaction
(
id number(5) primary key,
total_amount number(5),
paid number(5),
due number(5),
gst number(3),
discount number(5),
payment_method varchar(10),
cart_id number(5) references customer_cart(cust_id)
);
```

Query for Creating Invoice table

```
create table invoice
(
item_no number(5),
product_name varchar(20),
quantity number(5),
net_price number(5),
transaction_id number(5)references transaction(id)
);
```

Query for inserting values into Brands table

```
insert into brands values(1,'Adidas');
insert into brands values(2,'Samsung');
insert into brands values(3,'Nike');
insert into brands values(4,'LG');
insert into brands values(5,'Fortune');
```

```
select * from brands
```

Query for inserting values into Inv_user table

```
insert into inv_user values('gopi@gmail.com','Venkata Gopi','1111','30-oct-22 10:20','Manager');
insert into inv_user values('srikanth@gmail.com','Srikanth','0011','29-oct-22 10:20','Accountant');
select * from inv_user
```

Query for inserting values into Categories table

```
insert into categories values(1,'Electronics');
insert into categories values(2,'Clothing');
insert into categories values(3,'Grocey');
select * from categories
```

Query for inserting values into Stores table

```
insert into stores values(1,'Vijay','Andhrapradesh',9550783022);
insert into stores values(2,'Rakesh kumar','Telangana',8888555541);
insert into stores values(3,'Suraj','Punjab',7777555541);
select* from stores
```

Query for inserting values into Product table

```
insert into product values(1,1,2,2,'ZPhone',3,19000,'27-oct-22');
insert into product values(2,2,1,2,'AdiZero',3,9000,'27-oct-22');
insert into product values(3,1,4,1,'TV',3,19000,'27-oct-22');
insert into product values(4,2,3,2,'Air Max',6,7000,'27-oct-22');
insert into product values(5,3,5,3,'REFINED OIL',6,750,'25-oct-22');
select * from product
```

Query for inserting values into provides table

```
insert into provides values(1,1,12);
insert into provides values(2,2,7);
insert into provides values(3,3,15);
insert into provides values(1,2,7);
insert into provides values(4,3,19);
```

```
insert into provides values(4,1,20);
select * from provides
```

Query for inserting values into customer_cart table

```
insert into customer_cart values(1,'Ram',7788877777);
insert into customer_cart values(2,'Shyam',7777777777);
insert into customer_cart values(3,'Mohan',7777777775);
select * from customer_cart
```

Query for inserting values into select_product table

```
insert into select_product values(1,2,2);
insert into select_product values(1,3,1);
insert into select_product values(2,3,3);
insert into select_product values(3,2,1);
select * from select_product
```

Query for inserting values into Transactions table

```
insert into transaction values(1,57000,2000,5000,350,350,'card',1);
insert into transaction values(2,57000,57000,0,570,570,'cash',2);
insert into transaction values(3,19000,17000,2000,190,190,'cash',3);
insert into transaction values(4,19000,17000,2000,190,190,'cash',3);
select * from transcation
```

Query for inserting values into table

```
insert into invoice values(1,'ZPhone',1,17000,1);
insert into invoice values(1,'TV',1,17000,2);
insert into invoice values(1,'REFINED OIL',4,3000,3);
insert into invoice values(1,'Air Max',1,6000,4);
select * from invoice
```

PLSQL

Functions

```
declare
 due1 number(7);
 cart_id1 number(7);
 function get_cart(c_id number)return number is
 begin
 return (c_id);
 end;
 begin
 cart_id1:=get_cart(1);
 select due into due1 from transaction where cart_id=cart_id1;
 dbms_output.put_line(due1);
 end;
```

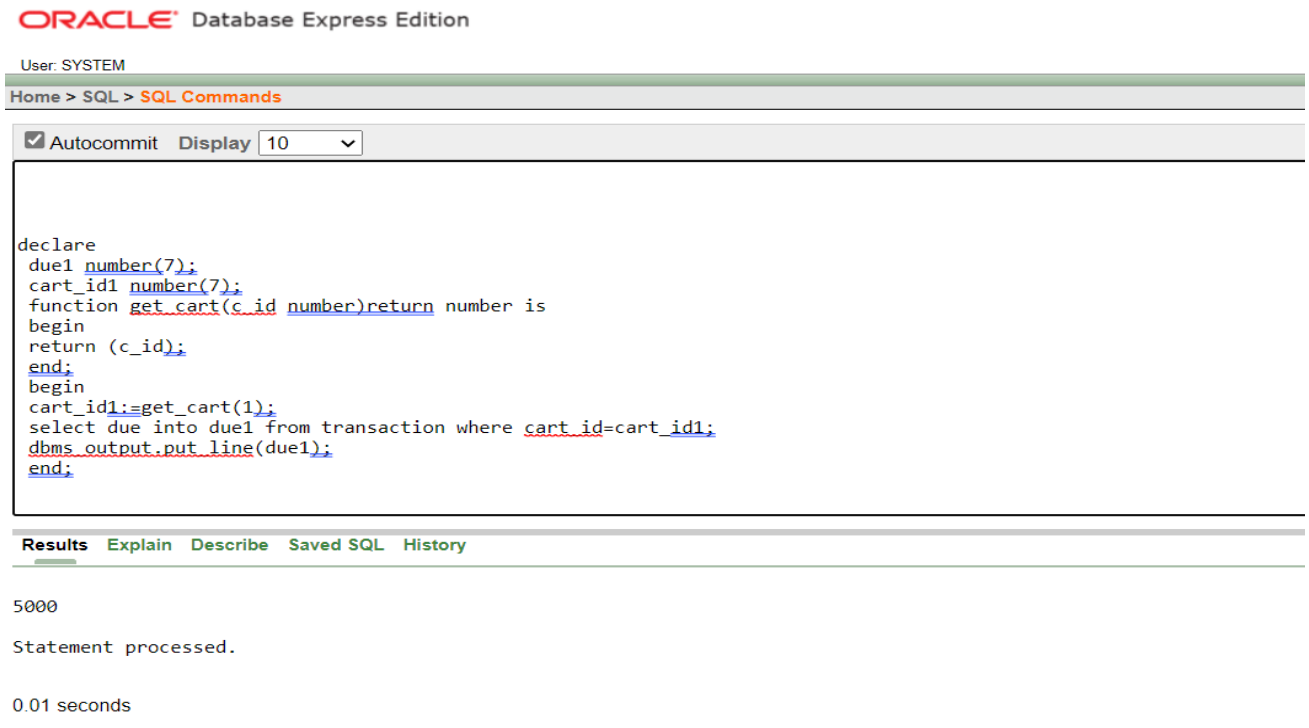
Cursor

```
DECLARE
 p_id product.pid%type;
 p_name product.pname%type;
 p_stock product.p_stock%type;
 cursor p_product is
 select pid,pname ,p_stock from product;
 begin
 open p_product;
 loop
 fetch p_product into p_id,p_name,p_stock;
 exit when p_product%notfound;
 dbms_output.put_line(p_id||' '||p_name||' '||p_stock);
 end loop;
 close p_product;
 end;
```

Procedure

```
DECLARE
 a number;
 b number;
 PROCEDURE check_stock(x IN number) IS
 BEGIN
 IF x < 2 THEN
 dbms_output.put_line('Stock is Less');
 ELSE
 dbms_output.put_line('Enough Stock');
 END IF;
 END;
 BEGIN
 b:=2;
 select p_stock into a from product where pid=b;
 check_stock(a);
 END;
```

PLSQL (Function) shows cart value



PLSQL(Cursor) shows Numbers of items in stocks in Inventory

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User: SYSTEM

Home > SQL > SQL Commands

Autocommit Display 10

```
DECLARE
 p_id product.pid%type;
 p_name product.pname%type;
 p_stock product.p_stock%type;
 cursor p_product is
 select pid,pname ,p_stock from product;
 begin
 open p_product;
 loop
 fetch p_product into p_id,p_name,p_stock;
 exit when p_product%notfound;
 dbms_output.put_line(p_id||' '||p_name||' '||p_stock);
 end loop;
 close p_product;
 end;
```

Results Explain Describe Saved SQL History

```
1 ZPhone 3
2 AdiZero 3
3 TV 3
4 Air Max 6

Statement processed.

0.01 seconds
```

PLSQL (Procedure) shows stock is less or enough in Inventory

ORACLE Database Express Edition

User: SYSTEM

Home > SQL > SQL Commands

Autocommit Display 10

```
DECLARE
 a number;
 b number;
 PROCEDURE check_stock(x IN number) IS
 BEGIN
 IF x < 2 THEN
 dbms_output.put_line('Stock is Less');
 ELSE
 dbms_output.put_line('Enough Stock');
 END IF;
 END;
 BEGIN
 b:=3;
 select p_stock into a from product where pid=b;
 check_stock(a);
 END;
```

Results Explain Describe Saved SQL History

```
Enough Stock

Statement processed.

0.00 seconds
```