UNIT-2: Database backup & CSV handling

2.1 SQLite dump:

- '.dump' is the command which allows user to dump entire database, table, structure etc. into text file.
- In another word, it is used to take backup of database into file.
- Example:

```
.open student
create table stud_info(rno, name, gender);
insert into stud_info values(1,'Reet','M'),(2,'Meet','M'),
        (3,'Geet','F'),(4,'Jeet','M');
create table stud_result(rno, m1,m2,m3);
insert into stud_result(1,45,65,76),(2,54,66,87),(3,45,56,67),(4,78,89,87);
```

- Student database:
  - stud_info & stud_result tables

2.1.1 Dump entire database into file

- '.dump' command is used to dump entire database into file.
- Syntax:

```
.dump : It is used to dump the whole database related information.
```

- By default '.dump' command dump content on output screen.
- To save output into specific file, '.output' command is used.
- Syntax:

```
.output filename
.dump
```

- Now the dump output is stored into given filename.
- This file is stored in SQLite folder.
- Example:

```
.output temp.txt
.dump
```

```
PRAGMA foreign_keys=OFF;
BEGIN TRANSACTION;
CREATE TABLE stud_info(rno, name, gender);
INSERT INTO stud_info VALUES(1,'Reet','M');
INSERT INTO stud_info VALUES(2,'Meet','M');
INSERT INTO stud_info VALUES(3,'Geet','F');
INSERT INTO stud_info VALUES(4,'Jeet','M');
CREATE TABLE stud_result(rno, m1,m2,m3);
INSERT INTO stud_result VALUES(1,45,65,76);
INSERT INTO stud_result VALUES(2,54,66,87);
INSERT INTO stud_result VALUES(3,45,56,67);
INSERT INTO stud_result VALUES(4,78,89,87);
COMMIT;
```

2.1.2 Dump specific table into file

- To dump specific table into file DUMP command is used with table name.
- Syntax:

```
.output filename
.dump table_name
```

- Example:

  .output temp.txt

  .dump stud_info

```
PRAGMA foreign_keys=OFF;
BEGIN TRANSACTION;
CREATE TABLE stud_info(rno, name, gender);
INSERT INTO stud_info VALUES(1,'Reet','M');
INSERT INTO stud_info VALUES(2,'Meet','M');
INSERT INTO stud_info VALUES(3,'Geet','F');
INSERT INTO stud_info VALUES(4,'Jeet','M');
COMMIT;
```

- The information dumps into the file till you quit from SQLite mode.
- Example:

  Select * from stud_result;

```
PRAGMA foreign_keys=OFF;
BEGIN TRANSACTION;
CREATE TABLE stud_info(rno, name, gender);
INSERT INTO stud_info VALUES(1,'Reet','M');
INSERT INTO stud_info VALUES(2,'Meet','M');
INSERT INTO stud_info VALUES(3,'Geet','F');
INSERT INTO stud_info VALUES(4,'Jeet','M');
COMMIT;
1|45|65|76
2|54|66|87
3|45|56|67
4|78|89|87
```

- To stop dumping output into file, use '.quit' command.

2.1.3 Dump only table structure

- To view the table structure, '.schema' command is used.
- To dump table structure into file again use '.output' command.
- Syntax:

  .output filename

  .schema tablename

- Example:

  .output temp.txt

  .schema stud_info

- It dumps the structure of stud_info into temp.txt file.

2.1.4 Dump data of one or more tables into a file

- To dump table data of one or more tables into file, first change mode setting.

  .mode insert (It displays insert statements of each rows)

- Write select statements to display each rows' data into table.
- Example:

  .mode insert

  .output temp.txt

  Select * from stud_info

```
INSERT INTO "table" VALUES(1,'Reet','M');
INSERT INTO "table" VALUES(2,'Meet','M');
INSERT INTO "table" VALUES(3,'Geet','F');
INSERT INTO "table" VALUES(4,'Jeet','M');
```

2.2 CSV files handling:

- CSV stands for “Comma Separated Value”.
- Stud.csv file

```
Rollno,Name,Address,Gender
101,Smit,Varachha,M
102,Jasmeet,Katargam,M
103,Jenish,Amroli,M
201,Jaimini,Varachha,F
202,Tanshukh,Katargam,M
203,Uma,Ved road,F
```

2.2.1 Import a CSV file into a table

- CSV file can be imported using SQLite.
- Syntax:

  .mode csv

  .import csv_filename tablename
- Example:

  .mode csv

  .import stud.csv stud
- These commands import stud.csv file into stud table.
- SQLite consider first line of CSV file as heading for column and all other lines are considers as records of table.
- To see the structure of STUD table:

  .schema stud

```
CREATE TABLE IF NOT EXISTS "stud"(
  "Rollno" TEXT,
  "Name" TEXT,
  "Address" TEXT,
  "Gender" TEXT
```

- To see records of STUD table:

  Select * from stud;

```
101,Smit,Varachha,M
102,Jasmeet,Katargam,M
103,Jenish,Amroli,M
201,Jaimini,Varachha,F
202,Tanshukh,Katargam,M
203,Uma,"Ved road",F
```

2.2.2 Export a CSV file from table

- Table content can be exported to CSV file using SQLite.
- Write following code:

  .mode csv

  .header on

  .output temp.csv

  Select * from stud;
- ‘.mode csv’: converts the mode to csv format.

- '.header on': display column heading on top (means in first line).
- '.output temp.csv' : allow to redirect results into temp.csv file.
- 'select * from stud': it displays tables' record related information.
- Output:

```
Rollno,Name,Address,Gender
101,Smit,Varachha,M
102,Jasmeet,Katargam,M
103,Jenish,Amroli,M
201,Jaimini,Varachha,F
202,Tanshukh,Katargam,M
203,Uma,Ved road,F
```