**DBMS Case Study**

**Introduction**:

* Database Schema covering Products, Customers, Customer\_Orders,

Customer\_Order\_products,ref\_ord\_staus\_codes,customer\_payment\_methods

**Constraints**: Primary key, Foreign key, Not Null

**Data types:** Number, Integer, varchar2

**Relationsips**: one to many & many to one

**Created 6 table’s :**

* PRODUCTS1,
* CUST\_ORD1,
* CUST\_ORD\_PROD1,
* REF\_ORD\_STATUS\_CODE1,
* CUST\_PAYMENT\_METHOD1,
* CUSTOMERS1

**PRODUCTS1**

CREATE TABLE products1(product\_id int not null **primary key**, product\_price int not null, product\_name varchar2(20));

* select \* from PRODUCTS1;

|  |  |  |
| --- | --- | --- |
| **PRODUCT\_ID** | **PRODUCT\_PRICE** | **PRODUCT\_NAME** |
| 1 | 199 | tea |
| 2 | 299 | coffee |
| 3 | 399 | milk |

* DESC PRODUCTS1;

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** | | [PRODUCTS1](javascript:ret_Column('HR.PRODUCTS1');) | [PRODUCT\_ID](javascript:ret_Column('PRODUCT_ID');) | NUMBER | 22 | - | 0 | 1 | - | - | - | |  | [PRODUCT\_PRICE](javascript:ret_Column('PRODUCT_PRICE');) | NUMBER | 22 | - | 0 | - | - | - | - | |  | [PRODUCT\_NAME](javascript:ret_Column('PRODUCT_NAME');) | VARCHAR2 | 20 | - | - | - | nullable | - | - | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | 1 - 3 |  |  | | | | | | | | | | | |  |  |  |  | | | | | | | | | |
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**CUST\_ORD1**

CREATE TABLE CUST\_ORD1(order\_id int not null primary key, ,customer\_payment\_method\_id number not null, customer\_payment\_method varchar2(20),order\_stauts\_code number not null, customer\_id int not null);

* ALTER TABLE CUST\_ORD1 ADD FOREIGN KEY (customer\_ID) REFERENCES CUSTOMERS1(customer\_ID);
* ALTER TABLE CUST\_ORD1 ADD FOREIGN KEY (CUSTOMER\_PAYMENT\_METHOD\_ID) REFERENCES CUST\_PAYMENT\_METHOD1(CUSTOMER\_PAYMENT\_METHOD\_ID);
* ALTER TABLE CUST\_ORD1 ADD FOREIGN KEY (ORDER\_STATUS\_CODE) REFERENCES REF\_ORD\_STATUS\_CODE1(ORDER\_STATUS\_CODE);
* select \* from CUST\_ORD1;

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ORDER\_ID** | **CUSTOMER\_PAYMENT\_METHOD\_ID** | **CUSTOMER\_PAYMENT\_METHOD** | **ORDER\_STATUS\_CODE** | **CUSTOMER\_ID** |
| 101 | 7675061260 | Net Banking | 1010110101 | 1234 |
| 102 | 9019918540 | Upi | 30103020101 | 4567 |
| 103 | 9491917804 | Credit Card | 40104020101 | 5678 |

* desc cust\_ord1;

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [CUST\_ORD1](javascript:ret_Column('HR.CUST_ORD1');) | [ORDER\_ID](javascript:ret_Column('ORDER_ID');) | NUMBER | 22 | - | 0 | 1 | - | - | - |
|  | [CUSTOMER\_PAYMENT\_METHOD\_ID](javascript:ret_Column('CUSTOMER_PAYMENT_METHOD_ID');) | NUMBER | 22 | - | - | - | - | - | - |
|  | [CUSTOMER\_PAYMENT\_METHOD](javascript:ret_Column('CUSTOMER_PAYMENT_METHOD');) | VARCHAR2 | 20 | - | - | - | nullable | - | - |
|  | [ORDER\_STATUS\_CODE](javascript:ret_Column('ORDER_STATUS_CODE');) | NUMBER | 22 | - | - | - | nullable | - | - |
|  | [CUSTOMER\_ID](javascript:ret_Column('CUSTOMER_ID');) | NUMBER | 22 | - | - | - | nullable | - | - |
|  |  |  |  |  |  |  |  |  |  |

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**CUST\_ORD\_PROD1**

* CREATE TABLE cust\_ord\_prod1 (order\_id int NOT NULL, product\_id int not null,primary key(order\_id),foreign key (product\_id) references products1(product\_id), FOREIGN KEY (order\_id ) REFERENCES cust\_ord1(order\_id ));
* select \* from CUST\_ORD\_PROD1

|  |  |  |
| --- | --- | --- |
| **ORDER\_ID** | **PRODUCT\_ID** | **QUALITY** |
| 101 | 1 | Good |
| 102 | 2 | Average |
| 103 | 3 | Bad |

* desc CUST\_ORD\_PROD1

|  |
| --- |
|  |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [CUST\_ORD\_PROD1](javascript:ret_Column('HR.CUST_ORD_PROD1');) | [ORDER\_ID](javascript:ret_Column('ORDER_ID');) | NUMBER | 22 | - | 0 | 1 | - | - | - |
|  | [PRODUCT\_ID](javascript:ret_Column('PRODUCT_ID');) | NUMBER | 22 | - | 0 | - | - | - | - |
|  | [QUALITY](javascript:ret_Column('QUALITY');) | VARCHAR2 | 20 | - | - | - | nullable | - | - |
| |  |  |  |  | | --- | --- | --- | --- | |  |  | 1 - 3 |  | | | | | | | | | | | |

**REF\_ORD\_STATUS\_CODE1**

CREATE TABLE ref\_ord\_status\_code1(order\_status\_code number not null primary key, order\_status\_description varchar2(20))

* select \* from ref\_ord\_status\_code1

|  |  |
| --- | --- |
| **ORDER\_STATUS\_CODE** | **ORDER\_STATUS\_DESCRIPTION** |
| 1010110101 | paid |
| 30103020101 | Failed |
| 40104020101 | pending |
|  |  |

* desc ref\_ord\_status\_code1

|  |
| --- |
|  |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [REF\_ORD\_STATUS\_CODE1](javascript:ret_Column('HR.REF_ORD_STATUS_CODE1');) | [ORDER\_STATUS\_CODE](javascript:ret_Column('ORDER_STATUS_CODE');) | NUMBER | 22 | - | - | 1 | - | - | - |
|  | [ORDER\_STATUS\_DESCRIPTION](javascript:ret_Column('ORDER_STATUS_DESCRIPTION');) | VARCHAR2 | 20 | - | - | - | nullable | - | - |
| |  |  |  |  | | --- | --- | --- | --- | |  |  | 1 - 2 |  | | | | | | | | | | | |

**CUST\_PAYMENT\_METHOD1**

CREATE TABLE CUST\_PAYMENT\_METHOD1(CUSTOMER\_PAYMENT\_METHOD\_ID number not null primary key, CUSTOMER\_PAYMENT\_METHOD varchar2(20), CUSTOMER\_ID number not null,

FOREIGN KEY (CUSTOMER\_ID) REFERENCES CUSTOMERS1(CUSTOMER\_ID)

* select \* from CUST\_PAYMENT\_METHOD1

|  |  |  |
| --- | --- | --- |
| **CUSTOMER\_PAYMENT\_METHOD\_ID** | **CUSTOMER\_PAYMENT\_METHOD** | **CUSTOMER\_ID** |
| 7675061260 | Net Banking | 1234 |
| 9019918540 | upi | 4567 |
| 9491917804 | Credit Card | 5678 |

* desc CUST\_PAYMENT\_METHOD1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | |  | | **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** | | [CUST\_PAYMENT\_METHOD1](javascript:ret_Column('HR.CUST_PAYMENT_METHOD1');) | [CUSTOMER\_PAYMENT\_METHOD\_ID](javascript:ret_Column('CUSTOMER_PAYMENT_METHOD_ID');) | NUMBER | 22 | - | 0 | 1 | - | - | - | |  | [CUSTOMER\_PAYMENT\_METHOD](javascript:ret_Column('CUSTOMER_PAYMENT_METHOD');) | VARCHAR2 | 20 | - | - | - | nullable | - | - | |  | [CUSTOMER\_ID](javascript:ret_Column('CUSTOMER_ID');) | NUMBER | 22 | - | - | - | nullable | - | - | | |  | | --- | |  | | | | | | | | | | | | | | | | | | |
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**Customers**

create table customers1(customer\_id number not null primary key, customer\_name varchar2(20), customer\_email\_id varchar2(30))

* select \* from customers1

|  |  |  |
| --- | --- | --- |
| **CUSTOMER\_ID** | **CUSTOMER\_NAME** | **CUSTOMER\_EMAIL\_ID** |
| 1234 | ilari | ilari@gmail.com |
| 4567 | Elari | Elari@gmail.com |
| 5678 | blessy | blessy@gmail.com |

* Desc customers1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** | | [CUSTOMERS1](javascript:ret_Column('HR.CUSTOMERS1');) | [CUSTOMER\_ID](javascript:ret_Column('CUSTOMER_ID');) | NUMBER | 22 | - | - | 1 | - | - | - | |  | [CUSTOMER\_NAME](javascript:ret_Column('CUSTOMER_NAME');) | VARCHAR2 | 20 | - | - | - | nullable | - | - | |  | [CUSTOMER\_EMAIL\_ID](javascript:ret_Column('CUSTOMER_EMAIL_ID');) | VARCHAR2 | 30 | - | - | - | nullable | - | - | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | 1 - 3 |  |  | | | | | | | | | | | |  |  |  |  | | | | | | | | |
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**Retrieving The Records from the tables based on Relations**

* PRODUCTS1(product\_id ) pk TO CUST\_ORD\_PROD1(product\_id)fk

select PRODUCTS1.PRODUCT\_PRICE ,PRODUCTS1.PRODUCT\_NAME ,CUST\_ORD\_PROD1.ORDER\_ID , CUST\_ORD\_PROD1.QUALITY from PRODUCTS1 inner join CUST\_ORD\_PROD1 ON PRODUCTS1.PRODUCT\_ID=CUST\_ORD\_PROD1.PRODUCT\_ID

|  |  |  |  |
| --- | --- | --- | --- |
| **PRODUCT\_PRICE** | **PRODUCT\_NAME** | **ORDER\_ID** | **QUALITY** |
| 199 | tea | 101 | Good |
| 299 | coffee | 102 | Average |
| 399 | milk | 103 | Bad |

* CUST\_ORD1(order\_id) pk To CUST\_ORD\_PROD1(order\_id)fk

select CUST\_ORD1.ORDER\_ID, CUST\_ORD1 .CUSTOMER\_PAYMENT\_METHOD, CUST\_ORD\_PROD1 .QUALITY from CUST\_ORD1 inner join CUST\_ORD\_PROD1 ON CUST\_ORD1.ORDER\_ID=CUST\_ORD\_PROD1.ORDER\_ID

|  |  |  |
| --- | --- | --- |
| **ORDER\_ID** | **CUSTOMER\_PAYMENT\_METHOD** | **QUALITY** |
| 101 | Net Banking | Good |
| 102 | Upi | Average |
| 103 | Credit Card | Bad |

* REF\_ORD\_STATUS\_CODE1 (ORDER\_STATUS\_CODE) PK To CUST\_ORD1(ORDER\_STATUS\_CODE) fk

select CUST\_ORD1 .CUSTOMER\_PAYMENT\_METHOD\_ID,CUST\_ORD1 .CUSTOMER\_PAYMENT\_METHOD , REF\_ORD\_STATUS\_CODE1.ORDER\_STATUS\_CODE from CUST\_ORD1 inner join REF\_ORD\_STATUS\_CODE1 ON CUST\_ORD1.ORDER\_STATUS\_CODE= REF\_ORD\_STATUS\_CODE1 .ORDER\_STATUS\_CODE

|  |  |  |
| --- | --- | --- |
| **CUSTOMER\_PAYMENT\_METHOD\_ID** | **CUSTOMER\_PAYMENT\_METHOD** | **ORDER\_STATUS\_CODE** |
| 7675061260 | Net Banking | 1010110101 |
| 9019918540 | Upi | 30103020101 |
| 9491917804 | Credit Card | 40104020101 |

* CUST\_PAYMENT\_METHOD1(CUSTOMER\_PAYMENT\_METHOD\_ID) pk To CUST\_ORD1(CUSTOMER\_PAYMENT\_METHOD\_ID) fk

select \* from CUST\_PAYMENT\_METHOD1 inner join cust\_ord1 ON CUST\_PAYMENT\_METHOD1.CUSTOMER\_PAYMENT\_METHOD\_ID= cust\_ord1 .CUSTOMER\_PAYMENT\_METHOD\_ID

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **CUSTOMER\_PAYMENT\_METHOD\_ID** | **CUSTOMER\_PAYMENT\_METHOD** | **CUSTOMER\_ID** | **ORDER\_ID** | **CUSTOMER\_PAYMENT\_METHOD\_ID** | **CUSTOMER\_PAYMENT\_METHOD** | **ORDER\_STATUS\_CODE** | **CUSTOMER\_ID** |
| 7675061260 | Net Banking | 1234 | 101 | 7675061260 | Net Banking | 1010110101 | 1234 |
| 9019918540 | upi | 4567 | 102 | 9019918540 | Upi | 30103020101 | 4567 |
| 9491917804 | Credit Card | 5678 | 103 | 9491917804 | Credit Card | 40104020101 | 5678 |

* CUSTOMERS1(CUSTOMER\_ID) PK To CUST\_ORD1(CUSTOMER\_ID) FK

select \* from CUSTOMERS1 inner join cust\_ord1 ON CUSTOMERS1 .CUSTOMER\_ID= cust\_ord1 .CUSTOMER\_ID

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **CUSTOMER\_ID** | **CUSTOMER\_NAME** | **CUSTOMER\_EMAIL\_ID** | **ORDER\_ID** | **CUSTOMER\_PAYMENT\_METHOD\_ID** | **CUSTOMER\_PAYMENT\_METHOD** | **ORDER\_STATUS\_CODE** | **CUSTOMER\_ID** |
| 1234 | ilari | ilari@gmail.com | 101 | 7675061260 | Net Banking | 1010110101 | 1234 |
| 4567 | Elari | Elari@gmail.com | 102 | 9019918540 | Upi | 30103020101 | 4567 |
| 5678 | blessy | blessy@gmail.com | 103 | 9491917804 | Credit Card | 40104020101 | 5678 |

* CUSTOMERS1(CUSTOMER\_ID) PK To CUST\_PAYMENT\_METHOD1 (CUSTOMER\_ID) FK

select \* from CUSTOMERS1 inner join CUST\_PAYMENT\_METHOD1 ON CUSTOMERS1 . CUSTOMER\_ID= CUST\_PAYMENT\_METHOD1.CUSTOMER\_ID

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CUSTOMER\_ID** | **CUSTOMER\_NAME** | **CUSTOMER\_EMAIL\_ID** | **CUSTOMER\_PAYMENT\_METHOD\_ID** | **CUSTOMER\_PAYMENT\_METHOD** | **CUSTOMER\_ID** |
| 1234 | ilari | ilari@gmail.com | 7675061260 | Net Banking | 1234 |
| 4567 | Elari | Elari@gmail.com | 9019918540 | upi | 4567 |
| 5678 | blessy | blessy@gmail.com | 9491917804 | Credit Card | 5678 |