

①

DATABASE

- Accessing data from databases
- Introduction to database
- Installing SQLite3
- Learning
 - ↳ DDL
 - ↳ DML
 - ↳ SQL
- Using Python
 - ↳ create database
 - ↳ manipulate database
 - ↳ querying database

DATABASE

Students

| Roll | Name |
|------|----------|
| 1 | Ajay |
| 2 | Vijay |
| 3 | Ajay |
| 4 | Kamesh |
| 5 | Suneetha |
| 6 | Anita |
| 7 | Raj |
| 8 | Ali |
| 9 | Michael |
| 10 | Praveen |
| 11 | Sujesh |
| 12 | Aifa |
| 13 | Ravi |
| 14 | Veena |
| 15 | Shrema |

TERMINOLOGY

| City | Deptno |
|-----------|--------|
| Delhi | 10 |
| Kolkata | 10 |
| Mumbai | 20 |
| Delhi | 30 |
| Lucknow | 40 |
| Kolkata | 30 |
| Jaipur | 30 |
| Lucknow | 40 |
| Cochin | 10 |
| Vijaywada | 20 |
| Hyderabad | 10 |
| Bengaluru | 40 |
| Indore | 20 |
| Delhi | 20 |
| Vizag | 10 |

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| DEPT | |
|--------|-------|
| Deptno | Name |
| 10 | CSE |
| 20 | ECE |
| 30 | CIVIL |
| 40 | MECH |

Technology

1. Relation \rightarrow RDBMS
 students } Dept Relation schema of a table
2. Description \rightarrow fields
3. columns \rightarrow Record - Tuple
4. Rows \rightarrow value (No value \rightarrow NULL)
5. Rollno \rightarrow unique value
 no NULL } unique } \rightarrow Primary Key
6. Relationship
 Students \rightarrow DEPT
Deptno Deptno

↳ Students
rollno → P.K.
Dept.no → F.K.

P.K. DEP
Depeno

↳ Constraints

not null } P.K.
unique } F.K.
Deptno } DEP
10
20
30
40

Integrity

Constraint

↳ Downloading + SQLite

down SQLite → 64-bit windows
A bundle & command-line

3

↳ copy 3 all files
extract all

C:\ SQLite → 3 copy files

cmd prompt

cd SQLite

SQLite3

.help

↳ databases existing database

.open

↳ database

univ.db

↳ .open

DDL & DML

DML

Learning

DDL

Create

Drop

Alter

Truncate

Rename

Insert

Delete

Update

Query

Select

From

Where

DCL

Description \rightarrow DDL

delete | insert | update \rightarrow DML

Select, from where \rightarrow Query



NULL

INTEGER

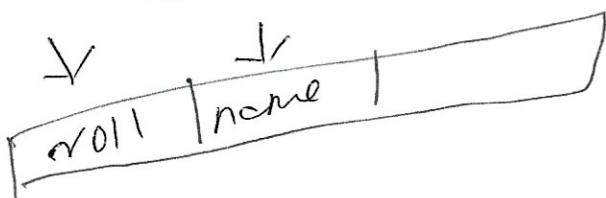
REAL | FLOAT | NUMERIC (S,2)

TEXT

CHAR | VARCHAR

→ video | audio | image

BLOB



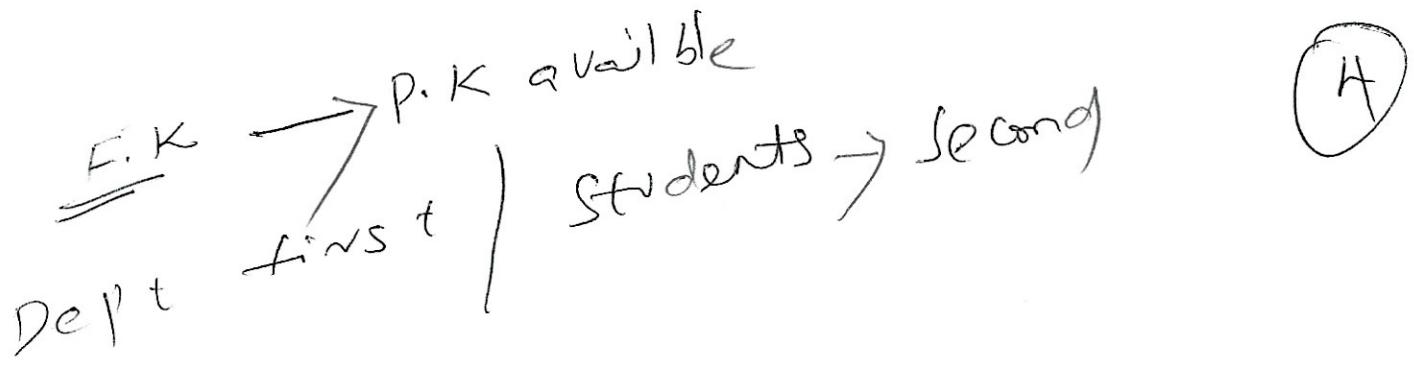
To AB Database
1. Create Table

2. Create Keys

3. Define Dots
Insert Data

4. Query Data

5.



↳ salut^{h3}
 univ. bd
 . open

↳ create table dept
 deptno integer primary key
 not null unique,
 dname varchar,
 loc next);

↳ tables
 dept
 create table students
 roll integer primary key,
 name text, city text,
 deptno integer
 foreign key
 dept (deptno) (deptno);
 reference

↳ tables

↳ DML

↳ insert into

dept values (10, 'CSE'),
(20, 'ECE'),
(30, 'CIVI'),
(40, 'MECH');

↳ insert into dept (dname, depno)
values ('Chem', 50);

↳ insert into dept;

↳ select * from dept;
foreign-keys = ON

↳ pragma;

↳ insert into students
values (1, 'Ajay', 'DETK', 10);

↳ insert into students
values (2, 'Rahul', 'IT', 12);

↳ select * from students;

↳ select

↳ create table dept (deptno integer primary key, dname text);

↳ create table student (roll integer primary key, name text, ctn text, deptno integer, foreign key (deptno) references dept (deptno),
foreign key (deptno) references dept (deptno))

→ Pragma foreign_keys=ON

↳ tables

↳ DML Queries
insert into dept values (10, 'CSE')
(20, 'ECE')
(30, 'CIVIL')
(40, 'Mech')

Select * from dept;

SQL Query Language

~~SQL~~ ~~Query~~ ~~Language~~

Select

from

join

where

order by

group by

having

↳ DQL

1 Roll name city Deptno → students
Deptno name → Dept

→ open Univ
Select name from students;

Select name, roll from students;

Select name, roll, deptno from students;

Select roll, name, city, deptno from students

Select * from dept

Select * from

Select * from students;
from students;

Select deptno

Select distinct deptno

Select name from students

Select distinct name from students

Select

→ Select distinct name, deptno from students

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Condition [rows]

→ where

Select * from students where city = 'Delhi'

Delhi students from students table

city <> 'Delhi'

not Delhi

↳

→ where deptno >= 730;
 >= 30;

IN

<= } AND }
>= } OR }
> } NOT }
<= }
> }
<= }
> }
<= }

LIKE
Between 10 and 20

NOT IN

→ students where deptno >= 30 and city = 'Lucknow'
 not city = ''

LIKE | BETWEEN
 |
 |
 |
 |

like 'A%';
 '%Y';

'ym';

between 10 and 30;

20 and 40

5 and 10

→ where deptno between 5 and 10
 rollno

IN | NOT IN

↳ Where city in ('Delhi', 'Jaipur')
not in ('Delhi', 'Jaipur')
city = 'Delhi' and city = 'Jaipur'

↳ Select name from students
Aijam
Vijay
Ajay

↳ Select name, roll from students
Aijay 1
Vijay 2
Ajay 3

↳ Select * from students
1 Aijay Delhi 10
2 Vijay Kolkata 40

↳ Select deptno from students
10
20

7

↳ select distinct depno from student

10

20

30

40

↳ distinct * from student

Depn 10

Kolkat 10

1 Ajay
2 Vinay

↳ select * from students

1 Ajay Depn 10

2 Pernesh Depn 20

3 Virend Depn 20

4 Varun Depn 30

where city = 'Delhi'

↳ where city = 'Delhi'

↳ !