PRACTICAL-3

i) Create table ACCOUNT_Key with following constraints.

Column name	Data Type	Size	Attributes
Acc_no	Varchar2	5	Primary key / first letter must start with 'A'
Name	Varchar2	30	NOT NULL
City	Varchar2	20	NOT NULL
Balance	Number	10,2	Balance >=500
Loan_taken	Varchar2	3	Values('NO','YES')

SQL statement:

```
create table account_key (acc_no varchar2(5) primary key CHECK (acc_no like 'A%'), name
VARCHAR2(30) not null,city VARCHAR2(20) not null, balance number(10,2)
check(balance>=500),loan_taken VARCHAR2(5) check(loan_taken in ('NO','YES')));
```

Output:

```
Table ACCOUNT_KEY created.

Name        Null?    Type
----------- -------- ------------
ACC_NO      NOT NULL VARCHAR2(5)
NAME        NOT NULL VARCHAR2(30)
CITY        NOT NULL VARCHAR2(20)
BALANCE              NUMBER(10,2)
LOAN_TAKEN           VARCHAR2(5)
```

ii) Insert following records and Write Appropriate Comment on insertion operation if require.

acc_no	Name	City	Balance	loan_taken
A001	Patel Jigar	Mehsana	50000	YES
A002	Patel Ramesh	Mehsana	50000	YES
A003	Dave Hardik	Ahmedabad	75000	NO
A004	Soni Hetal	Ahmedabad	100000	NO
A005	Sony Atul	Vadodara	100000	YES
A005	Patel Arun	Surat	4000	No
A006	NULL	Baroda	5000	NO
A007	Patel Rachit	NULL	6000	NO
A008	Patel Vir	Mehsana	400	NO
A009	Patel Vyom	Surat	1000	ABC

SQL statement:

```
insert into account_key values ('A001', 'Patel Jigar','Mehsana', 50000, 'YES');
insert into account_key values ('A002', 'Patel Ramesh','Mehsana', 50000, 'YES');
insert into account_key values ('A003', 'Dave Hardik','Ahmedabad', 75000, 'NO');
insert into account_key values ('A004', 'Soni Hetal','Ahmedabad', 100000, 'NO');
insert into account_key values ('A005', 'Sony Atul','Vadodara', 100000, 'YES');
insert into account_key values ('A005', 'Patel Arun', 'Surat', 4000, No);
insert into account_key values ('A006', NULL, 'Baroda', 5000, NO);
insert into account_key values ('A007', 'Patel Rachit', NULL, 6000, NO);
insert into account_key values ('A008', 'Patel Vir', 'Mehsana', 400, NO);
insert into account_key values ('A009', 'Patel Vyom', 'Surat', 1000, ABC);
```

Output:

```
1 row inserted.

1 row inserted.

1 row inserted.

1 row inserted.

1 row inserted.
```

```
Error starting at line : 8 in command -
insert into account_key values ('A005', 'Patel Arun', 'Surat', 4000, No)
Error at Command Line : 8 Column : 70
Error report -
SQL Error: ORA-00984: column not allowed here
00984. 00000 -  "column not allowed here"
*Cause:
*Action:

Error starting at line : 9 in command -
insert into account_key values ('A006', NULL, 'Baroda', 5000, NO)
Error at Command Line : 9 Column : 63
Error report -
SQL Error: ORA-00984: column not allowed here
00984. 00000 -  "column not allowed here"
*Cause:
*Action:

Error starting at line : 10 in command -
insert into account_key values ('A007', 'Patel Rachit', NULL, 6000, NO)
Error at Command Line : 10 Column : 69
Error report -
SQL Error: ORA-00984: column not allowed here
00984. 00000 -  "column not allowed here"
*Cause:
*Action:

Error starting at line : 11 in command -
insert into account_key values ('A008', 'Patel Vir', 'Mehsana', 400, NO)
Error at Command Line : 11 Column : 70
Error report -
SQL Error: ORA-00984: column not allowed here
00984. 00000 -  "column not allowed here"
*Cause:
*Action:

Error starting at line : 12 in command -
insert into account_key values ('A009', 'Patel Vyom', 'Surat', 1000, ABC)
Error at Command Line : 12 Column : 70
Error report -
SQL Error: ORA-00984: column not allowed here
00984. 00000 -  "column not allowed here"
*Cause:
*Action:
```

acc_no	Name	City	Balance	loan_taken	Comment
A001	Patel Jigar	Mehsana	50000	YES	
A002	Patel Ramesh	Mehsana	50000	YES	
A003	Dave Hardik	Ahmedabad	75000	NO	
A004	Soni Hetal	Ahmedabad	100000	NO	
A005	Sony Atul	Vadodara	100000	YES	
A005	Patel Arun	Surat	4000	No	Acc_no is unique
A006	NULL	Baroda	5000	NO	Name is not null
A007	Patel Rachit	NULL	6000	NO	City is not null
A008	Patel Vir	Mehsana	400	NO	Balance is less than 500
A009	Patel Vyom	Surat	1000	ABC	In Loan taken “ABC” not valid

iii) Create table Loan_Key with following constraints.

Column Name	Data Type	Size	Attributes
Loan_no	Varchar2	5	Primary Key / first letter must start with ‘L’
Acc_no	Varchar2	5	Foreign key References Acc_no of account table

Loan_amt	Number	10,2	NOT NULL
Interest_rate	Number	5,2	NOT NULL
Loan_date	Date		
Remaining_loan	Number	10,2	Remaining loan<loan amount

SQL statement:

```
create table loan_key (loan_no varchar2(5) primary key check(loan_no like 'L%'), acc_no
varchar2(5), loan_amt number(10,2) not null,
interest_rate number(5,2) not null, loan_date date, remaining_loan number(10,2),
check(remaining_loan < loan_amt),
foreign key (acc_no) references account_key(acc_no));
```

Output:

```
Script Output x
Task completed in 0.098 seconds

Name           Null?    Type
-------------- -------- ------------
LOAN_NO        NOT NULL VARCHAR2(5)
ACC_NO                  VARCHAR2(5)
LOAN_AMT       NOT NULL NUMBER(10,2)
INTEREST_RATE  NOT NULL NUMBER(5,2)
LOAN_DATE               DATE
REMAINING_LOAN          NUMBER(10,2)
```

iv) Insert data into table Loan_Key.

SQL statement:

```
insert into loan_key values('L001','A001',100000,7,'1-Jan-04',75000);
insert into loan_key values('L002','A002',300000,9,'18-May-04',150000);
insert into loan_key values('L003','A003',500000,11,'15-Jun-04',300000);
```

Output:

	LOAN_NO	ACC_NO	LOAN_AMT	INTEREST_RATE	LOAN_DATE	REMAINING_LOAN
1	L001	A001	100000	7	01-01-04	75000
2	L002	A002	300000	9	18-05-04	150000
3	L003	A003	500000	11	15-06-04	300000

v) Create table Installment_Key with following constraints.

Column Name	Data Type	Size	Attributes
Loan_no	Varchar2	5	Foreign key References Loan_no of Loan table
Inst_no	Varchar2	5	first letter must start with 'I'
IDate	Date		NOT NULL
Amount	Number	10,2	NOT NULL

SQL statement:

```
create table installment_key (loan_no varchar2(5) , inst_no varchar2(5) check(inst_no like 'I%'),
inst_date date not null,  amount number(10,2) not null,
foreign key (loan_no)references loan_key(loan_no));
```

Output:

```
Name      Null?    Type
--------- -------- ------------
LOAN_NO            VARCHAR2(5)
INST_NO            VARCHAR2(5)
INST_DATE NOT NULL DATE
AMOUNT    NOT NULL NUMBER(10,2)
```

vi) Insert data into table Installment_Key.
SQL statement:
insert into installment_key values ('L001', 'I001','2-Feb-04', 15000);
insert into installment_key values ('L002', 'I002','18-Jun-04', 20000);
insert into installment_key values ('L003', 'I003','15-Jul-04', 20000);
Output:

	LOAN_NO	INST_NO	INST_DATE	AMOUNT
1	L001	I001	02-02-04	15000
2	L002	I002	18-06-04	20000
3	L003	I003	15-07-04	20000

vii) Create table Student.
SQL statement:
create table student (rollno varchar2(6),name varchar2(20),branch varchar2(6), address varchar2(20))
Output:

```
Name    Null?    Type
------- -------- ------------
ROLLNO  NOT NULL VARCHAR2(6)
NAME    NOT NULL VARCHAR2(20)
BRANCH  NOT NULL VARCHAR2(6)
ADDRESS          VARCHAR2(20)
```

viii) Create table Register.
SQL statement:
create table register (rollno varchar2(6),name varchar2(20));
Output:

```
Name    Null? Type
------ ----- ------------
ROLLNO        VARCHAR2(6)
NAME          VARCHAR2(20)
```

1) Add PRIMARY KEY (roll no) and provide constraint name PRIM_rollno.
SQL statement:
alter table student add CONSTRAINT prim_rollno primary key (rollno);
Output:

	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	PRIM_ROLLNO	Primary_Key	(null)

2) Add NOT NULL constraint to name,branch for student table.
SQL statement:
alter table student modify name VARCHAR2(20) not null;
alter table student modify branch VARCHAR2(6) not null;
Output:

	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	PRIM_ROLLNO	Primary_Key	(null)
2	SYS_C004256	Check	"NAME" IS NOT NULL
3	SYS_C004258	Check	"BRANCH" IS NOT NULL

3) Add check constraint and check name is in capital letter.

SQL statement:

alter table student add CONSTRAINT check_name check(name= upper(name));

Output:

	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	CHECK_NAME	Check	name= upper(name)
2	PRIM_ROLLNO	Primary_Key	(null)
3	SYS_C004258	Check	"BRANCH" IS NOT NULL
4	SYS_C004275	Check	"NAME" IS NOT NULL

4) Drop the primary key.

SQL statement:

alter table student drop primary key;

Output:

	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	CHECK_NAME	Check	name= upper(name)
2	SYS_C004258	Check	"BRANCH" IS NOT NULL
3	SYS_C004275	Check	"NAME" IS NOT NULL

5) Drop the constraint.

SQL statement:

alter table student drop constraint check_name;

Output:

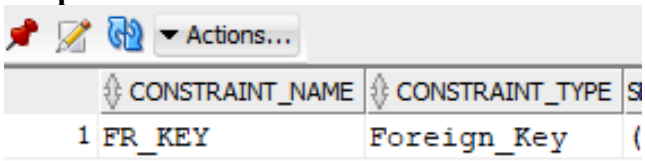
	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	SYS_C004256	Check	"NAME" IS NOT NULL
2	SYS_C004258	Check	"BRANCH" IS NOT NULL

6) Provide foreign key references rollno of student table.

SQL statement:

alter table register add CONSTRAINT fr_key foreign key (rollno) references student (rollno);

Output:



7) Add check constraint to check name's first letter is always capital.

SQL statement:

alter table register add CONSTRAINT chk_name check (name=initcap(name));

Output:

	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	CHK_NAME	Check	name=initcap(name)
2	FR_KEY	Foreign_Key	(null)

8) Add NOT NULL constraint to name of register table.

SQL statement:

alter table register modify name VARCHAR2(20) not null;

Output:

	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	CHK_NAME	Check	name=initcap(name)
2	FR_KEY	Foreign_Key	(null)
3	SYS_C004271	Check	"NAME" IS NOT NULL

9) Drop foreign key of REGISTER table.

SQL statement:

alter table register drop CONSTRAINT fr_key;

Output:

	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	CHK_NAME	Check	name=initcap(name)
2	SYS_C004271	Check	"NAME" IS NOT NULL

10) Drop NOT NULL constraint.

SQL statement:

alter table student drop constraint SYS_C004258;

Output:

	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	SYS_C004275	Check	"NAME" IS NOT NULL