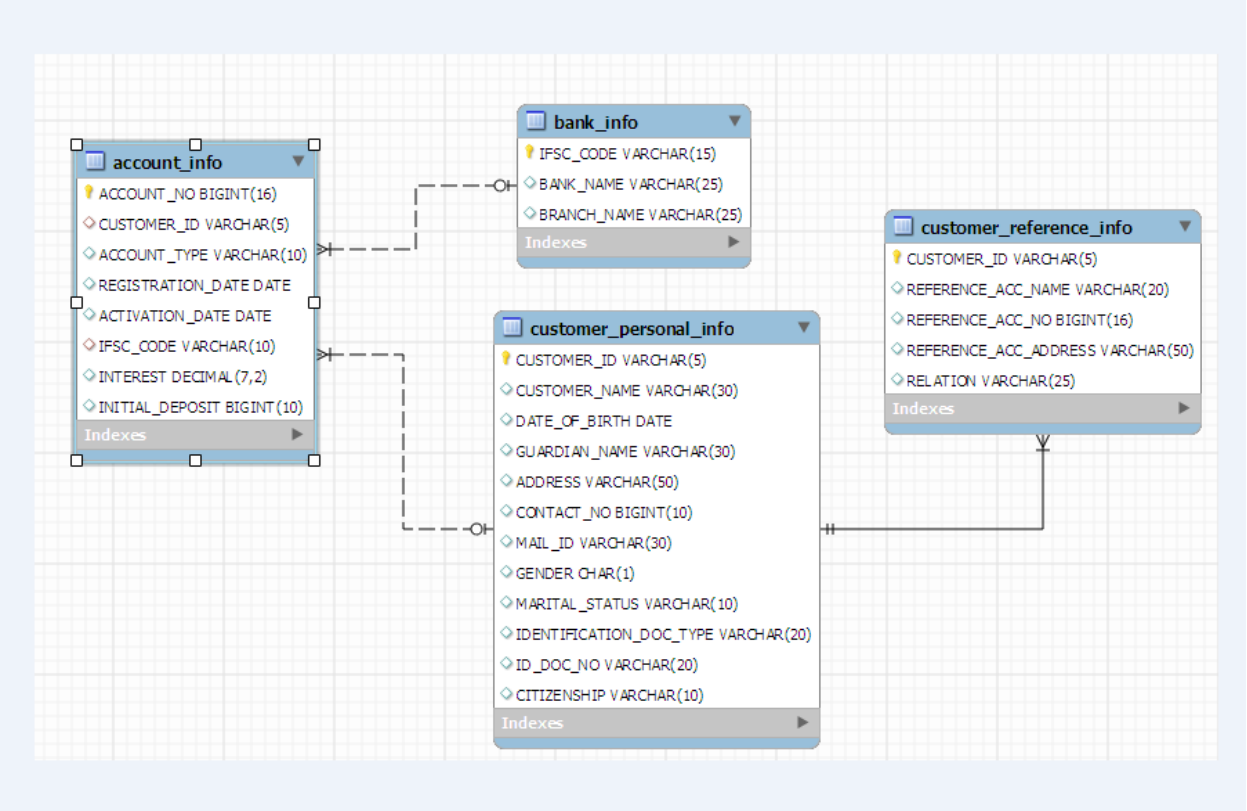
BANK MANGEMENT SYSTEM



DDL COMMANDS

```
create DATABASE BMS_DB;

use BMS_DB;


-- CUSTOMER_PERSONAL_INFO


CREATE TABLE CUSTOMER_PERSONAL_INFO

(

 CUSTOMER_ID VARCHAR(5),

 CUSTOMER_NAME VARCHAR(30),
```

```
 DATE_OF_BIRTH  DATE,
 GUARDIAN_NAME VARCHAR(30),
 ADDRESS VARCHAR(50),
 CONTACT_NO BIGINT(10),
 MAIL_ID  VARCHAR(30),
 GENDER CHAR(1),
 MARITAL_STATUS VARCHAR(10),
 IDENTIFICATION_DOC_TYPE VARCHAR(20),
 ID_DOC_NO VARCHAR(20),
 CITIZENSHIP VARCHAR(10),
 CONSTRAINT CUST_PERS_INFO_PK PRIMARY KEY(CUSTOMER_ID)
);

-- CUSTOMER_REFERENCE_INFO

CREATE TABLE CUSTOMER_REFERENCE_INFO
(
  CUSTOMER_ID VARCHAR(5),
  REFERENCE_ACC_NAME  VARCHAR(20),
  REFERENCE_ACC_NO BIGINT(16),
  REFERENCE_ACC_ADDRESS VARCHAR(50),
  RELATION VARCHAR(25),
  CONSTRAINT CUST_REF_INFO_PK PRIMARY KEY(CUSTOMER_ID),
  CONSTRAINT CUST_REF_INFO_FK FOREIGN KEY(CUSTOMER_ID) REFERENCES
CUSTOMER_PERSONAL_INFO(CUSTOMER_ID)
);

-- BANK_INFO
```

```
CREATE TABLE BANK_INFO
(
 IFSC_CODE   VARCHAR(15),
 BANK_NAME   VARCHAR(25),
 BRANCH_NAME VARCHAR(25),
 CONSTRAINT BANK_INFO_PK PRIMARY KEY(IFSC_CODE)
);



-- ACCOUNT_INFO

CREATE TABLE ACCOUNT_INFO
(
 ACCOUNT_NO BIGINT(16),
 CUSTOMER_ID VARCHAR(5),
 ACCOUNT_TYPE VARCHAR(10),
 REGISTRATION_DATE DATE,
 ACTIVATION_DATE DATE,
 IFSC_CODE VARCHAR(10),
 INTEREST DECIMAL(7,2),
 INITIAL_DEPOSIT BIGINT(10),
 CONSTRAINT ACC_INFO_PK PRIMARY KEY(ACCOUNT_NO),
 CONSTRAINT ACC_INFO_PERS_FK FOREIGN KEY(CUSTOMER_ID) REFERENCES
CUSTOMER_PERSONAL_INFO(CUSTOMER_ID),
 CONSTRAINT ACC_INFO_BANK_FK FOREIGN KEY(IFSC_CODE) REFERENCES BANK_INFO(IFSC_CODE)
);
```

DML COMMANDS

-- BANK_INFO

```
INSERT INTO
BANK_INFO(IFSC_CODE,BANK_NAME,BRANCH_NAME)VALUES('HDVL0012','HDFC','VALASARAVAKKAM')
;

INSERT INTO BANK_INFO(IFSC_CODE,BANK_NAME,BRANCH_NAME)
VALUES('SBITN0123','SBI','TNAGAR');

INSERT INTO BANK_INFO(IFSC_CODE,BANK_NAME,BRANCH_NAME)
VALUES('ICITN0232','ICICI','TNAGAR');

INSERT INTO BANK_INFO(IFSC_CODE,BANK_NAME,BRANCH_NAME)
VALUES('ICIPG0242','ICICI','PERUNGUDI');

INSERT INTO BANK_INFO(IFSC_CODE,BANK_NAME,BRANCH_NAME)
VALUES('SBISD0113','SBI','SAIDAPET');
```

-- CUSTOMER_PERSONAL_INFO

```
INSERT INTO
CUSTOMER_PERSONAL_INFO(CUSTOMER_ID,CUSTOMER_NAME,DATE_OF_BIRTH,GUARDIAN_NAME,A
DDRESS,CONTACT_NO,MAIL_ID,GENDER,MARITAL_STATUS,IDENTIFICATION_DOC_TYPE,ID_DOC_NO,CIT
IZENSHIP) VALUES('C-001','JOHN','1984-05-03','PETER','NO.14, ST.MARKS
ROAD,BANGALORE',9734526719,'JOHN_123@gmail.com','M','SINGLE','PASSPORT','PASS123','INDIAN');

INSERT INTO
CUSTOMER_PERSONAL_INFO(CUSTOMER_ID,CUSTOMER_NAME,DATE_OF_BIRTH,GUARDIAN_NAME,A
DDRESS,CONTACT_NO,MAIL_ID,GENDER,MARITAL_STATUS,IDENTIFICATION_DOC_TYPE,ID_DOC_NO,CIT
IZENSHIP) VALUES('C-002','JAMES','1984-08-06','GEORGE','NO.18, MG
ROAD,BANGALORE',9237893481,'JAMES_123@gmail.com','M','MARRIED','PASSPORT','PASS124','INDIAN
');

INSERT INTO
CUSTOMER_PERSONAL_INFO(CUSTOMER_ID,CUSTOMER_NAME,DATE_OF_BIRTH,GUARDIAN_NAME,A
DDRESS,CONTACT_NO,MAIL_ID,GENDER,MARITAL_STATUS,IDENTIFICATION_DOC_TYPE,ID_DOC_NO,CIT
IZENSHIP) VALUES('C-003','SUNITHA','1984-11-06','VINOD','NO.21, GM
ROAD,CHENNAI',9438978389,'SUNITHA_123@gmail.com','F','SINGLE','VOTER-ID','GMV1234','INDIAN');

INSERT INTO
CUSTOMER_PERSONAL_INFO(CUSTOMER_ID,CUSTOMER_NAME,DATE_OF_BIRTH,GUARDIAN_NAME,A
```

```
DDRESS,CONTACT_NO,MAIL_ID,GENDER,MARITAL_STATUS,IDENTIFICATION_DOC_TYPE,ID_DOC_NO,CIT
IZENSHIP) VALUES('C-004','RAMESH','1985-12-11','KRISHNAN','NO.14,LB
ROAD,CHENNAI',9235234534,'RAMESH_123@gmail.com','M','MARRIED','PASSPORT','PASS125','INDIAN'
);

INSERT INTO
CUSTOMER_PERSONAL_INFO(CUSTOMER_ID,CUSTOMER_NAME,DATE_OF_BIRTH,GUARDIAN_NAME,A
DDRESS,CONTACT_NO,MAIL_ID,GENDER,MARITAL_STATUS,IDENTIFICATION_DOC_TYPE,ID_DOC_NO,CIT
IZENSHIP) VALUES('C-005','KUMAR','1983-04-26','KIRAN','NO.18,MM
ROAD,BANGALORE',9242342312,'KUMAR_123@gmail.com','M','SINGLE','PASSPORT','PASS126','INDIAN')
;




-- CUSTOMER_REFERENCE_INFO


INSERT INTO
CUSTOMER_REFERENCE_INFO(CUSTOMER_ID,REFERENCE_ACC_NAME,REFERENCE_ACC_NO,REFERENC
E_ACC_ADDRESS,RELATION) VALUES('C-001','RAM',0987654321122345,'NO.11,BRIGRADE
ROAD,BANGALORE','FRIEND');

INSERT INTO
CUSTOMER_REFERENCE_INFO(CUSTOMER_ID,REFERENCE_ACC_NAME,REFERENCE_ACC_NO,REFERENC
E_ACC_ADDRESS,RELATION) VALUES('C-002','RAGHUL',0987654321122346,'NO.21,CUNNGHAM
ROAD,BANGALORE','FRIEND');

INSERT INTO
CUSTOMER_REFERENCE_INFO(CUSTOMER_ID,REFERENCE_ACC_NAME,REFERENCE_ACC_NO,REFERENC
E_ACC_ADDRESS,RELATION) VALUES('C-
003','GOKUL',0987654321122357,'NO.12,OMR,CHENNAI','NEIGHBOUR');

INSERT INTO
CUSTOMER_REFERENCE_INFO(CUSTOMER_ID,REFERENCE_ACC_NAME,REFERENCE_ACC_NO,REFERENC
E_ACC_ADDRESS,RELATION) VALUES('C-
004','RAHMAN',0987654321122348,'NO.35,ECR,CHENNAI','FRIEND');

INSERT INTO
CUSTOMER_REFERENCE_INFO(CUSTOMER_ID,REFERENCE_ACC_NAME,REFERENCE_ACC_NO,REFERENC
E_ACC_ADDRESS,RELATION) VALUES('C-005','VIVEK',0987654321122359,'NO.78,JAYA
NAGAR,BANGALORE','NEIGHBOUR');
```

-- ACCOUNT_INFO

```
INSERT INTO
ACCOUNT_INFO(ACCOUNT_NO,CUSTOMER_ID,ACCOUNT_TYPE,REGISTRATION_DATE,ACTIVATION_DAT
E,IFSC_CODE,INTEREST, INITIAL_DEPOSIT) VALUES(1234567898765432,'C-001','SAVINGS','2012-02-
23','2012-02-28','HDVL0012',5,10000);

INSERT INTO
ACCOUNT_INFO(ACCOUNT_NO,CUSTOMER_ID,ACCOUNT_TYPE,REGISTRATION_DATE,ACTIVATION_DAT
E,IFSC_CODE,INTEREST, INITIAL_DEPOSIT) VALUES(1234567898765433,'C-002','SALARY','2012-03-
12','2012-03-17','SBITN0123',6,0 );

INSERT INTO
ACCOUNT_INFO(ACCOUNT_NO,CUSTOMER_ID,ACCOUNT_TYPE,REGISTRATION_DATE,ACTIVATION_DAT
E,IFSC_CODE,INTEREST, INITIAL_DEPOSIT) VALUES(1234567898765434,'C-003','SAVINGS','2012-03-
15','2012-03-20','ICITN0232',4,16000 );

INSERT INTO
ACCOUNT_INFO(ACCOUNT_NO,CUSTOMER_ID,ACCOUNT_TYPE,REGISTRATION_DATE,ACTIVATION_DAT
E,IFSC_CODE,INTEREST, INITIAL_DEPOSIT) VALUES(1234567898765435,'C-004','SALARY','2012-04-
05','2012-04-10','HDVL0012',7,0);

INSERT INTO
ACCOUNT_INFO(ACCOUNT_NO,CUSTOMER_ID,ACCOUNT_TYPE,REGISTRATION_DATE,ACTIVATION_DAT
E,IFSC_CODE,INTEREST, INITIAL_DEPOSIT) VALUES(1234567898765436,'C-005','SAVINGS','2012-04-
12','2012-04-17','SBISD0113',8,20000);
```

QUESTIONS

1. Write a query which will display the customer id, account type they hold, their account number and bank name.
2. Write a query which will display the customer id, account type and the account number of HDFC customers who registered after 12-JAN-2012 and before 04-APR-2012.
3. Write a query which will display the customer id, customer name, account no, account type and bank name where the customers hold the account.

4. Write a query which will display the customer id, customer name, gender, marital status along with the unique reference string and sort the records based on customer id in descending order.
   <b>Hint: Generate unique reference string as mentioned below:
   CustomerName_Gender_MaritalStatus
   <b> Example,
   C-005 KUMAR M SINGLE KUMAR_M_SINGLE
   Use "UNIQUE_REF_STRING" as alias name for displaying the unique reference string.
5. Write a query which will display the account number, customer id, registration date, initial deposit amount of the customer whose initial deposit amount is within the range of Rs.15000 to Rs.25000.
6. Write a query which will display customer id, customer name, date of birth, guardian name of the customers whose name starts with 'J'.
7. Write a query which will display customer id, account number and passcode.
   Hint: To generate passcode, join the last three digits of customer id and last four digit of account number.
   Example
   C-001 1234567898765432 0015432
   Use "PASSCODE" as alias name for displaying the passcode.
8. Write a query which will display the customer id, customer name, date of birth, Marital Status, Gender, Guardian name, contact no and email id of the customers whose gender is male 'M' and marital status is MARRIED.
9. Write a query which will display the customer id, customer name, guardian name, reference account holders name of the customers who are referenced / referred by their 'FRIEND'.
10. Write a query to display the customer id, account number and interest amount in the below format with INTEREST_AMT as alias name. Sort the result based on the INTEREST_AMT in ascending order. Example: $5Hint: Need to prefix $ to interest amount and round the result without decimals.
11. Write a query which will display the customer id, customer name, account no, account type, activation date, bank name whose account will be activated on '10-APR-2012'
12. Write a query which will display account number, customer id, customer name, bank name, branch name, ifsc code, citizenship, interest and initial deposit amount of all the customers.
13. Write a query which will display customer id, customer name, date of birth, guardian name, contact number, mail id and reference account holder's name of the customers who has submitted the passport as an identification document.
14. Write a query to display the customer id, customer name, account number, account type, initial deposit, interest who have deposited maximum amount in the bank.
15. Write a query to display the customer id, customer name, account number, account type, interest, bank name and initial deposit amount of the customers who are getting maximum interest rate.
16. Write a query to display the customer id, customer name, account no, bank name, contact no and mail id of the customers who are from BANGALORE.
17. Write a query which will display customer id, bank name, branch name, ifsc code, registration date, activation date of the customers whose activation date is in the month of march (March 1'st to March 31'st).

18. Write a query which will calculate the interest amount and display it along with customer id, customer name, account number, account type, interest, and initial deposit amount.Hint :Formula for interest amount, calculate: ((interest/100) * initial deposit amt) with column name 'interest_amt' (alias)
19. Write a query to display the customer id, customer name, date of birth, guardian name, contact number, mail id, reference name who has been referenced by 'RAGHUL'.
20. Write a query which will display the customer id, customer name and contact number with ISD code of all customers in below mentioned format. Sort the result based on the customer id in descending order. Format for contact number is :
    "+91-3digits-3digits-4digits"
    Example: +91-924-234-2312
    Use "CONTACT_ISD" as alias name.
21. Write a query which will display account number, account type, customer id, customer name, date of birth, guardian name, contact no, mail id , gender, reference account holders name, reference account holders account number, registration date, activation date, number of days between the registration date and activation date with alias name "NoofdaysforActivation", bank name, branch name and initial deposit for all the customers.
22. Write a query which will display customer id, customer name, guardian name, identification doc type, reference account holders name, account type, ifsc code, bank name and current balance for the customers who has only the savings account.
    Hint: Formula for calculating current balance is add the intital deposit amount and interest and display without any decimals. Use "CURRENT_BALANCE" as alias name.
23. Write a query which will display the customer id, customer name, account number, account type, interest, initial deposit; check the initial deposit, if initial deposit is 20000 then display "high", if initial deposit is 16000 display 'moderate', if initial deposit is 10000 display 'average', if initial deposit is 5000 display 'low', if initial deposit is 0 display 'very low' otherwise display 'invalid' and sort by interest in descending order.
    Hint: Name the column as "Deposit_Status" (alias). Strictly follow the lower case for strings in this query.
24. Write a query which will display customer id, customer name, account number, account type, bank name, ifsc code, initial deposit amount and new interest amount for the customers whose name starts with "J".
    Hint: Formula for calculating "new interest amount" is if customers account type is savings then add 10 % on current interest amount to interest amount else display the current interest amount. Round the new interest amount to 2 decimals. Use "NEW_INTEREST" as alias name for displaying the new interest amount.
    Example, Assume Jack has savings account and his current interest amount is 10.00, then the new interest amount is 11.00 i.e (10 + (10 * 10/100)).

25. Write query to display the customer id, customer name, account no, initial deposit, tax percentage as calculated below.Hint: If initial deposit = 0 then tax is '0%'If initial deposit <= 10000 then tax is '3%' If initial deposit > 10000 and initial deposit < 20000 then tax is '5%' If initial deposit >= 20000 and initial deposit<=30000 then tax is '7%' If initial deposit > 30000 then tax is '10%' Use the alias name 'taxPercentage'

ANSWERS

1) select a.Customer_ID, a.account_type, a.account_no, b.bank_name from account_info a join bank_info b on(a.ifsc_code = b.ifsc_code);
2) select Customer_ID, account_type, account_no from account_info a join bank_info b on(a.ifsc_code = b.ifsc_code) where b.bank_name = 'HDFC' and registration_date between '2012-01-12' and '2012-04-04';
3) select a.Customer_ID, c.Customer_Name, a.account_no, a.account_type, b.bank_name from account_info a
   join bank_info b on(a.ifsc_code = b.ifsc_code)
   join customer_personal_info c on(a.customer_id = c.customer_id);
4) select Customer_ID, Customer_Name, gender, marital_status, concat(customer_name,'_',gender,'_',marital_status) UNIQUE_REF_STRING from customer_personal_info;
5) select account_no, customer_id, registration_date, initial_deposit from account_info where initial_deposit between 15000 and 25000;
6) select Customer_ID, Customer_Name, date_of_birth, guardian_name from customer_personal_info where guardian_name like 'j%';
7) select Customer_ID, account_no, concat(substr(customer_id,3,5),substr(account_no,14,16)) passcode from account_info;
8) select Customer_ID, Customer_Name, date_of_birth, marital_status, gender, guardian_name, contact_no, mail_id from customer_personal_info where gender = 'm' and marital_status = 'married';
9) select c.customer_id, c.Customer_Name, c.guardian_name, r.reference_acc_name from customer_personal_info c join customer_reference_info r on(c.customer_id = r.customer_id) where relation = 'friend';
10) select customer_id, account_no, concat('$',round(interest)) INTEREST_AMT from account_info group by interest;
11) select i.Customer_ID, i.Customer_Name, a.account_no, a.account_type, a.activation_date, b.bank_name
    from customer_personal_info i join account_info a on(i.customer_id = a.customer_id)
    join bank_info b on(a.ifsc_code = b.ifsc_code)

where a.activation_date = '2012-04-10';

12) select a.account_no, a.customer_id, c.customer_name, b.bank_name, b.branch_name, b.ifsc_code, c.citizenship, a.interest, a.initial_deposit from account_info a join bank_info b on(a.ifsc_code = b.ifsc_code) join customer_personal_info c on(a.customer_id = c.customer_id);
13) select a.customer_id, a.customer_name, a.date_of_birth, a.guardian_name, a.contact_no, a.mail_id, b.reference_acc_name from customer_personal_info a join customer_reference_info b on(a.customer_id = b.customer_id) where a.identification_doc_type = 'passport';
14) select b.customer_id, a.customer_name, b.account_no, b.account_type, b.initial_deposit, b.interest from customer_personal_info a join account_info b on(a.customer_id = b.customer_id) where b.initial_deposit = (select max(initial_deposit) from account_info);
15) select b.customer_id, a.customer_name, b.account_no, b.account_type, b.interest,c.bank_name,b.initial_deposit from account_info b join customer_personal_info a on(a.customer_id = b.customer_id) join bank_info c on(b.ifsc_code = c.ifsc_code) where b.interest = (select max(interest) from account_info);
16) select a.Customer_ID, a.customer_name, b.account_no, c.bank_name, a.contact_no, a.mail_id from customer_personal_info a join account_info b on(a.customer_id = b.customer_id) join bank_info c on(b.ifsc_code = c.ifsc_code) where a.address like '%bangalore';
17) select b.customer_id, a.bank_name, a.branch_name, a.ifsc_code, b.registration_date, b.activation_date from bank_info a join account_info b on(a.ifsc_code = b.ifsc_code) where b.activation_date like '%-03-%';
18) select a.customer_id, a.customer_name, b.account_no, b.account_type, b.interest, b.initial_deposit, ((b.interest/100)*b.initial_deposit) interest_amt from customer_personal_info a join account_info b on(a.customer_id = b.customer_id);
19) select a.customer_id, a.customer_name, a.date_of_birth, a.guardian_name, a.contact_no, a.mail_id, b.reference_acc_name from customer_personal_info a join customer_reference_info b on(a.customer_id = b.customer_id) where reference_acc_name = 'raghul';
20) select Customer_ID, Customer_Name, concat('+91-',substr(contact_no,1,3),'-',substr(contact_no,4,3),'-',substr(contact_no,7,4)) CONTACT_ISD from customer_personal_info;
21) select a.ACCOUNT_NO, a.ACCOUNT_TYPE, a.CUSTOMER_ID, b.CUSTOMER_NAME, b.DATE_OF_BIRTH, b.GUARDIAN_NAME, b.CONTACT_NO, b.MAIL_ID, b.GENDER, c.REFERENCE_ACC_NAME, c.REFERENCE_ACC_NO, a.REGISTRATION_DATE,

a.ACTIVATION_DATE, d.BANK_NAME, d.BRANCH_NAME, a.INITIAL_DEPOSIT,
(a.ACTIVATION_DATE-a.REGISTRATION_DATE) NoOfDaysForActivation from
account_info a join customer_personal_info b on(a.customer_id = b.customer_id)
join bank_info d on(a.ifsc_code = d.ifsc_code) join customer_reference_info c
on(b.customer_id = c.customer_id);

22) select a.CUSTOMER_ID, a.CUSTOMER_NAME, a.GUARDIAN_NAME,
a.IDENTIFICATION_DOC_TYPE, b.REFERENCE_ACC_NAME, c.ACCOUNT_TYPE,
c.IFSC_CODE, d.BANK_NAME,
round(c.initial_deposit+((c.interest/100)*c.initial_deposit)) current_balance from
customer_personal_info a join customer_reference_info b on(b.customer_id =
a.customer_id) join account_info c on(a.customer_id = c.customer_id)
join bank_info d on(c.ifsc_code = d.ifsc_code);

23) select a.CUSTOMER_ID, b.CUSTOMER_NAME, a.ACCOUNT_NO, a.ACCOUNT_TYPE,
a.INTEREST, CASE WHEN INITIAL_DEPOSIT = 20000 then 'high'
WHEN INITIAL_DEPOSIT = 16000 then 'moderate' WHEN INITIAL_DEPOSIT = 10000 THEN
'average’ when INITIAL_DEPOSIT = 5000 then 'low' when initial_deposit = 0 then 'very
low' END as Deposit_Status from account_info a
join customer_personal_info b on(a.customer_id = b.customer_id);

24) select a.CUSTOMER_ID, b.CUSTOMER_NAME, a.ACCOUNT_NO, a.ACCOUNT_TYPE,
c.BANK_NAME, c.IFSC_CODE, a.INITIAL_DEPOSIT, if(ACCOUNT_TYPE = 'savings',
round(a.interest+(a.interest*(a.interest/100)),2), a.interest) as NEW_INTEREST
from account_info a join customer_personal_info b on(a.customer_id = b.customer_id)
join bank_info c on(a.ifsc_code = c.ifsc_code)
where CUSTOMER_NAME like 'j%';

25) select a.CUSTOMER_ID, b.customer_name, a.account_no, a.INITIAL_DEPOSIT,
case
when a.INITIAL_DEPOSIT = 0 then '0%'
when a.INITIAL_DEPOSIT <= 10000 then '3%'
when a.INITIAL_DEPOSIT > 10000 && a.INITIAL_DEPOSIT <= 20000 then '5%'
when a.INITIAL_DEPOSIT > 20000 && a.INITIAL_DEPOSIT <= 30000 then '7%'
when a.INITIAL_DEPOSIT > 30000 then '10%'
END as taxPercentage from account_info a
join customer_personal_info b on(a.customer_id = b.customer_id);