

ADVANCED DATABASE MANAGEMENT SYSTEM LAB RECORD(20MCA102)

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S2RMCA-A

ROLL NO:32

EXPERIMENT NO. 1

AIM To study various DDL commands - CREATE

Question Create the following Tables

Table 1: DEPOSIT

ACTNO VARCHAR2(5) PRIMARY KEY, FIRST LETTER MUST START WITH 'D' CNAME VARCHAR2(15)
FOREIGN KEY REFERENCES CUSTOMER BNAME VARCHAR2(20) FOREIGN KEY REFERENCES BRANCH
AMOUNT NUMBER (8,2) NOT NULL, CANNOT BE 0 ADATE DATE

Table 2: BRANCH

BNAME VARCHAR2(20) PRIMARY KEY CITY VARCHAR2(30) NOT NULL , any one of NAGPUR, DELHI,
BANGALORE, BOMBAY

Table 3: CUSTOMER

CNAME VARCHAR2(15) PRIMARY KEY CITY VARCHAR2(20) NOT NULL ,

Table 4: BORROW

LOANNO VARCHAR2(8) PRIMARY KEY / FIRST LETTER MUST START WITH 'L' CNAME VARCHAR2(15)
FOREIGN KEY REFERENCES CUSTOMER BNAME VARCHAR2(20) FOREIGN KEY REFERENCES BRANCH
AMOUNT NUMBER(8,2) NOT NULL, CANNOT BE 0

INSERTION OF VALUES

1. Inserting values to Branch

VRCE	NAGPUR
AJNI	NAGPUR
KAROLBAGH	DELHI
CHANDNI	DELHI
DHARAMPETH	NAGPUR
MG ROAD	BANGALORE
ANDHERI	BOMBAY
NEHRU PALACE	DELHI
POWAI	BOMBAY

2. Inserting values into Customer table

ANIL	CALCUTTA
SUNIL	DELHI
MEHUL	BARODA
MANDAR	PATNA

MADHURI	NAGPUR
PRAMOD	NAGPUR
SANDIP	SURAT
SHIVANI	BOMBAY
KRANTI	BOMBAY
NAREN	BOMBAY

3. Inserting values into Deposit table

Actno	Cname	Bname	Amount	Adate
D100	ANIL	VRCE	1000.00	1-MAR-95
D101	SUNIL	ANJNI	500.00	4-JAN-96
D102	MEHUL	KAROLBAGH	3500.00	17-NOV-95
D104	MADHURI	CHANDNI	1200.00	17-DEC-95
D105	PRAMOD	MG ROAD	3000.00	27-MAR-96
D106	SANDIP	ANDHERI	2000.00	31-MAR-96
D107	SHIVANI	VIRAR	1000.00	5-SEP-95
D108	KRANTI	NEHRU PLACE	5000.00	2-JUL-95
D109	MINU	POWAI	7000.00	10-AUG-95

4. Inserting values into borrow table

L201	ANIL	VRCE	1000.00
L206	MEHUL	AJNI	5000.00
L311	SUNIL	DHARAMPETH	3000.00
L321	MADHURI	ANDHERI	2000.00
L371	PRAMOD	VIRAR	8000.00
L481	KRANTI	NEHRU PLACE	3000.00

OUTPUT

```
CREATE TABLE CUSTOMER (CNAME VARCHAR(15) PRIMARY KEY ,CITY VARCHAR(20) NOT NULL );
```

```
CREATE TABLE BRANCH (BNAME VARCHAR(20) PRIMARY KEY,CITY VARCHAR(30) CHECK (CITY IN ('NAGPUR','DELHI','BANGALORE','BOMBAY')) NOT NULL);
```

```
CREATE TABLE BORROW (LOANNO VARCHAR(8) CHECK (LOANNO LIKE 'L%') PRIMARY KEY,CNAME VARCHAR(15) REFERENCES CUSTOMER(CNAME) ,BNAME VARCHAR(20) REFERENCES BRANCH(BNAME),AMOUNT FLOAT(8) CHECK (AMOUNT>0) NOT NULL);
```

```
CREATE TABLE DEPOSIT (ACTNO VARCHAR(5) CHECK (ACTNO LIKE 'D%') PRIMARY KEY ,CNAME VARCHAR(15) REFERENCES CUSTOMER(CNAME) ,BNAME VARCHAR(20) REFERENCES BRANCH(BNAME),AMOUNT FLOAT(8) CHECK (AMOUNT>0) NOT NULL, ADATE DATE);
```

```
INSERT INTO CUSTOMER VALUES('ANIL','CALCUTTA');
INSERT INTO CUSTOMER VALUES('SUNIL','DELHI');
INSERT INTO CUSTOMER VALUES('MEHUL','BARODA');
INSERT INTO CUSTOMER VALUES('MANDAR','PATNA');
INSERT INTO CUSTOMER VALUES('MADHURI','NAGPUR');
INSERT INTO CUSTOMER VALUES('PRAMOD','NAGPUR');
INSERT INTO CUSTOMER VALUES('SANDIP','SURAT');
INSERT INTO CUSTOMER VALUES('SHIVANI','BOMBAY');
INSERT INTO CUSTOMER VALUES('KRANTI','BOMBAY');
INSERT INTO CUSTOMER VALUES('NAREN','BOMBAY');
INSERT INTO BRANCH VALUES('VRCE','NAGPUR');
INSERT INTO BRANCH VALUES('AJNI','NAGPUR');
INSERT INTO BRANCH VALUES('KAROLBAGH','DELHI');
INSERT INTO BRANCH VALUES('CHANDNI','DELHI');
INSERT INTO BRANCH VALUES('DHARAMPETH','NAGPUR');
INSERT INTO BRANCH VALUES('MG ROAD','BANGALORE');
INSERT INTO BRANCH VALUES('ANDHERI','BOMBAY');
INSERT INTO BRANCH VALUES('NEHRU PALACE','DELHI');
INSERT INTO BRANCH VALUES('POWAI','BOMBAY');
INSERT INTO DEPOSIT VALUES('D100','ANIL','VRCE',1000.00,'1-MAR-95');
INSERT INTO DEPOSIT VALUES('D101','SUNIL','ANJNI',500.00,'4-JAN-96');
INSERT INTO DEPOSIT VALUES('D102','MEHUL','KAROLBAGH',3500.00,'17-NOV95');
INSERT INTO DEPOSIT VALUES('D104','MADHURI','CHANDNI',1200.00,'17-DEC-95');
INSERT INTO DEPOSIT VALUES('D105','PRAMOD','MG ROAD',3000.00,'27-MAR-96');
INSERT INTO DEPOSIT VALUES('D106','SANDIP','ANDHERI',2000.00,'31-MAR-96');
INSERT INTO DEPOSIT VALUES('D107','SHIVANI','VIRAR',1000.00,'5-SEP-95');
INSERT INTO DEPOSIT VALUES('D108','KRANTI','NEHRU PLACE',5000.00,'2-JUL95');
INSERT INTO DEPOSIT VALUES('D109','MINU','POWAI',7000.00,'10-AUG-95');
INSERT INTO BORROW VALUES('L201','ANIL','VRCE',1000.00);
```

```
INSERT INTO BORROW VALUES('L206','MEHUL','AJNI',5000.00);
```

```
INSERT INTO BORROW VALUES('L311','SUNIL','DHARAMPETH',3000.00);
```

```
INSERT INTO BORROW VALUES('L321','MADHURI','ANDHERI',2000.00);
```

```
INSERT INTO BORROW VALUES('L371','PRAMOD','VIRAR',8000.00);
```

```
INSERT INTO BORROW VALUES('L481','KRANTI','NEHRU PLACE',3000.00);
```

EXPERIMENT NO. 2

AIM To familiarize with selecting data from single table Questions

1. List all data from table deposit
2. List all data from borrow
3. List all data from customer
4. List all data from branch
5. Give account no and amount of deposit
6. Give customer name and account no of depositors
7. Give name of customers
8. Give name of branches
9. Give name of borrows
10. Give names of customer living in city Nagpur
11. Give names of depositors having amount greater than 4000
12. Give account date of Anil
13. Give name of all branches located in Bombay
14. Give name of borrower having loan number I205
15. Give names of depositors having account at VRCE
16. Give names of all branches located in city Delhi
17. Give name of the customers who opened account date '1-12-96'
18. Give account no and deposit amount of customers having account opened between dates '1-12-96' and '1-5-96'
19. Give name of the city where branch KAROLBAGH is located
20. Give details of customer ANIL

SQL Commands

SELECT*FROM DEPOSIT;

SELECT*FROM BORROW;

SELECT*FROM CUSTOMER;

SELECT*FROM BRANCH;

SELECT ACTNO,AMOUNT FROM DEPOSIT;

SELECT CNAME,ACTNO FROM DEPOSIT;

SELECT CNAME FROM CUSTOMER;

SELECT BNAME FROM BRANCH;

SELECT CNAME FROM BORROW;

SELECT CNAME FROM CUSTOMER WHERE CITY='NAGPUR';

SELECT CNAME from DEPOSIT where AMOUNT>4000;

SELECT ADATE FROM DEPOSIT where CNAME='ANIL';

SELECT BNAME from BRANCH where CITY='Bombay';

SELECT * from BORROW; SELECT CNAME from BORROW where LOANNO='L205';

SELECT CNAME from DEPOSIT WHERE BNAME='VRCE'; SELECT BNAME from BRANCH WHERE CITY='Delhi';

SELECT CNAME from DEPOSIT WHERE ADATE='1996-12-1';

SELECT ACTNO,AMOUNT from DEPOSIT WHERE ADATE BETWEEN '1996-12-1' AND '1996-05-1';

SELECT CITY from BRANCH WHERE BNAME='KAROLBAGH';

SELECT * from customer join borrow on customer.cname=borrow.cname join deposit on deposit.cname=borrow.cname WHERE customer.cname='ANIL';

The screenshot shows a web browser window with the URL `extendsclass.com/mysql-online.html`. The interface includes a toolbar with options like 'Database', 'Queries', 'Export', 'Share Snippet', and a 'Run' button. A text area contains the following SQL code:

```
12 select cname from customer where city='NAGPUR';
13
14 create table BRANCH (BNAME varchar(20),CITY varchar(30)NOT NULL);
15 insert into BRANCH (BNAME, CITY) values ('VRCE', 'NAGPUR');
16 insert into BRANCH (BNAME, CITY) values ('AJNI', 'NAGPUR');
17 insert into BRANCH (BNAME, CITY) values ('KAROLBAGH', 'DELHI');
18 insert into BRANCH (BNAME, CITY) values ('CHANDNI', 'DELHI');
19 insert into BRANCH (BNAME, CITY) values ('DHARAMPETH', 'NAGPUR');
20 insert into BRANCH (BNAME, CITY) values ('MG ROAD', 'BANGALORE');
21 insert into BRANCH (BNAME, CITY) values ('ANDHERI', 'BOMBAY');
22 insert into BRANCH (BNAME, CITY) values ('NAHRU PALACE', 'DELHI');
23 insert into BRANCH (BNAME, CITY) values ('POWAI', 'BOMBAY');
24 select * from BRANCH;
25 select BNAME from BRANCH;
26
```

Below the code, a green bar indicates '9 rows'. A table displays the data for the BRANCH table:

BNAME	CITY
VRCE	NAGPUR
AJNI	NAGPUR
KAROLBAGH	DELHI
CHANDNI	DELHI
DHARAMPETH	NAGPUR
MG ROAD	BANGALORE
ANDHERI	BOMBAY
NAHRU PALACE	DELHI
POWAI	BOMBAY

An 'Activate Windows' watermark is visible in the bottom right corner of the browser window.

```
1 create table CUSTOMER (cname varchar(15),city varchar(20)NOT NULL,PRIMARY KEY(cname));
2 insert into CUSTOMER (cname, city) values ('ANIL', 'CALCUTTA');
3 insert into CUSTOMER (cname, city) values ('SUNIL', 'DELHI');
4 insert into CUSTOMER (cname, city) values ('MEHUL', 'BARODA');
5 insert into CUSTOMER (cname, city) values ('MANDAR', 'PATNA');
6 insert into CUSTOMER (cname, city) values ('MADHURI', 'NAGPUR');
7 insert into CUSTOMER (cname, city) values ('PRAMOD', 'NAGPUR');
8 insert into CUSTOMER (cname, city) values ('SANDIP', 'SURAT');
9 insert into CUSTOMER (cname, city) values ('SHIVANI', 'BOMBAY');
10 insert into CUSTOMER (cname, city) values ('KRANTI', 'BOMBAY');
11 insert into CUSTOMER (cname, city) values ('NAREN', 'BOMBAY');
12 select * from CUSTOMER;
```

10 rows

```
1 create table CUSTOMER (cname varchar(15),city varchar(20)NOT NULL,PRIMARY KEY(cname));
2 insert into CUSTOMER (cname, city) values ('ANIL', 'CALCUTTA');
3 insert into CUSTOMER (cname, city) values ('SUNIL', 'DELHI');
4 insert into CUSTOMER (cname, city) values ('MEHUL', 'BARODA');
5 insert into CUSTOMER (cname, city) values ('MANDAR', 'PATNA');
6 insert into CUSTOMER (cname, city) values ('MADHURI', 'NAGPUR');
7 insert into CUSTOMER (cname, city) values ('PRAMOD', 'NAGPUR');
8 insert into CUSTOMER (cname, city) values ('SANDIP', 'SURAT');
9 insert into CUSTOMER (cname, city) values ('SHIVANI', 'BOMBAY');
10 insert into CUSTOMER (cname, city) values ('KRANTI', 'BOMBAY');
11 insert into CUSTOMER (cname, city) values ('NAREN', 'BOMBAY');
12 select * from CUSTOMER;
```

10 rows

cname	city
ANIL	CALCUTTA
KRANTI	BOMBAY
MADHURI	NAGPUR
MANDAR	PATNA
MEHUL	BARODA
NAREN	BOMBAY
PRAMOD	NAGPUR
SANDIP	SURAT
SHIVANI	BOMBAY
SUNIL	DELHI

Activate Windows
Go to Settings to activate Windows.

```
11 insert into CUSTOMER (cname, city) values ('NAREN', 'BOMBAY');
12 select cname from CUSTOMER where city='NAGPUR';
13
14 create table BRANCH (BNAME varchar(20),CITY varchar(30)NOT NULL);
15 insert into BRANCH (BNAME, CITY) values ('VRCE', 'NAGPUR');
16 insert into BRANCH (BNAME, CITY) values ('AJNI', 'NAGPUR');
17 insert into BRANCH (BNAME, CITY) values ('KAROLBAGH', 'DELHI');
18 insert into BRANCH (BNAME, CITY) values ('CHANDNI', 'DELHI');
19 insert into BRANCH (BNAME, CITY) values ('DHARAMPETH', 'NAGPUR');
20 insert into BRANCH (BNAME, CITY) values ('MG ROAD', 'BANGALORE');
21 insert into BRANCH (BNAME, CITY) values ('ANDHERI', 'BOMBAY');
22 insert into BRANCH (BNAME, CITY) values ('NAHRU PALACE', 'DELHI');
23 insert into BRANCH (BNAME, CITY) values ('POWAI', 'BOMBAY');
24 select * from BRANCH;
```

9 rows

BNAME	CITY
VRCE	NAGPUR
AJNI	NAGPUR
KAROLBAGH	DELHI
CHANDNI	DELHI
DHARAMPETH	NAGPUR
MG ROAD	BANGALORE
ANDHERI	BOMBAY
NAHRU PALACE	DELHI
POWAI	BOMBAY

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extendsclass.com/mysql-online.html#

```
8 insert into CUSTOMER (cname, city) values ('SUNIL', 'BOMBAY');
9 insert into CUSTOMER (cname, city) values ('SHIVANI', 'BOMBAY');
10 insert into CUSTOMER (cname, city) values ('KRANTI', 'BOMBAY');
11 insert into CUSTOMER (cname, city) values ('NAREN', 'BOMBAY');
12 select cname from CUSTOMER;
```

10 rows

cname
ANIL
KRANTI
MADHURI
MANDAR
MEHUL
NAREN
PRAMOD
SANDIP
SHIVANI
SUNIL

extendsclass.com/mysql-online.html

```
12 select cname from CUSTOMER where city='NAGPUR';
13
14 create table BRANCH (BNAME varchar(20),CITY varchar(30)NOT NULL);
15 insert into BRANCH (BNAME, CITY) values ('VRCE', 'NAGPUR');
16 insert into BRANCH (BNAME, CITY) values ('AJNI', 'NAGPUR');
17 insert into BRANCH (BNAME, CITY) values ('KAROLBAGH', 'DELHI');
18 insert into BRANCH (BNAME, CITY) values ('CHANDNI', 'DELHI');
19 insert into BRANCH (BNAME, CITY) values ('DHARAMPETH', 'NAGPUR');
20 insert into BRANCH (BNAME, CITY) values ('MG ROAD', 'BANGALORE');
21 insert into BRANCH (BNAME, CITY) values ('ANDHERI', 'BOMBAY');
22 insert into BRANCH (BNAME, CITY) values ('NAHRU PALACE', 'DELHI');
23 insert into BRANCH (BNAME, CITY) values ('POWAI', 'BOMBAY');
24 select * from BRANCH;
25 select BNAME from BRANCH;
```

9 rows

BNAME
VRCE
AJNI
KAROLBAGH
CHANDNI
DHARAMPETH
MG ROAD
ANDHERI
NAHRU PALACE
POWAI

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Go to Settings to activate Windows.

Database ▾ Queries ▾ Export ▾ Share snippet Run ▶

```
1 create table CUSTOMER (cname varchar(15),city varchar(20)NOT NULL,PRIMARY KEY(cname));
2 insert into CUSTOMER (cname, city) values ('ANIL', 'CALCUTTA');
3 insert into CUSTOMER (cname, city) values ('SUNIL', 'DELHI');
4 insert into CUSTOMER (cname, city) values ('MEHUL', 'BARODA');
5 insert into CUSTOMER (cname, city) values ('HANDAR', 'PATNA');
6 insert into CUSTOMER (cname, city) values ('MADHURI', 'NAGPUR');
7 insert into CUSTOMER (cname, city) values ('PRANOD', 'NAGPUR');
8 insert into CUSTOMER (cname, city) values ('SANDIP', 'SURAT');
9 insert into CUSTOMER (cname, city) values ('SHEVANI', 'BOMBAY');
10 insert into CUSTOMER (cname, city) values ('KRANTI', 'BOMBAY');
11 insert into CUSTOMER (cname, city) values ('NAREN', 'BOMBAY');
12 select cname from CUSTOMER where city='NAGPUR';
```

2 rows

cname
MADHURI
PRANOD

Activate Windows
Go to Settings to activate Windows

Database ▾ Queries ▾ Export ▾ Share snippet Run ▶

```
12 select cname from CUSTOMER where city='NAGPUR';
13
14 create table BRANCH (BNAME varchar(20),CITY varchar(30)NOT NULL);
15 insert into BRANCH (BNAME, CITY) values ('VRCE', 'NAGPUR');
16 insert into BRANCH (BNAME, CITY) values ('AJNI', 'NAGPUR');
17 insert into BRANCH (BNAME, CITY) values ('KAROLBAGH', 'DELHI');
18 insert into BRANCH (BNAME, CITY) values ('CHANDNI', 'DELHI');
19 insert into BRANCH (BNAME, CITY) values ('DHARAMPETH', 'NAGPUR');
20 insert into BRANCH (BNAME, CITY) values ('MS ROAD', 'BANGALORE');
21 insert into BRANCH (BNAME, CITY) values ('ANDHERI', 'BOMBAY');
22 insert into BRANCH (BNAME, CITY) values ('NAHRU PALACE', 'DELHI');
23 insert into BRANCH (BNAME, CITY) values ('POWAI', 'BOMBAY');
24 select * from BRANCH;
25 select BNAME from BRANCH;
26 select BNAME from BRANCH where CITY='BOMBAY';
```

2 rows

BNAME
ANDHERI
POWAI

Database ▾ Queries ▾ Export ▾ Share snippet Run ▶

```
13
14 create table BRANCH (BNAME varchar(20),CITY varchar(30)NOT NULL);
15 insert into BRANCH (BNAME, CITY) values ('VRCE', 'NAGPUR');
16 insert into BRANCH (BNAME, CITY) values ('AJNI', 'NAGPUR');
17 insert into BRANCH (BNAME, CITY) values ('KAROLBAGH', 'DELHI');
18 insert into BRANCH (BNAME, CITY) values ('CHANDNI', 'DELHI');
19 insert into BRANCH (BNAME, CITY) values ('DHARAMPETH', 'NAGPUR');
20 insert into BRANCH (BNAME, CITY) values ('MS ROAD', 'BANGALORE');
21 insert into BRANCH (BNAME, CITY) values ('ANDHERI', 'BOMBAY');
22 insert into BRANCH (BNAME, CITY) values ('NAHRU PALACE', 'DELHI');
23 insert into BRANCH (BNAME, CITY) values ('POWAI', 'BOMBAY');
24 select * from BRANCH;
25 select BNAME from BRANCH;
26 select BNAME from BRANCH where CITY='BOMBAY';
27 select BNAME from BRANCH where CITY='DELHI';
```

3 rows

BNAME
KAROLBAGH
CHANDNI
NAHRU PALACE

extendsclass.com/mysql-online.html

DatabaseQueriesExportShare SnippetRun

```
14 create table BRANCH (BNAME varchar(20),CITY varchar(30)NOT NULL);
15 insert into BRANCH (BNAME, CITY) values ('VRCE', 'NAGPUR');
16 insert into BRANCH (BNAME, CITY) values ('AJNI', 'NAGPUR');
17 insert into BRANCH (BNAME, CITY) values ('KAROLBAGH', 'DELHI');
18 insert into BRANCH (BNAME, CITY) values ('CHANDNI', 'DELHI');
19 insert into BRANCH (BNAME, CITY) values ('DHARAMPETH', 'NAGPUR');
20 insert into BRANCH (BNAME, CITY) values ('MG ROAD', 'BANGALORE');
21 insert into BRANCH (BNAME, CITY) values ('ANDHERI', 'BOHBAY');
22 insert into BRANCH (BNAME, CITY) values ('NAHRU PALACE', 'DELHI');
23 insert into BRANCH (BNAME, CITY) values ('POWAI', 'BOHBAY');
24 select * from BRANCH;
25 select BNAME from BRANCH;
26 select BNAME from BRANCH where CITY='BOHBAY';
27 select BNAME from BRANCH where CITY='DELHI';
28 select CITY from BRANCH where BNAME='KAROLBAGH';
```

1 row

CITY
DELHI

EXPERIMENT NO. 3

AIM To familiarize DDL Commands- ALTER,DROP,TRUNCATE,RENAME

Questions 1.Create a table emp with attributes empno number(4)as primary key, ename char(10),hiredate, salary, commission

insert 5 rows of data

101	Ramesh	17-Jan-1980	5000	
102	Ajay	05-Jul-1985	5000	500
103	Ravi	12-Aug-1981	1500	
104	Nikesh	03-Mar-1983	3000	700
105	Ravi	05-jul-1985	3000	

2.Modifying the structure of tables

a.Add new columns: sal number(7,2)

b.Dropping a column from a table: sal

c.Modifying existing column :ename varchar2(15)

d.Renaming the tables: emp to emp1

e.truncating the tables:emp1

f.Destroying tables:emp

3.Create a table stud with sname varchar2(20) primary key , rollno number(10) not null,dob date not null

4.Create a table student as regno number (6), mark number (3) check constraint (mark >=0 and mark <=100)); In table student add check constraint(length(regno<=4))

5.Create a table cust with(custid number(6) constraint unique, name char(10) 6. Refer the table “stud” in table “ student”

OUTPUT

```
CREATE TABLE emp(EMPNO INT(4) PRIMARY KEY, ENAME CHAR(10), HIREDATE DATE, SALARY INT(5), COMMISSION INT(5));
```

```
INSERT INTO emp(EMPNO,ENAME,HIREDATE,SALARY) VALUES (101,'RAMESH','1980-01-17',5000),(102,'AJAY','1985-07-05',5000), (103,'RAVI','1981-08-12',1500),(104,'Nikesh','1983-03-03',3000), (105,'Ravi','1985-07-05',3000);
```

```
ALTER TABLE emp ADD sal int;
```

```
ALTER TABLE emp DROP COLUMN sal;
```

```
ALTER TABLE emp MODIFY ename VARCHAR(15);
```

```
RENAME table emp to emp1; TRUNCATE TABLE emp1;
```

```
DROP TABLE emp1; CREATE TABLE stud(sname varchar(20) PRIMARY KEY, rollno int NOT NULL, dob date NOT NULL); SELECT * FROM stud;
```

```
Create table student (regno int, mark int(3) constraint b check (mark >=0 and mark <=100));
```

```
SELECT * from STUDENT;
```

```
Alter table student add regno check (length(regno)<=4));
```

```
CREATE TABLE cust(custid number(6) UNIQUE, name char(10));
```

```
OUTPUT: mysql> CREATE TABLE emp(EMPNO NUMBER(4) PRIMARY KEY, -> ENAME CHAR(10), -> HIREDATE DATE, -> SALARY NUMBER(5), -> COMMISSION NUMBER(5)); ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'NUMBER(4) PRIMARY KEY, ENAME CHAR(10),
```

```
mysql> INSERT INTO emp(EMPNO,ENAME,HIREDATE,SALARY) VALUES(101,'RAMESH','17-01-1980',5000);  
mysql> INSERT INTO emp(EMPNO,ENAME,HIREDATE,SALARY) VALUES(101,'RAMESH','1980-01-17',5000);  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO emp(EMPNO,ENAME,HIREDATE,SALARY,COMMISSION) VALUES(102,'AJAY','05-07-1985',5000,500);
```

```
mysql> INSERT INTO emp(EMPNO,ENAME,HIREDATE,SALARY,COMMISSION) VALUES(102,'AJAY','1985-07-05',5000,500);
```

```
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO emp(EMPNO,ENAME,HIREDATE,SALARY) VALUES(103,'RAVI','1981-08-12',1500);  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO emp(EMPNO,HIREDATE,SALARY,COMMISSION) VALUES(104,'Nikesh','1983-03-03',3000,700);
```

```
mysql> INSERT INTO emp(EMPNO,ENAME,HIREDATE,SALARY,COMMISSION) VALUES(104,'Nikesh','1983-03-03',3000,700);
```

```
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO emp(EMPNO,ENAME,HIREDATE,SALARY) VALUES(105,'Ravi','1985-07-05',3000);  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> ALTER TABLE emp ADD sal number(7,2);
```

```
mysql> ALTER TABLE emp ADD sal int;
```

```
Query OK, 0 rows affected (0.03 sec)
```

Records: 0 Duplicates: 0 Warnings: 0

```
mysql> select * from emp -> select * from emp;
```

MySQL server version for the right syntax to use near 'select * from emp' at line 2

```
mysql> select * from emp; EMPNO ENAME HIREDATE SALARY COMMISSION 101 RAMESH 198
```

EMPNO	ENAME	HIREDATE	SALARY	COMMISSION
101	RAMESH	1980-01-17	5000	NULL
102	AJAY	1985-07-05	5000	500
103	RAVI	1981-08-12	1500	NULL
104	Nikesh	1983-03-03	3000	700
105	Ravi	1985-07-05	3000	NULL

5 rows in set (0.00 sec)

```
mysql> ALTER TABLE emp DROP COLUMN sal;
```

Query OK, 0 rows affected (0.06 sec) Records: 0 Duplicates: 0 Warnings: 0

```
mysql> select * from emp;
```

EMPNO	ENAME	HIREDATE	SALARY	COMMISSION
101	RAMESH	1980-01-17	5000	NULL
102	AJAY	1985-07-05	5000	500
103	RAVI	1981-08-12	1500	NULL
104	Nikesh	1983-03-03	3000	700
105	Ravi	1985-07-05	3000	NULL

5 rows in set (0.00 sec)

```
mysql> ALTER TABLE emp MODIFY ename VARCHAR(15);
```

Query OK, 5 rows affected (0.06 sec)

Records: 5 Duplicates: 0 Warnings: 0

```
mysql> select * from emp;
```

EMPNO	ename	HIREDATE	SALARY	COMMISSION
101	RAMESH	1980-01-17	5000	NULL
102	AJAY	1985-07-05	5000	500
103	RAVI	1981-08-12	1500	NULL
104	Nikesh	1983-03-03	3000	700
105	Ravi	1985-07-05	3000	NULL

5 rows in set (0.00 sec)

```
mysql> RENAME table emp to emp1;
```

Query OK, 0 rows affected (0.02 sec)

```
mysql> select * from emp1;
```

EMPNO	ename	HIREDATE	SALARY	COMMISSION
101	RAMESH	1980-01-17	5000	NULL
102	AJAY	1985-07-05	5000	500

103	RAVI	1981-08-12	1500	NULL
104	Nikesh	1983-03-03	3000	700
105	Ravi	1985-07-05	3000	NULL

5 rows in set (0.00 sec)

```
mysql> TRUNCATE TABLE emp1;
```

Query OK, 0 rows affected (0.03 sec)

```
mysql> select * from emp1;
```

Empty set (0.00 sec)

```
mysql> desc emp1;
```

Field	Type	Null	Key	Default	Extra
EMPNO	int	NO	PRI	NULL	
ename	varchar(15)	YES		NULL	
HIREDATE	date	YES		NULL	
SALARY	int	YES		NULL	
COMMISSION	int	YES		NULL	

5 rows in set (0.01 sec)

```
mysql> DROP TABLE emp1;
```

Query OK, 0 rows affected (0.03 sec)

```
mysql> mysql> CREATE TABLE stud(sname varchar(20) PRIMARY KEY, -> rollno NOT NULL, -> dob date NOT NULL)
```

```
mysql> CREATE TABLE stud(sname varchar(20) PRIMARY KEY,rollno int NOT NULL, dob date NOT NULL);  
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> Create table student (regno int,mark int(3) constraint b check (mark >=0 and mark<=100));
```

Query OK, 0 rows affected, 1 warning (0.03 sec)

```
mysql> select * from student;
```

Empty set (0.02 sec)

```
mysql> desc student;
```

Field	Type	Null	Key	Default	Extra
regno	int	YES		NULL	
mark	int	YES		NULL	

2 rows in set (0.01 sec)

```
mysql> Alter table student add constraint b2 check (length(regno)<=4);
```

```
mysql> select * from student;
```

Empty set (0.00 sec)

```
mysql> desc student;
```

Field	Type	Null	Key	Default	Extra
regno	int	YES		NULL	
mark	int	YES		NULL	

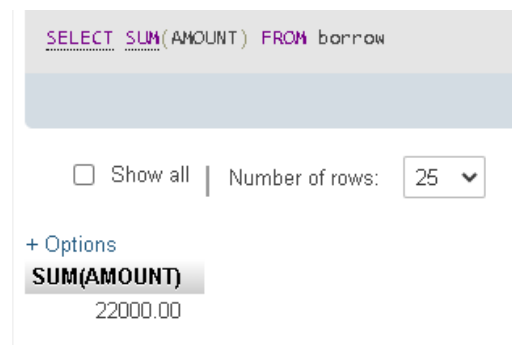
EXPERIMENT NO. 4

AIM To familiarize with aggregate functions Questions

- 1.List total loan
- 2.List total deposit
- 3.List total loan taken from KAROLBAGH branch
- 4.List total deposit of customers having account date later than 1-Jan-96
- 5.List total deposit of customers living in city NAGPUR
- 6.List maximum deposit of customer living in Bombay
- 7.List total deposit of customer having branch in BOMBAY
- 8.Count total number of branch cities
- 9.Count total number of customers cities
- 10.Give branch names and branch wise deposit
- 11.Give city wise name and branch wise deposit
- 12.Give the branch wise loan of customer living in NAGPUR
- 13.Count total number of customers
- 14.Count total number of depositors branch wise
- 15.Count total number of depositors branch wise
- 16.Give maximum loan from branch VRCE
- 17.Give the number of customers who are depositors as well as borrowers

1.List total loan

```
SELECT SUM(AMOUNT) FROM borrow;
```



The screenshot shows a SQL query execution interface. At the top, the query `SELECT SUM(AMOUNT) FROM borrow` is entered in a text box. Below the text box, there is a checkbox labeled "Show all" and a "Number of rows:" label followed by a dropdown menu set to "25". Below these controls, there is a "+ Options" link. The result of the query is displayed in a table with one row: `SUM(AMOUNT)` with the value `22000.00`.

2.List total deposit

SELECT SUM(AMOUNT) FROM deposit;

```
SELECT SUM(AMOUNT) FROM deposit
```

☐ Show all | Number of rows: 25 ▼

+ Options

SUM(AMOUNT)
24200.00

3.List total loan taken from KAROLBAGH branch

SELECT MAX(AMOUNT) FROM borrow WHERE BNAME ='KAROLBAGH';

```
SELECT MAX(AMOUNT) FROM borrow WHERE BNAME ='KAROLBAGH'
```

☐ Show all | Number of rows: 25 ▼ | Filter rows: S

+ Options

MAX(AMOUNT)
NULL

4.List total deposit of customers having account date later than 1-Jan-96

SELECT SUM(AMOUNT) from deposit where adate>'1995-03-01';

```
SELECT SUM(AMOUNT) from deposit where adate>'1995-03-01'
```

☐ Show all | Number of rows: 25 ▼ | Filter rows: Search thi

+ Options

SUM(AMOUNT)
14700.00

5.List total deposit of customers living in city NAGPUR

SELECT SUM(D1.AMOUNT) FROM desposit D1 , customer C1 WHERE C1.CITY = 'NAGPUR' AND C1.CNAME = D1.CNAME;

+ Options

SUM(D1.AMOUNT)

4200.00

6. List maximum deposit of customer living in Bombay

```
SELECT MAX(D1.AMOUNT) FROM deposit D1 , customer C1 WHERE C1.CITY = 'Bombay'
AND C1.CNAME = D1.CNAME;
```

+ Options

MAX(D1.AMOUNT)

5000.00

7. List total deposit of customer having branch in BOMBAY

```
SELECT SUM (AMOUNT) from deposit,BRANCH where city='BOMBAY';
```

+ Options

SUM(AMOUNT)

48400.00

8. Count total number of branch cities

```
SELECT COUNT(DISTINCT (CITY)) FROM branch ;
```

+ Options

COUNT(DISTINCT (CITY))

4

9. Count total number of customers cities

```
SELECT COUNT (CITY) FROM customer;
```

```
SELECT COUNT(CITY) FROM customer
```

+ Options

COUNT(CITY)

10

10. Give branch names and branch wise deposit

```
SELECT BNAME , SUM(AMOUNT) FROM desposit GROUP BY BNAME;
```

+ Options			
		BNAME	SUM(AMOUNT)
<input type="checkbox"/>	Edit	ANDHERI	2000.00
<input type="checkbox"/>	Edit	ANJNI	500.00
<input type="checkbox"/>	Edit	CHANDNI	1200.00
<input type="checkbox"/>	Edit	KAROLBAGH	3500.00
<input type="checkbox"/>	Edit	MG ROAD	3000.00
<input type="checkbox"/>	Edit	NEHRU PALACE	5000.00
<input type="checkbox"/>	Edit	POWAI	7000.00
<input type="checkbox"/>	Edit	VIRAR	1000.00
<input type="checkbox"/>	Edit	VRCE	1000.00

11. Give city wise name and branch wise deposit

SELECT C1.CITY , SUM(D1.AMOUNT) FROM customer C1 , deposit D1 WHERE D1.CNAME = C1.CNAME GROUP BY C1.CITY;

+ Options			
		CITY	SUM(D1.AMOUNT)
<input type="checkbox"/>	Edit	BARODA	3500.00
<input type="checkbox"/>	Edit	BOMBAY	6000.00
<input type="checkbox"/>	Edit	CALCUTTA	1000.00
<input type="checkbox"/>	Edit	DELHI	500.00
<input type="checkbox"/>	Edit	NAGPUR	4200.00
<input type="checkbox"/>	Edit	SURAT	2000.00

12. Give the branch wise loan of customer living in NAGPUR

SELECT BNAME , SUM(AMOUNT) FROM borrow, customer WHERE city ='NAGPUR' GROUP BY BNAME;

+ Options	
BNAME	SUM(AMOUNT)
AJNI	10000.00
ANDHERI	4000.00
DHARAMPETH	6000.00
NEHRU PALACE	6000.00
VIRAR	16000.00
VRCE	2000.00

13. Count total number of customers

SELECT count(cname) from CUSTOMER;

+ Options	
count(cname)	10

14.Count total number of depositors branch wise

```
SELECT BNAME, count (*)from DEPOSIT, CUSTOMER where deposit.CNAME =  
CUSTOMER.CNAME group by BNAME;
```

+ Options

BName	count(*)
ANDHERI	1
ANJNI	1
CHANDNI	1
KAROLBAGH	1
MG ROAD	1
NEHRU PALACE	1
VIRAR	1
VRCE	1

15.Count total number of depositors branch wise

```
SELECT BNAME, count (*)from DEPOSIT, CUSTOMER where deposit.CNAME =  
CUSTOMER.CNAME group by BNAME;
```

+ Options

BName	count(*)
ANDHERI	1
ANJNI	1
CHANDNI	1
KAROLBAGH	1
MG ROAD	1
NEHRU PALACE	1
VIRAR	1
VRCE	1

16.Give maximum loan from branch VRCE

```
SELECT MAX(AMOUNT) FROM borrow WHERE BNAME ='VRCE';
```

1

+ Options

MAX(AMOUNT)
1000.00

17.Give the number of customers who are depositors as well as borrowers

```
SELECT COUNT(DISTINCT (CNAME)) FROM customer WHERE CNAME IN ((SELECT CNAME FROM deposit)
INTERSECT (SELECT CNAME FROM borrow));
```

[+ Options](#)

COUNT(DISTINCT (CNAME))

6

EXPERIMENT NO. 5

AIM To familiarize with set operations Questions

1. List all the customers who are depositors but not borrowers.
2. List all the customers who are both depositors and borrowers
3. List all the depositors having deposit in all the branches where Sunil is having Account
4. List all the customers living in city NAGPUR and having branch city BOMBAY or DELHI
5. List all the depositors living in city NAGPUR
6. List all the depositors living in the city NAGPUR and having branch in city BOMBAY
7. List the branch cities of Anil and Sunil
8. List the customers having deposit greater than 1000 and loan less than 10000.
9. List the cities of depositors having branch VRCE.
10. List the depositors having amount less than 1000 and living in the same city as Anil
11. List all the cities where branches of Anil and Sunil are locate
12. List the amount for the depositors living in the city where Anil is living

1. List all the customers who are both depositors and borrower

```
SELECT CNAME FROM DEPOSIT UNION (SELECT CNAME FROM BORROW);
```



2. List all the depositors having deposit in all the branches where Sunil is having Account

```
SELECT D1.CNAME FROM DEPOSIT D1 WHERE D1.BNAME IN (SELECT  
D2.BNAME FROM DEPOSIT D2 WHERE D2.CNAME = 'SUNIL' );
```

	CNAME
dit Copy Delete	SUNIL

4.List all the customers living in city NAGPUR and having branch city BOMBAY or DELHI

```
SELECT C1.CNAME FROM CUSTOMER C1,DEPOSIT D1, BRANCH B1 WHERE
C1.CITY = 'NAGPUR' AND C1.CNAME = D1.CNAME AND D1.BNAME =
B1.BNAME AND B1.CITY IN ('BOMBAY','DELHI');
```

	CNAME
Delete	MADHURI

5.List all the depositors living in city NAGPUR

```
SELECT Distinct(CUSTOMER.CNAME) from CUSTOMER,DEPOSIT WHERE
City='NAGPUR';
```

+ Options
CNAME
MADHURI
PRAMOD

6. List all the depositors living in the city NAGPUR and having branch in city

BOMBAY

```
SELECT C1.CNAME FROM CUSTOMER C1,DEPOSIT D1, BRANCH B1 WHERE C1.CITY
= 'NAGPUR' AND C1.CNAME = D1.CNAME AND D1.BNAME = B1.BNAME AND
B1.CITY IN ('BOMBAY');
```

CNAME

7. List the branch cities of Anil and Sunil

```
SELECT B1.CITY FROM DEPOSIT D1, BRANCH B1 WHERE D1.BNAME = B1.BNAME AND D1.CNAME IN ('SUNIL', 'ANIL');
```

	CITY
delete	NAGPUR

11. List all the cities where branches of Anil and Sunil are located

```
SELECT B1.CITY FROM BRANCH B1 WHERE B1.BNAME IN (SELECT D1.BNAME FROM DEPOSIT D1 WHERE D1.CNAME IN ('ANIL', 'SUNIL'));
```

	CITY
Delete	NAGPUR

EXPERIMENT NO. 6


AIM To familiarize with join or cartesian product Questions

1. Give name of customers having living city BOMBAY and branch city NAGPUR
2. Give names of customers having the same living city as their branch city
3. Give names of customers who are borrowers as well as depositors and having city NAGPUR.
4. Give names of borrowers having deposit amount greater than 1000 and loan amount greater than 2000.
5. Give names of depositors having the same branch as the branch of Sunil
6. Give names of borrowers having loan amount greater than the loan amount of Pramod
7. Give the name of the customer living in the city where branch of depositor Sunil is located.
8. Give branch city and living city of Pramod
9. Give branch city of Sunil and branch city of Anil
10. Give the living city of Anil and the living city of Sunil

OUTPUT

Give name of customers having living city BOMBAY and branch city NAGPUR

```
SELECT D1.CNAME,D1.BNAME,C1.CNAME,C1.CITY,B1.CITY,B1.BNAME FROM DEPOSIT
D1,CUSTOMER C1,BRANCH B1 WHERE C1.CITY = 'BOMBAY' AND B1.CITY = 'NAGPUR' AND
D1.CNAME = C1.CNAME AND D1.BNAME = B1.BNAME;
```



CNAME	BNAME	CNAME	CITY	CITY	BNAME
-------	-------	-------	------	------	-------

Give names of customers having the same living city as their branch city

```
SELECT distinct(customer.CNAME), BRANCH.CITY FROM BRANCH, customer WHERE BRANCH.city
= customer.city;
```

+ Options

CNAME	CITY
KRANTI	BOMBAY
MADHURI	NAGPUR
NAREN	BOMBAY
PRAMOD	NAGPUR
SHIVANI	BOMBAY
SUNIL	DELHI

Give names of customers who are borrowers as well as depositors and having city NAGPUR.

```
SELECT C1.CNAME FROM CUSTOMER C1,DEPOSIT D1,BORROW B1 WHERE C1.CITY='NAGPUR'
AND C1.CNAME=D1.CNAME AND D1.CNAME = B1.CNAME;
```

	CNAME
ete	MADHURI
ete	PRAMOD

Give names of borrowers having deposit amount greater than 1000 and loan amount greater than 2000.

```
SELECT BR1.CNAME, BR1.AMOUNT, D1.CNAME, D1.AMOUNT FROM BORROW BR1,DEPOSIT D1
WHERE D1.CNAME = BR1.CNAME AND D1.AMOUNT > 1000 AND BR1.AMOUNT > 2000;
```

+ Options

CNAME	AMOUNT	CNAME	AMOUNT
MEHUL	5000.00	MEHUL	3500.00
PRAMOD	8000.00	PRAMOD	3000.00
KRANTI	3000.00	KRANTI	5000.00

Give names of depositors having the same branch as the branch of Sunil

```
SELECT D1.CNAME FROM DEPOSIT D1 WHERE D1.BNAME IN (SELECT D2.BNAME FROM
DEPOSIT D2 WHERE D2.CNAME = 'SUNIL');
```

	CNAME
ete	SUNIL

Give names of borrowers having loan amount greater than the loan amount of Pramod

```
SELECT BR1.CNAME, BR1.AMOUNT FROM BORROW BR1 WHERE BR1.AMOUNT > ALL (SELECT  
BR2.AMOUNT FROM BORROW BR2 WHERE BR2.CNAME = 'PRAMOD');
```



CNAME	AMOUNT
-------	--------

Give the name of the customer living in the city where branch of depositor Sunil is located.

```
SELECT C.CNAME FROM CUSTOMER C WHERE C.CITY IN (SELECT B.CITY FROM BRANCH B WHERE  
B.BNAME IN (SELECT D.BNAME FROM DEPOSIT D WHERE D.CNAME='SUNIL'));
```



CNAME

Give branch city and living city of Pramod

```
SELECT B1.CITY , C1.CITY FROM BRANCH B1, CUSTOMER C1, DEPOSIT D1 WHERE C1.CNAME  
= 'PRAMOD' AND C1.CNAME = D1.CNAME AND D1.BNAME = B1.BNAME;
```



+ Options		
CITY	CITY	
BANGALORE	NAGPUR	

Give branch city of Sunil and branch city of Anil



```
SELECT B1.CITY FROM DEPOSIT D1, BRANCH B1 WHERE D1.BNAME = B1.BNAME AND  
D1.CNAME IN ('SUNIL', 'ANIL');
```








CITY
NAGPUR

Give the living city of Anil and the living city of Sunil

```
SELECT C1.CNAME, C1.CITY FROM CUSTOMER C1 WHERE C1.CNAME = 'ANIL' OR C1.CNAME =  
'SUNIL';
```

		CNAME	CITY
Edit		ANIL	CALCUTTA
Edit		SUNIL	DELHI

 Check all  Uncheck all  Filter  Add  Delete

EXPERIMENT NO. 7

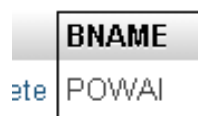
AIM To familiarize with Group by and Having clause Questions

- 1.List the branches having sum of deposit more than 5000.
- 2.List the branches having sum of deposit more than 500 and located in city BOMBAY
- 3.List the names of customers having deposited in the branches where the average deposit is more than 5000.
- 4.List the names of customers having maximum deposit
- 5.List the name of branch having highest number of depositors?
- 6.Count the number of depositors living in NAGPUR.
- 7.Give names of customers in VRCE branch having more deposite than any other customer in same branch
- 8.Give the names of branch where number of depositors is more than 5
- 9.Give the names of cities in which the maximum number of branches are located
- 10.Count the number of customers living in the city where branch is located

OUTPUT

- 1.List the branches having sum of deposit more than 5000.

```
SELECT D.BNAME FROM DEPOSIT D, BRANCH B WHERE D.BNAME=B.BNAME GROUP BY D.BNAME  
HAVING SUM(D.AMOUNT)>5000;
```



BNAME	AMOUNT
POWAI	

- 2.List the branches having sum of deposit more than 500 and located in city BOMBAY

```
SELECT D.BNAME FROM DEPOSIT D, BRANCH B WHERE D.BNAME=B.BNAME AND B.CITY='BOMBAY'  
GROUP BY D.BNAME HAVING SUM(D.AMOUNT)>500;
```

BNAME
ANDHERI
POWAI

3.List the names of customers having deposited in the branches where the average deposit is more than 5000.

select CNAME from deposit where AMOUNT=(select AVG(Amount) from DEPOSIT GROUP BY BNAME having AVG(Amount)>5000);

CNAME
MINU

4.List the names of customers having maximum deposit

SELECT CNAME,MAX(AMOUNT)"AMOUNT" FROM deposit;

CNAME	AMOUNT
ANIL	7000.00

5.List the name of branch having highest number of depositors?

SELECT D1.BNAME FROM DEPOSIT D1 GROUP BY D1.BNAME HAVING COUNT(D1.CNAME) >= ALL (SELECT COUNT (D2.CNAME) FROM DEPOSIT D2 GROUP BY D2.BNAME);

6.Count the number of depositors living in NAGPUR.

select count(deposit.cname)from deposit,CUSTOMER where CUSTOMER.CITY='nagpur';

+ Options

count(deposit.cname)

18

7. Give names of customers in VRCE branch having more deposits than any other customer in same branch

Select CNAME from deposit where BNAME='VRCE' and amount=(select max(AMOUNT) from deposit where BNAME='VRCE');

CNAME

ANIL

8. Give the names of branches where number of depositors is more than 5

SELECT BNAME from deposit GROUP BY BNAME HAVING COUNT(BNAME)>5;

BNAME

9. Give the names of cities in which the maximum number of branches are located

select C.CNAME ,count(B.BNAME) from CUSTOMER C inner join Branch B on C.CNAME=B.BNAME group by C.Cname order by count(B.BName) DESC;

CNAME count(B.BNAME)

10. Count the number of customers living in the city where branch is located

select count(b1.bname) From deposit d1 , borrow b1 , customer c1 Where c1.cname=d1.cname and d1.cname=b1.cname and c1.city in (select city from customer);

+ Options

count(b1.bname)

6

EXPERIMENT NO. 8

AIM To have familiarize with trigger functions Question

Create a Trigger for employe table it will update another table salary while updating values OBJECTIVE
To develop and execute a Trigger for After update/Delete/Insert operations on a table

PROCEDURE

step 1: start

step 2: initialize the trigger.

step 3: On update the trigger has to be executed.

step 4: execute the trigger procedure after updation

step 5: carryout the operation on the table to check for trigger execution.

step 6: stop PROGRAM

```
Sql> CREATE TABLE `employe` ( `emp_id` int(11) NOT NULL, `emp_name` varchar(45) DEFAULT NULL,
`dob` date DEFAULT NULL, `address` varchar(45) DEFAULT NULL, `designation` varchar(45) DEFAULT
NULL, `mobile_no` int(11) DEFAULT NULL, `dept_no` int(11) DEFAULT NULL, `salary` int(11) DEFAULT
NULL, PRIMARY KEY (`emp_id`) );
```

```
Sql> CREATE TABLE `salary` ( `employee_id` int(11) NOT NULL, `old_sal` int(11) DEFAULT NULL,
`new_sal` int(11) DEFAULT NULL, `rev_date` date DEFAULT NULL, PRIMARY KEY (`employee_id`) );
```

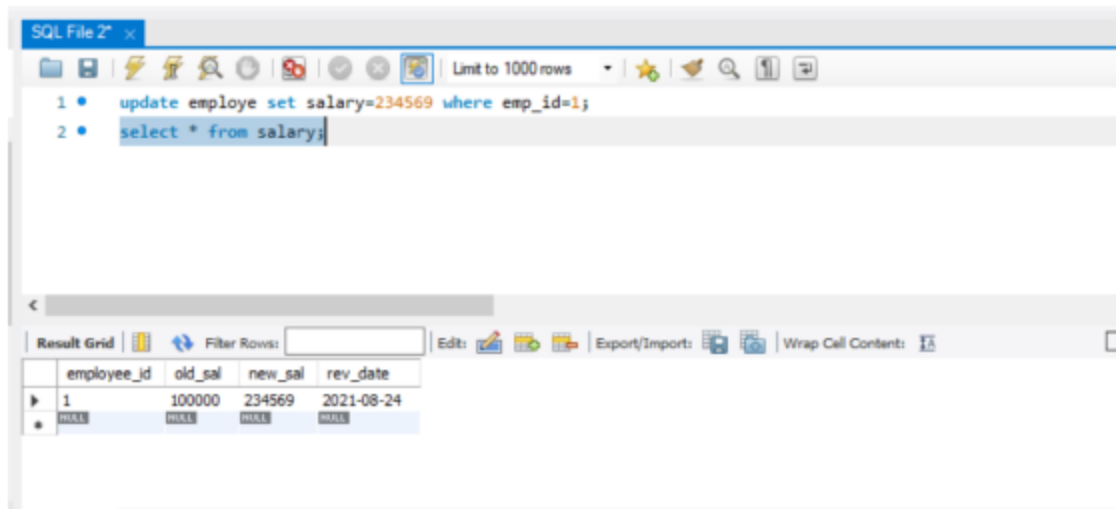
```
Sql> CREATE DEFINER=`root`@`localhost` TRIGGER `employee_db`.`employe_AFTER_UPDATE` AFTER
UPDATE ON `employe` FOR EACH ROW BEGIN if(new.salary != old.salary)
```

```
then
```

```
INSERT INTO salary (employee_id,old_sal,new_sal,rev_date) values
(new.emp_id,old.salary,new.salary,sysdate()); END if; END
```

```
Sql> update employe set salary=234569 where emp_id=1; select * from salary;
```

OUTPUT



AIM To have familiarize with trigger functions

Question

Create a Trigger for employee table it will update another table personal_updates while updating values

OBJECTIVE To develop and execute a Trigger for Before and After update/Delete/Insert operations on a table

PROCEDURE

step 1: start

step 2: initialize the trigger.

Step3: On update the trigger has to be executed.

step 4: execute the trigger procedure after updation

step 5: carryout the operation on the table to check for trigger execution.

step 6: stop

PROGRAM

```
sql> CREATE TABLE `employee` ( `emp_id` int(11) NOT NULL,
`emp_name` varchar(45) DEFAULT NULL, `dob` date DEFAULT NULL,
`address` varchar(45) DEFAULT NULL, `designation` varchar(45) DEFAULT NULL,
`mobile_no` int(11) DEFAULT NULL, `dept_no` int(11) DEFAULT NULL,
`salary` int(11) DEFAULT NULL, PRIMARY KEY (`emp_id`));
```

```
Sql> CREATE TABLE `personal_updatations` ( `emp_id` int(11) NOT NULL, `old_phoneno` int(11) DEFAULT NULL,
```

```
`new_phoneno` int(11) DEFAULT NULL, `rev_date` date DEFAULT NULL, PRIMARY KEY (`emp_id`));
```

```
Sql> CREATE DEFINER=`root`@`localhost` TRIGGER `employee_AFTER_UPDATE_1` AFTER UPDATE ON `employee`
```

```
FOR EACH ROW BEGIN if(new.mobile_no != old.mobile_no)
```

```
then
```

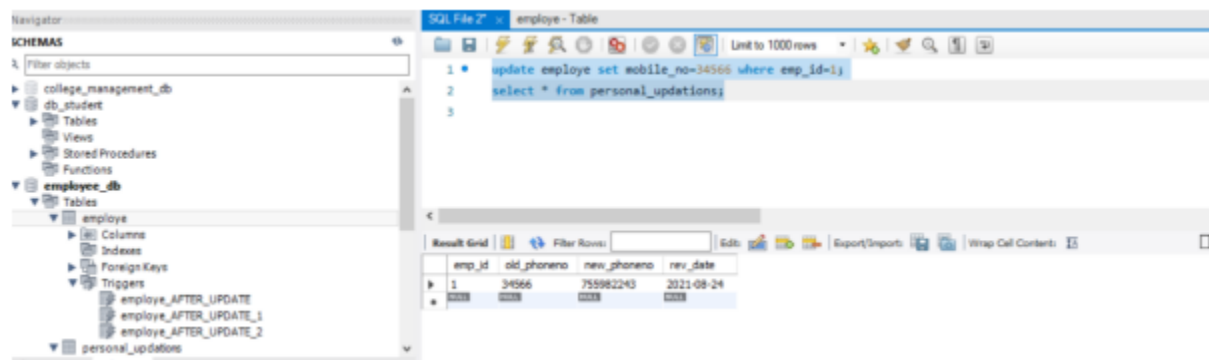
```
INSERT INTO personal_updatations (emp_id,old_phoneno,new_phoneno,rev_date) values  
(new.emp_id,new.mobile_no,old.mobile_no,sysdate());
```

```
END if;
```

```
END
```

```
sql> update employee set mobile_no=34566 where emp_id=4 ; select * from personal_updatations;
```

OUTPUT



AIM

To have familiarize with trigger functions

Question Create a Trigger for employee table it will update another table promotions while updating values

OBJECTIVE To develop and execute a Trigger for Before and After update/Delete/Insert operations on a table

PROCEDURE

step 1: start

step 2: initialize the trigger.

step 3: On update the trigger has to be executed.

step 4: execute the trigger procedure after updation

step 5: carryout the operation on the table to check for trigger execution.

step 6: stop

PROGRAM

```
sql> CREATE TABLE `employee` ( `emp_id` int(11) NOT NULL,  
  `emp_name` varchar(45) DEFAULT NULL, `dob` date DEFAULT NULL,  
  `address` varchar(45) DEFAULT NULL,  
  `designation` varchar(45) DEFAULT NULL,  
  `mobile_no` int(11) DEFAULT NULL,  
  `dept_no` int(11) DEFAULT NULL,  
  `salary` int(11) DEFAULT NULL, PRIMARY KEY (`emp_id`) );  
  
Sql> CREATE TABLE `promotions` ( `emp_id` int(11) NOT NULL,  
  `old_designation` varchar(11) DEFAULT NULL,  
  `new_designation` varchar(11) DEFAULT NULL,  
  `rev_date` date DEFAULT NULL,  
  PRIMARY KEY (`emp_id`) );  
  
sql> CREATE DEFINER=`root`@`localhost` TRIGGER `employee_AFTER_UPDATE_2`  
AFTER UPDATE ON `employee`  
FOR EACH ROW BEGIN if(new.designation != old.designation)  
then  
  
INSERT INTO promotions (emp_id,old_designation,new_designation,rev_date) values  
(new.emp_id,new.designation,old.designation,sysdate());  
  
END if;  
  
END  
  
sql> update employee set designation='clk' where emp_id=1; select * from promotions;
```

OUTPUT

Navigator

SQL File 2* employee - Table employee - Table employee employee - Table promotions employee employee

Limit to 1000 rows

1 update employee set designation='cl' where emp_id=1;
2 select * from promotions;
3

Result Grid

emp_id	old_designation	new_designation	rev_date
1	manager	cl	2021-08-24

EXPERIMENT NO. 9

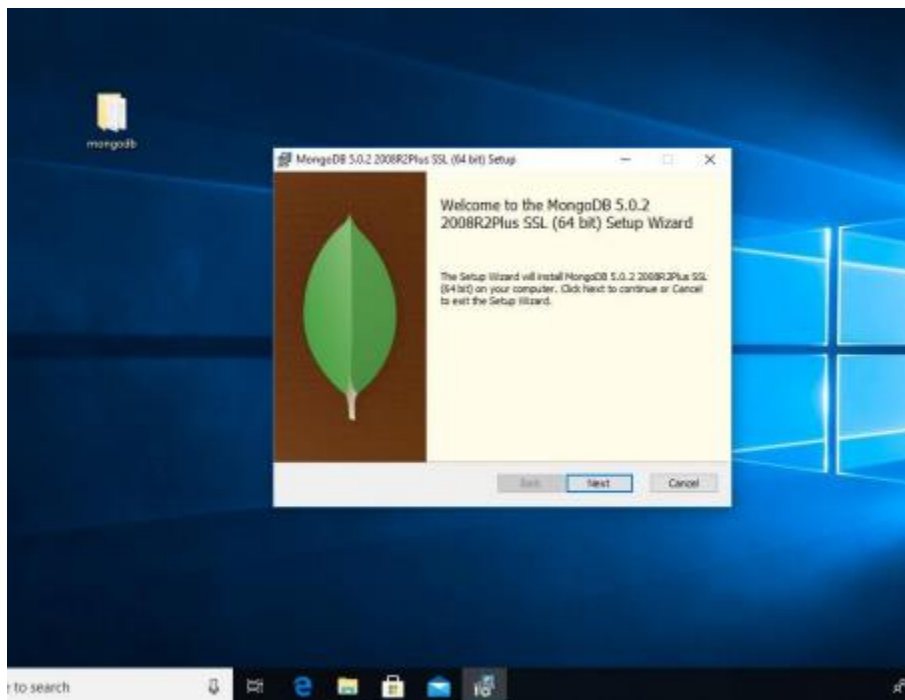
How to Download & Install MongoDB on Windows

The installers for MongoDB are available in both the 32-bit and 64-bit format. The 32-bit installers are good for development and test environments. But for production environments you should use the 64-bit installers. Otherwise, you can be limited to the amount of data that can be stored within MongoDB.

Download & Install MongoDB on Windows

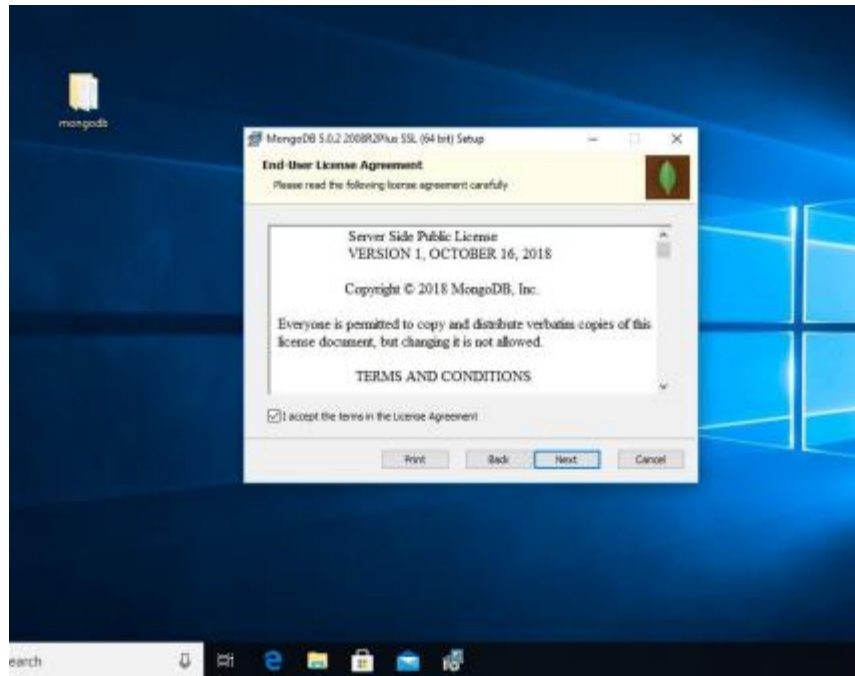
The following steps can be used to install MongoDB on Windows 10:

Step 1: After downloading MongoDB, open the msi file and click next.



Step 2:

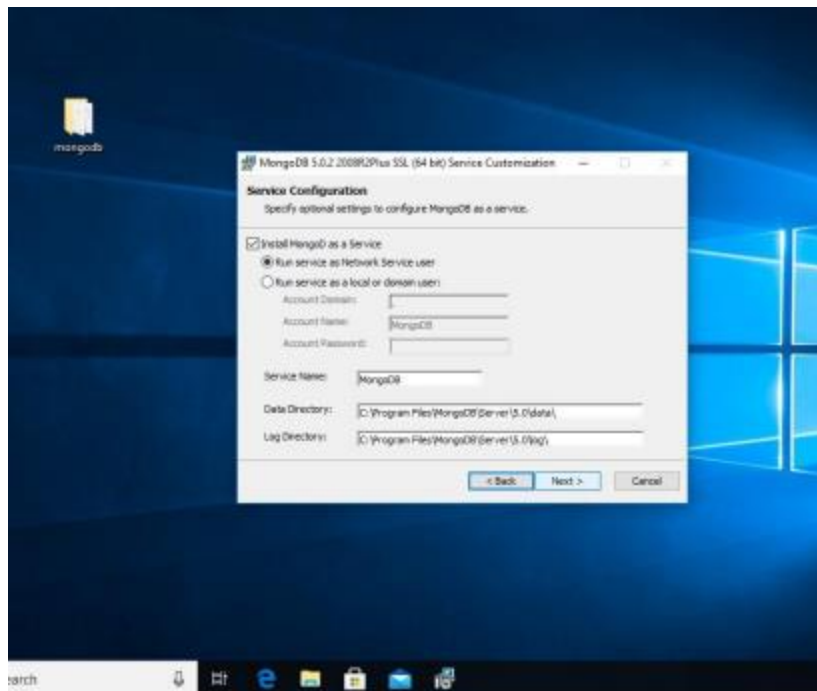
- a. Accept the End-User License Agreement
- b. Click next



Step 3: Click on the "complete" button to install all of the components.

The custom option can be used to install selective components or if you want to change the location of the installation.

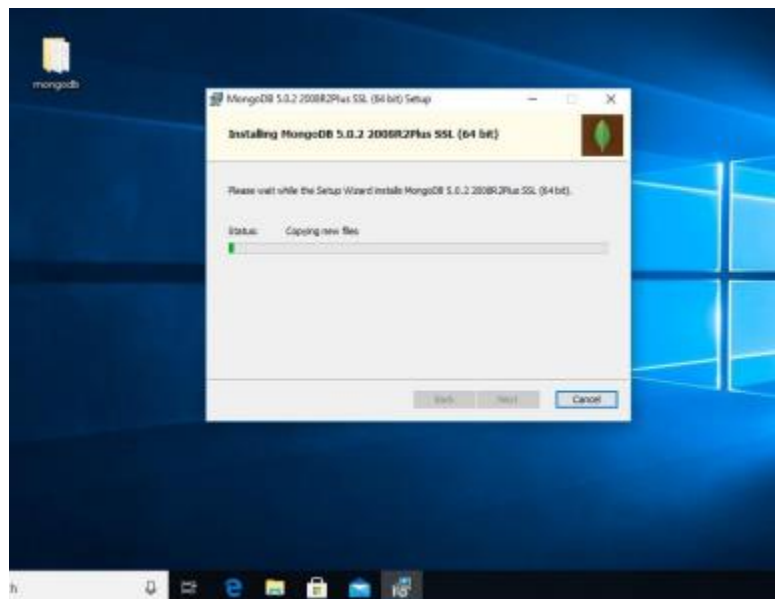
1. Select "Run service as Network Service user". Make a note of the data directory, we'll need this later.
2. Click Next

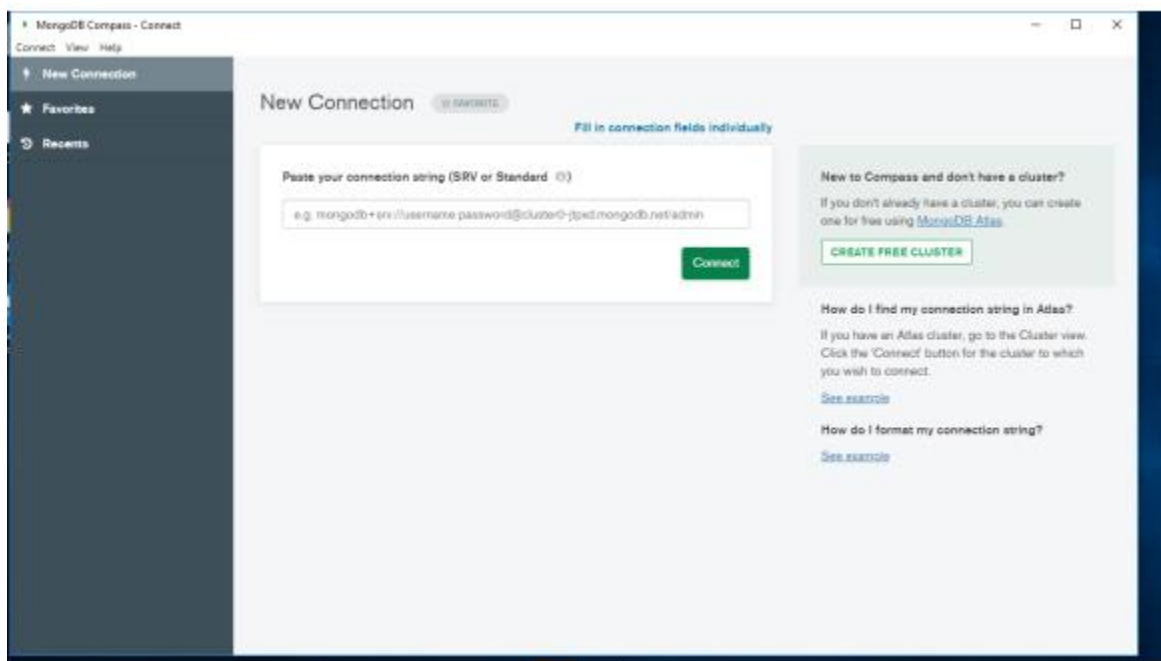
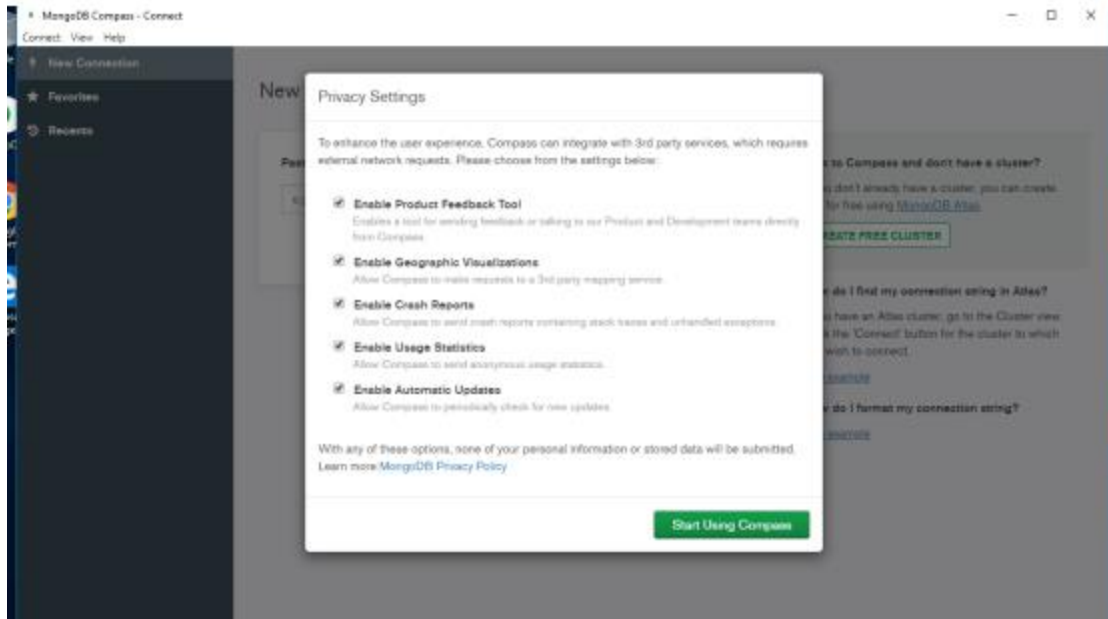


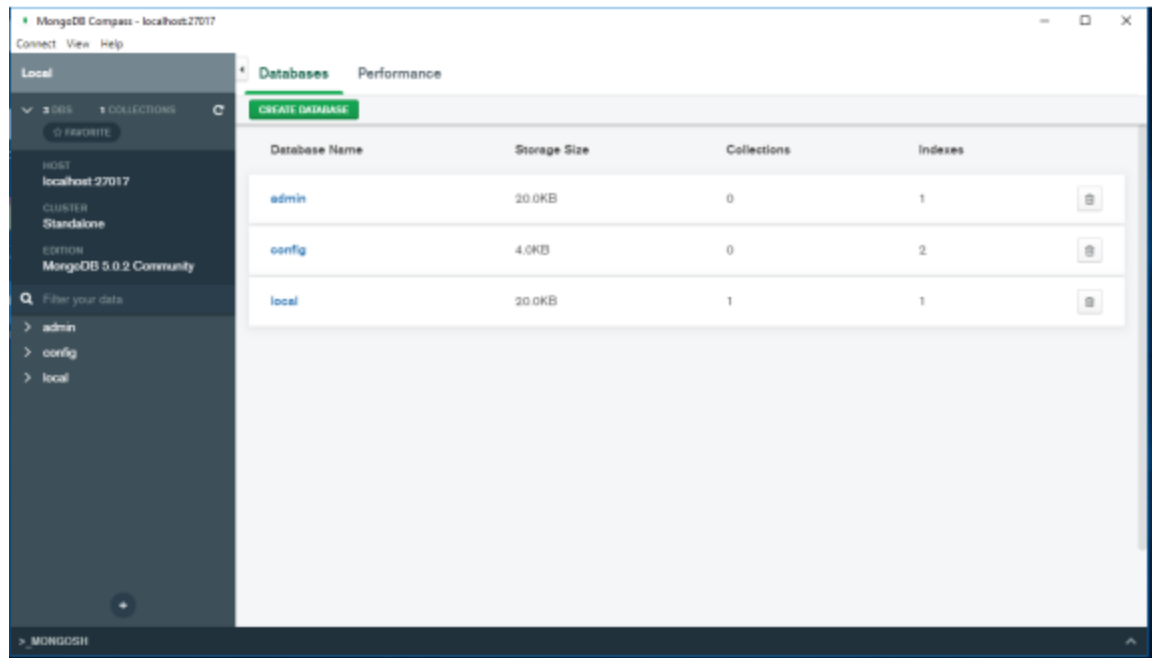
Step 4: Click on the Install button to start the installation.

Installation begins. Click next once completed.

Click on the Finish button to complete the installation.










EXPERIMENT NO. 10

Install PHP MongoDB Driver

Download correct mongodb driver for PHP, based on your PHP version, Architecture and whether Thread Safety is enabled. You can get that information from the phpinfo page. Do the following steps to install and configure MongoDB driver on Windows XAMPP Server.

1. Download the latest stable version of the PHP MongoDB driver from following URL <https://pecl.php.net/package/mongodb>.

Available Releases			
Version	State	Release Date	Downloads
1.3.2	stable	2017-10-30	mongodb-1.3.2.tgz (904.0kB)  DLL
1.3.1	stable	2017-10-16	mongodb-1.3.1.tgz (904.0kB)  DLL
1.3.0	stable	2017-09-19	mongodb-1.3.0.tgz (906.1kB)  DLL

2. Extract the archive File.
3. Copy the php_mongodb.dll file from the extracted folder to the PHP extension directory. this is usually the "C:\xampp\php\ext" folder in XAMPP Server.
4. Open the php.ini file inside your PHP installation (C:\xampp\php) and add the following line:
extension=php_mongodb.dll
5. Save the file and close it. Restart the Apache web server.

Test MongoDB Connection From PHP Script

Let's write a very simple PHP program that creates a connection to the MongoDB server and dump the connection status.

Add following PHP code to your php script and access from the Web browser.

The above PHP example will output something similar to:

```
<?php
```

```
$connection = new MongoDB\Driver\Manager("mongodb://localhost:27017");
```

```
var_dump($connection);
```

```
?>
```

Result

```
object(MongoDB\Driver\Manager)#1 (2) { ["uri"]=> string(25)
"mongodb://localhost:27017" ["cluster"]=> array(1) { [0]=> array(11) { ["host"]=>
string(9) "localhost" ["port"]=> int(27017) ["type"]=> int(0) ["is_primary"]=>
bool(false) ["is_secondary"]=> bool(false) ["is_arbiter"]=> bool(false)
["is_hidden"]=> bool(false) ["is_passive"]=> bool(false) ["tags"]=> array(0) { }
["last_is_master"]=> array(0) { } ["round_trip_time"]=> int(-1) } } }
```

EXPERIMENT NO. 11

Program to connect to mongodb and insert data

Connection

```
<?php

require 'vendor/autoload.php';

$m = new MongoClient("mongodb://localhost:27017");

    // connect to mongodb

    echo "Connection to database successfully";

    // select a database

    $db = $m->test12;

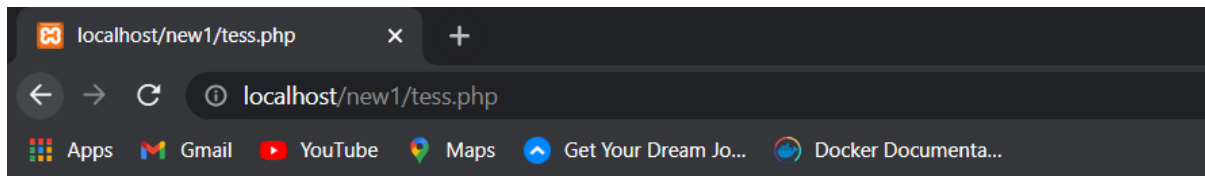
    echo "Database admin selected";

    $collection = $db->createCollection("sample");

    echo "Collection created successfully";

?>
```

Result



Connection to database successfullyDatabase admin selectedCollection created successfully

Insertion

```
<?php

    // connect to mongodb

    require 'vendor/autoload.php';
```

```
$m = new MongoDB\Client("mongodb://localhost:27017");
```

```
echo "Connection to database successfully";
```

```
echo " ";
```

```
$db = $m->test12;
```

```
echo "Database mydb selected";
```

```
$collection = $db->newtest;
```

```
echo "Collection selected successfully";
```

```
echo " ";
```

```
$document1 = array(
```

```
    "title" => "class",
```

```
    "description" => "students",
```

```
    "likes" => 1000,
```

```
    "url" => "http://www.apple.com/mongodb/",
```

```
    "by" => "apple"
```

```
);
```

```
$document2 = array(
```

```
    "title" => "cs",
```

```
    "description" => "stu",
```

```
    "likes" => 9000,
```

```
    "url" => "http://www.apple.com/mongodb/",
```

```
    "by" => "apple"
```

```
);
```

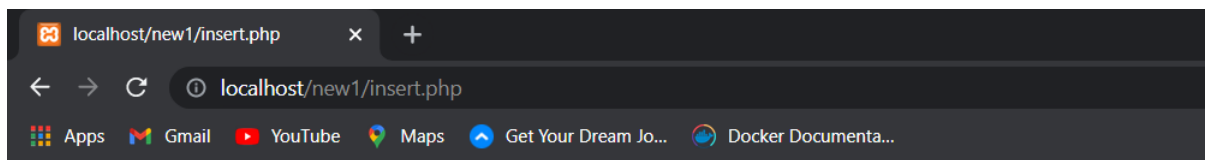
```
$collection->insertMany([$document1,$document2]);
```

```
echo "Document inserted successfully";
```

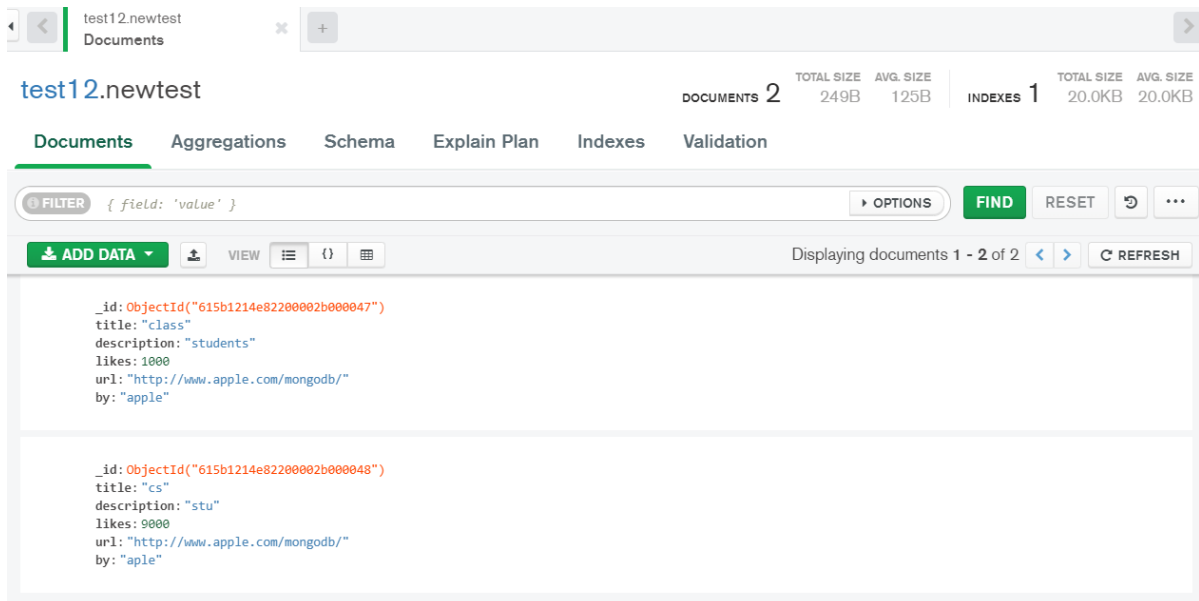
?>

Result

In Browser



In MongoCompass



EXPERIMENT NO. 12

Perform CRUD operations in Mongodb in a registration form

Registration form

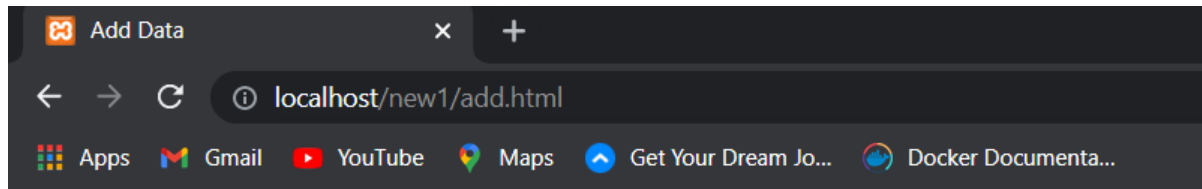
```
<html>
<head>
  <title>Add Data</title>
</head>
<body>
  <a href="index2.php">Home</a>
  <br/><br/>
  <form action="add.php" method="post" name="form1">
    <table width="25%" border="0">
      <tr>
        <td>Name</td>
        <td><input type="text" name="name"></td>
      </tr>
      <tr>
        <td>Age</td>
        <td><input type="text" name="age"></td>
      </tr>
      <tr>
        <td>Email</td>
        <td><input type="text" name="email"></td>
      </tr>
      <tr>
        <td></td>
        <td><input type="submit" name="Submit" value="Add"></td>
      </tr>
    </table>
  </form>
```

</body>

</html>

Result

In Browser



[Home](#)

Name	<input type="text"/>
Age	<input type="text"/>
Email	<input type="text"/>
	<input type="button" value="Add"/>

C-Create Connection

```
//connectioncrude.php
```

```
<?php
```

```
require 'vendor/autoload.php';
```

```
$connection = (new MongoDB\Client);
```

```
echo "$connection";
```

```
$db=$connection->user2;
```

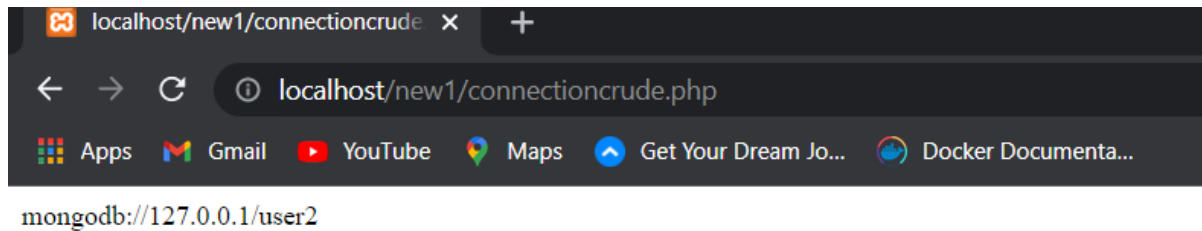
```
echo "$db";
```

```
$collection=$db->details;
```

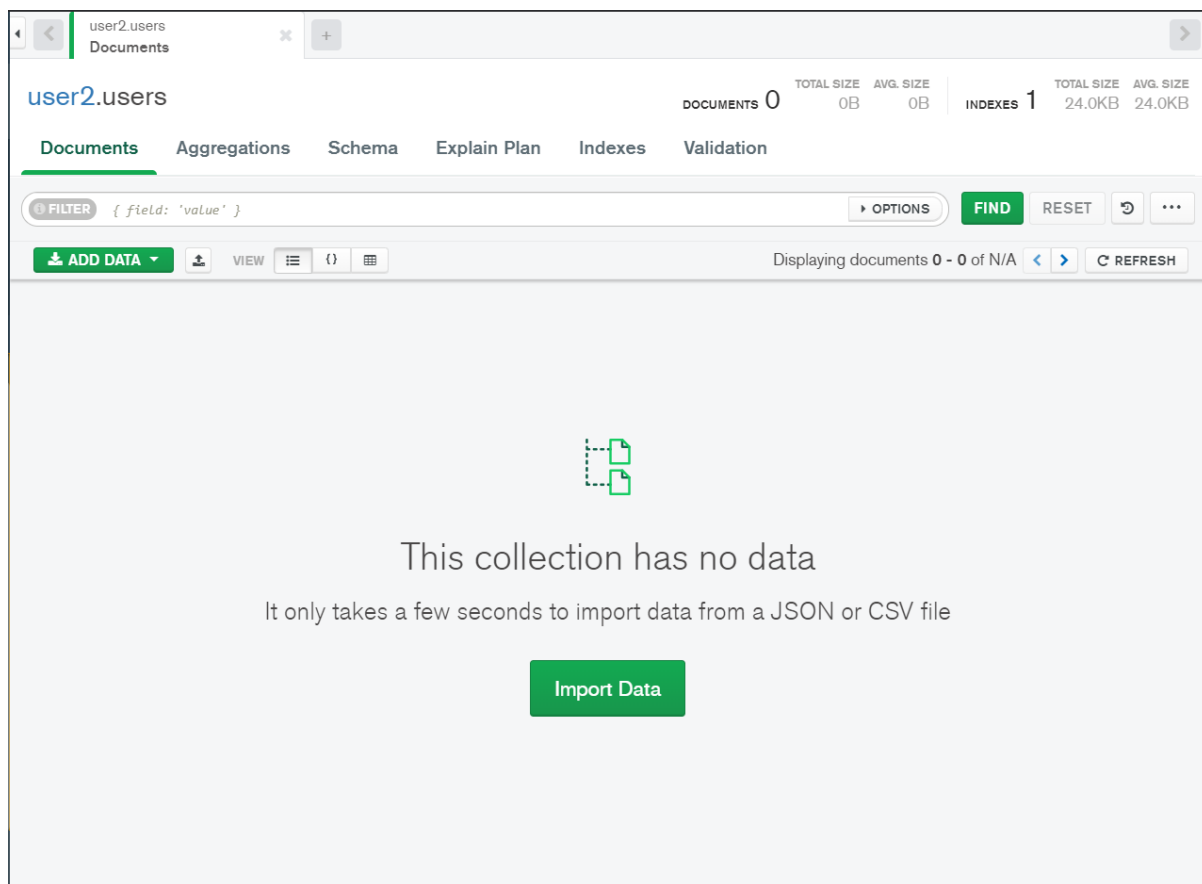
```
?>
```

Result

In Browser



In MongoDB Compass



Insert Values

//add.php

<html>

<head>

```
<title>Add Data</title>

</head>

<body>

<?php
include_once("connectioncrude.php");

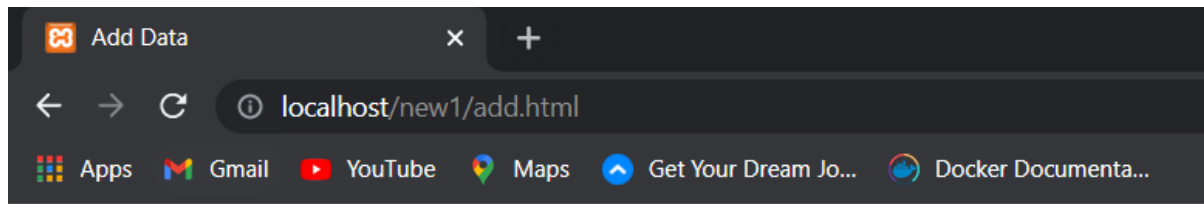
if(isset($_POST['Submit'])) {
    $user = array (
        'name' => $_POST['name'],
        'age' => $_POST['age'],
        'email' => $_POST['email']
    );
    $db->users->insertOne($user);
    echo "<font color='green'>Data added successfully.";
    echo "<br/><a href='index2.php'>View Result</a>";
}
?>

</body>

</html>
```

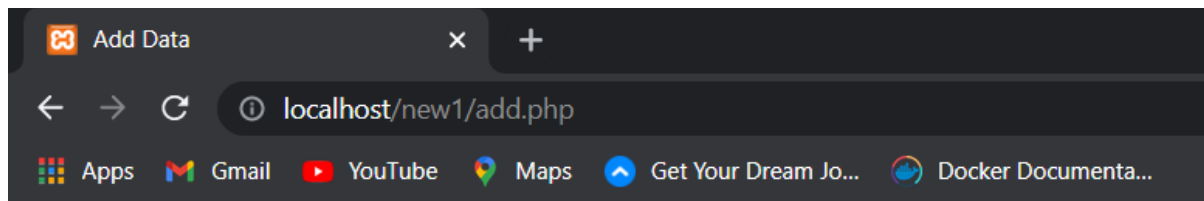
Result

In Browser



[Home](#)

Name	<input type="text" value="Ammu"/>
Age	<input type="text" value="15"/>
Email	<input type="text" value="ammu@gmail.com"/>
	<input type="button" value="Add"/>



mongodb://127.0.0.1/user2Data added successfully.

[View Result](#)

In Mongoddb Compass

user2.users

DOCUMENTS 1 TOTAL SIZE 75B AVG. SIZE 75B INDEXES 1 TOTAL SIZE 24.0KB AVG. SIZE 24.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER { field: 'value' } OPTIONS FIND RESET ↺ ...

ADD DATA VIEW {}

Displaying documents 1 - 5 of 5 REFRESH

	_id ObjectId	name String	age String	email String
1	615b17e1e82200002b00004b	"Ammu"	"15"	"ammu@gmail.com"
2	615b199be82200002b000050	"Ajin"	"19"	"ajin@gmail.com"
3	615b19b5e82200002b000051	"Meenu"	"78"	"meenu@gmail.com"
4	615b19dae82200002b000052	"Athira"	"18"	"athira@gmail.com"
5	615b19fce82200002b000053	"Sini"	"20"	"sini@gmail.com"

R-Read

```
//index2.php
```

```
<?php
```

```
include_once("connectioncrude.php");
```

```
$result = $db->users->find();
```

```
?>
```

```
<html>
```

```
<head>
```

```
    <title>Homepage</title>
```

```
</head>
```

```
<body>
```

```
<a href="add.html">Add New Data</a><br/><br/>
```

```
    <table width='80%' border=0>
```

```

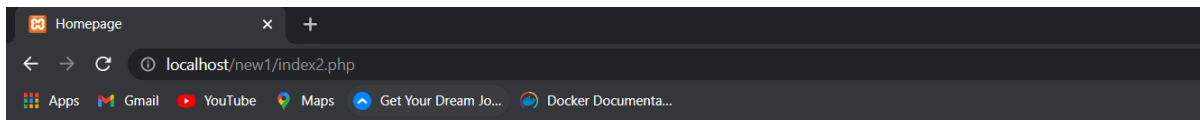
<tr bgcolor='#CCCCCC'>
    <td>Name</td>
    <td>Age</td>
    <td>Email</td>
    <td>Update</td>
</tr>
<?php
foreach ($result as $res) {
    echo "<tr>";
    echo "<td>".$res['name'].</td>";
    echo "<td>".$res['age'].</td>";
    echo "<td>".$res['email'].</td>";
    echo "<td><a href='\"edit.php?id=$res[_id]\"'>Edit</a> | <a
href='\"delete.php?id=$res[_id]\"' onClick='\"return confirm('Are you sure you want
to delete?')\">Delete</a></td>";
    }
?>
</table>

</body>
</html>

```

Result

In Browser



mongodb://127.0.0.1/user2 [Add New Data](#)

Name	Age	Email	Update
Ammu	15	ammu@gmail.com	Edit Delete
Ajin	19	ajin@gmail.com	Edit Delete
Meenu	78	meenu@gmail.com	Edit Delete
Athira	18	athira@gmail.com	Edit Delete
Sini	20	sini@gmail.com	Edit Delete

U-Update

```
//edit.php

<?php

include_once("connectioncrude.php");

if(isset($_POST['update']))

{

    $id = $_POST['id'];

    $name1 = $_POST['name'];

    $age1 = $_POST['age'];

    $email1 = $_POST['email'];

    $db->users->updateOne(

        ['_id' => new MongoDB\BSON\ObjectID($id)],

        ['$set' => ['name' => $name1, 'age' => $age1, 'email' =>

$email1,]]);

    header("Location: index2.php");

}

?>

<?php

$id = $_GET['id'];

$result = $db->users->findOne(['_id' => new MongoDB\BSON\ObjectID($id)]);

$name = $result['name'];

$age = $result['age'];

$email = $result['email'];

?>

<html>

<head>

    <title>Edit Data</title>

</head>

<body>

    <a href="index2.php">Home</a>

    <br/><br/>
```



```

        <form name="form1" method="post" action="edit.php">
            <table border="0">
                <tr>
                    <td>Name</td>
                    <td><input type="text" name="name" value="<?php
echo $name;?>"></td>
                </tr>
                <tr>
                    <td>Age</td>
                    <td><input type="text" name="age" value="<?php
echo $age;?>"></td>
                </tr>
                <tr>
                    <td>Email</td>
                    <td><input type="text" name="email" value="<?php
echo $email;?>"></td>
                </tr>
                <tr>
                    <td><input type="hidden" name="id" value="<?php
echo $_GET['id'];?>"></td>
                    <td><input type="submit" name="update"
value="Update"></td>
                </tr>
            </table>
        </form>
    </body>
</html>

```

Result

In Browser

Homepage x +

localhost/new1/index2.php

Apps Gmail YouTube Maps Get Your Dream Jo... Docker Documenta...

mongodb://127.0.0.1/user2 [Add New Data](#)

Name	Age	Email	Update
Annu	15	annu@gmail.com	Edit Delete
Ajin	19	ajin@gmail.com	Edit Delete
Meenu	78	meenu@gmail.com	Edit Delete
Athira	18	athira@gmail.com	Edit Delete
Sini	20	sini@gmail.com	Edit Delete

Edit Data x +

localhost/new1/edit.php?id=615b199be82200002b000050

Apps Gmail YouTube Maps Get Your Dream Jo... Docker Documenta...

mongodb://127.0.0.1/user2 [Home](#)

Name

Age

Email

Edit Data x +

localhost/new1/edit.php?id=615b199be82200002b000050

Apps Gmail YouTube Maps Get Your Dream Jo... Docker Documenta...

mongodb://127.0.0.1/user2 [Home](#)

Name

Age

Email

Homepage x +

localhost/new1/index2.php

Apps Gmail YouTube Maps Get Your Dream Jo... Docker Documenta...

mongodb://127.0.0.1/user2 [Add New Data](#)

Name	Age	Email	Update
Ammu	15	ammu@gmail.com	Edit Delete
Manu	30	manu@gmail.com	Edit Delete
Meenu	78	meenu@gmail.com	Edit Delete
Athira	18	athira@gmail.com	Edit Delete
Sini	20	sini@gmail.com	Edit Delete

In Mongodb Compass

user2.users Documents

user2.users DOCUMENTS 1 TOTAL SIZE 75B AVG. SIZE 75B INDEXES 1 TOTAL SIZE 24.0KB AVG. SIZE 24.0KB

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER { field: 'value' } OPTIONS FIND RESET ↺ ...

ADD DATA VIEW { } Refresh

Displaying documents 1 - 5 of 5

	_id ObjectId	name String	age String	email String	
1	615b17e1e82200002b00004b	"Ammu"	"15"	"ammu@gmail.com"	Edit Copy Delete
2	615b199be82200002b000050	"Manu"	"30"	"manu@gmail.com"	Edit Copy Delete
3	615b19b5e82200002b000051	"Meenu"	"78"	"meenu@gmail.com"	Edit Copy Delete
4	615b19dae82200002b000052	"Athira"	"18"	"athira@gmail.com"	Edit Copy Delete
5	615b19fce82200002b000053	"Sini"	"20"	"sini@gmail.com"	Edit Copy Delete

D-Delete

//delete.php

<?php

include("connectioncrude.php");

\$id = \$_GET['id'];

echo \$id;

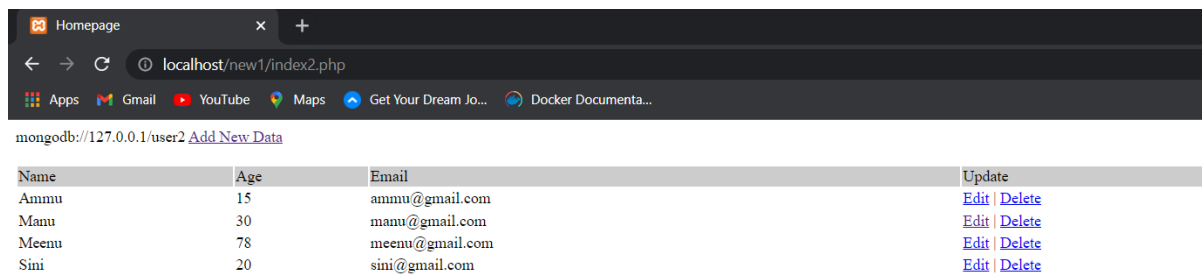
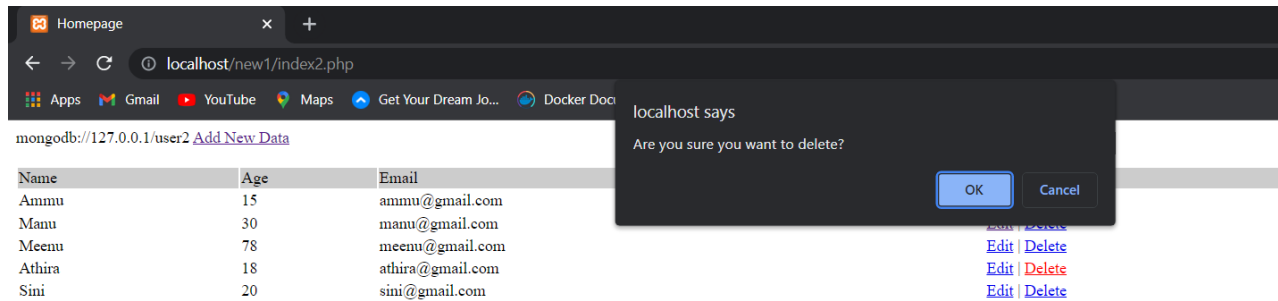
\$db->users->deleteOne(['_id' => new MongoDB\BSON\ObjectID(\$id)]);

```
header("Location:index2.php");
```

```
?>
```

Result

In Browser



In Mongodb Compass

user2.usersDocuments

user2.users

DOCUMENTS 1TOTAL SIZE 75B AVG. SIZE 75BINDEXES 1TOTAL SIZE 24.0KB AVG. SIZE 24.0KB

DocumentsAggregationsSchemaExplain PlanIndexesValidation

FILTER { field: 'value' }

OPTIONS

FIND

RESET

ADD DATA

VIEW

Displaying documents 1 - 4 of 4

REFRESH

users

| | _id ObjectId | name String | age String | email String | |
|---|--------------------------|-------------|------------|-------------------|---|
| 1 | 615b17e1e82200002b00004b | "Ammu" | "15" | "ammu@gmail.com" | <div><div></div><div></div><div></div><div></div></div> |
| 2 | 615b199be82200002b000050 | "Manu" | "30" | "manu@gmail.com" | <div><div></div><div></div><div></div><div></div></div> |
| 3 | 615b19b5e82200002b000051 | "Meenu" | "78" | "meenu@gmail.com" | <div><div></div><div></div><div></div><div></div></div> |
| 4 | 615b19fce82200002b000053 | "Sini" | "20" | "sini@gmail.com" | <div><div></div><div></div><div></div><div></div></div> |