```sql
 1  /* CREATION OF A DATABASE */
 2  CREATE DATABASE DB1
 3
 4  /* USING DATABASE */
 5  USE DB1
 6  --DROP DATABASE DB1
 7  --BACKUP DATABASE DB1 TO DISK = 'D:\\placement traning SQL'
 8
 9  /* CREATION OF A TABLE */
10  CREATE TABLE TB1
11  (NAME VARCHAR(22),
12  ID INT,
13  );
14
15  /* INSERTING VALUES INTO TABLE */
16  INSERT INTO TB1 VALUES('MAHESH',1)
17  INSERT INTO TB1 VALUES('SURESH',2)
18
19  /* RETRIEVING DATA FROM THE TABLE */
20  SELECT * FROM TB1
21
22  /* ADDING A NEW COLUMN FOR THE EXISTING TABLE */
23  ALTER TABLE TB1
24  ADD DEPTID INT
25
26  /* RETRIEVING DATA FROM THE TABLE */
27  SELECT * FROM TB1
28
29  /* CHANGING THE DATA TYPE OF A COLUMN IN THE TABLE */
30  ALTER TABLE TB1
31  ALTER COLUMN DEPTID VARCHAR(33)
32
33  /* RETRIEVING DATA FROM THE TABLE */
34  SELECT * FROM TB1
35
36  /* DROPING THE COLUMN FROM THE TABLE */
37  ALTER TABLE TB1
38  DROP COLUMN DEPTID;
39
40  /* RETRIEVING DATA FROM THE TABLE */
41  SELECT * FROM TB1
42
43                          /*      CONSTRAINTS         */
44  /* NOT NULL WHILE CREATING OF A TABLE  */
45  CREATE TABLE NOTNULL
46  (
47  NAME VARCHAR(33) NOT NULL,
48  AGE INT
49  );
50
51  /* to drop the table */
52  --DROP TABLE NOTNULL
53
```

```sql
54  INSERT INTO NOTNULL VALUES('MAHA', 20)
55
56  SELECT * FROM NOTNULL
57
58  /* NOT NULL AFTER CREATING TABLE -> ALTER */
59
60  ALTER TABLE NOTNULL
61  ALTER COLUMN AGE INT NOT NULL
62
63  /* YOU CAN NOT ADD A NEW COLUMN THAT IS NOT NULL BECAUSE PREVIOUS ENTRIES  ⮑
       WILL BECAME NULL */
64
65  /*      UNIQUE      */
66  CREATE TABLE UNIQUE_TABLE
67  (
68  ID INT NOT NULL UNIQUE,
69  FN VARCHAR(44) NOT NULL,
70  DOB DATE UNIQUE
71  );
72
73  INSERT INTO UNIQUE_TABLE VALUES(2,'MAHA','11/06/2013')
74  INSERT INTO UNIQUE_TABLE VALUES(3,'MAHA',NULL)
75  INSERT INTO UNIQUE_TABLE VALUES(4,'MAHA','11/06/2023')
76
77  SELECT * FROM UNIQUE_TABLE
78
79  /* To define a UNIQUE constraint on multiple columns */
80
81  CREATE TABLE UNIQUE_TABLE2
82  (
83  ID INT,
84  FNAME VARCHAR(44),
85  CONSTRAINT UC_PERSON UNIQUE(ID,FNAME)
86  );
87
88  --DROP TABLE UNIQUE_TABLE2
89
90
91  INSERT INTO UNIQUE_TABLE VALUES(1,'MAHESH', '12/06/2003')
92  INSERT INTO UNIQUE_TABLE2 VALUES(1,'MA')
93  INSERT INTO UNIQUE_TABLE2 VALUES(2,'MA')
94  -- INDIVIDUALLY WE CAN HAVE DUPLICATES BUT COMBINATION SHOULD NOT ALLOWED
95
96  SELECT * FROM UNIQUE_TABLE2
97                  -- PRIMARY KEY
98  CREATE TABLE PRIMARY_
99  (
100 ID INT PRIMARY KEY,
101 NAME VARCHAR(55) NOT NULL
102 );
103
104
105
```

```sql
106  CREATE TABLE PRIMARY_2
107  (
108  ID INT NOT NULL,
109  NAME VARCHAR(22)
110  CONSTRAINT PRIME PRIMARY KEY (ID,NAME)
111  );
112
113  CREATE TABLE PRIMARY_3
114  (
115  ID INT,
116  NAME VARCHAR(22));
117
118
119  --ALTER TABLE PRIMARY_3
120  --ADD CONSTRAINT PRIMARY_KEY PRIMARY KEY (ID)
121
122  /*THE ABOVE FAILS TO ADD PRIMARY_KEY CONSTRAINT BECAUSE IT IS ALLOWING     ↵
       NULL VALUES FOR THAT*/
123  ALTER TABLE PRIMARY_3
124      ALTER COLUMN ID INT NOT NULL
125
126  ALTER TABLE PRIMARY_3
127      ADD CONSTRAINT PRIMARY_KEY PRIMARY KEY(ID)
128
129
130
131  --DROP TABLE PRIMARY_2
132
133  --ALTER TABLE PRIMARY_2
134  --ADD ID2 INT PRIMARY KEY
135
136  -- WE CAN NOT HAVE MORE THAN ONE PRIMARY KEYS IN A TABLE
137
138
139  SELECT * FROM PRIMARY_2
140
141  ALTER TABLE PRIMARY_2
142  DROP PRIME
143
144  ALTER TABLE PRIMARY_2
145  ADD ID2 INT PRIMARY KEY
146
147  --ALTER TABLE PRIMARY_
148  --DROP COLUMN ID
149
150  -- YOU CAN NOT DIRECTLY REMOVE A COLUMNS WHICH IS HAVING PRIMARY KEY
151  -- BUT YOU CAN REMOVE THE CONSTRAINT
152
153  ALTER TABLE PRIMARY_
154  DROP CONSTRAINT [PK__PRIMARY___3214EC275E70000B]
155  -- EACH TIME NEW KEY WILL BE GENERATED
156  -- NOT A GOOD APPROACH OF DEFINING CONSTRAINTS LIKE THIS
157  -- SO BETTER DEFINE THE CONSTRAINTS AS CONSTRAINTS SO WE USE THAT NAME IN   ↵
```

```
     FUTURE
158
159 SELECT * FROM PRIMARY_
160 -- THEN YOU CAN DROP THE COLUMN
161
162 ALTER TABLE PRIMARY_
163 DROP COLUMN ID
164
165 SELECT * FROM PRIMARY_
166
167         /*         FOREIGN KEY     */
168 /*     CREATING TABLE       */
169 CREATE TABLE BASE
170 (
171     ID INT PRIMARY KEY,
172     NAME VARCHAR(44) NOT NULL
173 );
174
175 INSERT INTO BASE VALUES(2,'A')
176
177 CREATE TABLE FOREIGNT(
178 ID1 INT PRIMARY KEY,
179 ID INT FOREIGN KEY REFERENCES BASE(ID));
180
181 INSERT INTO FOREIGNT VALUES(2,2)
182
183 SELECT * FROM BASE
184 SELECT * FROM FOREIGNT
185
186 SELECT ID1 FROM FOREIGNT,BASE WHERE BASE.ID = FOREIGNT.ID
187
188 /*     ALTER FOREIGN KEY      */
189 ALTER TABLE BASE
190 ADD NEW_ID INT FOREIGN KEY REFERENCES FOREIGNT(ID1);
191 -- REFERENCING FOREIGNT FROM BASE TABLE
192
193 SELECT * FROM BASE
194 SELECT * FROM FOREIGNT
195
196 CREATE TABLE BASE1(
197 ID2 INT PRIMARY KEY,
198 CONSTRAINT FK  FOREIGN KEY(ID2) REFERENCES BASE(ID));
199
200 /*         DROP FOREIGN KEY         */
201 ALTER TABLE BASE1
202 DROP FK
203
204 /* ALTER TABLE BASE
205 DROP CONSTRAINT NEW_ID */
206
207 -- AS PREVIOUSLY MENTIONED WE CAN NOT DROP COLUMN WHICH IS HAVING A     ⏎
    CONSTRAINT
208
```

```sql
209  /*             CHECK         */
210  /* The CHECK constraint is used to limit the value range that can be
         placed in a column. */
211
212  CREATE TABLE CHECKT
213  (
214      ID INT PRIMARY KEY,
215      NAME VARCHAR(44),
216      AGE INT CHECK(AGE>=18)
217  );
218
219  SELECT * FROM CHECKT
220
221  INSERT INTO CHECKT VALUES(1,'M',19);
222
223  -- INSERT INTO CHECKT VALUES(2,'M',12);
224  --The INSERT statement conflicted with the CHECK constraint
225
226  --NAME TO CONSTRAINT
227  CREATE TABLE CKECKT1(
228      ID INT PRIMARY KEY,
229      NAME VARCHAR(44),
230      AGE INT,
231      CONSTRAINT CK CHECK(AGE>=18)
232  );
233
234  -- INSERT INTO CKECKT1 VALUES(2,'M',12);
235  --The INSERT statement conflicted with the CHECK constraint
236
237  --MULTIPLE
238
239  CREATE TABLE CHECK2(
240  NAME VARCHAR(5),
241  AGE INT,
242  CONSTRAINT CK1 CHECK(AGE > 18 AND NAME = 'M'));
243
244  INSERT INTO CHECK2 VALUES('M',19)
245
246  --INSERT INTO CHECK2 VALUES('D',122)
247  --The INSERT statement conflicted with the CHECK constrain
248
249  --INSERT INTO CHECK2 VALUES('M',12)
250  --The INSERT statement conflicted with the CHECK constrain
251
252  INSERT INTO CHECK2 VALUES('M',22)
253
254  SELECT * FROM CHECK2
255  --BOTH SHOULD SATISFY
256
257  --ALTER
258  SELECT * FROM CHECKT
259
260  ALTER TABLE CHECKT
```

```sql
261  ADD CONSTRAINT CK2 CHECK(NAME = 'M')
262
263  ALTER TABLE CHECKT
264  ADD CHECK (ID<18)
265
266  -- ALL CONSTRAINTS WILL BE UPDATED
267  --DROPING
268
269  ALTER TABLE CHECKT
270  DROP  CK2
271
272  /*      DEFAULT      */
273  /* The DEFAULT constraint is used to set a default value for a column. */
274
275  -- CREATION
276
277  CREATE TABLE DEFAULTT(
278  ID INT,
279  NAME VARCHAR(33),
280  AGE INT DEFAULT 18
281  );
282
283  INSERT INTO DEFAULTT (ID,NAME) VALUES(1,'M')
284
285  SELECT * FROM DEFAULTT
286
287  CREATE TABLE DEFAULTT2(
288  ID INT,
289  AGE DATE DEFAULT GETDATE()
290  )
291
292  -- TODAYS DATE WILL BE GENERATED
293
294  INSERT INTO DEFAULTT2 (ID) VALUES (2)
295
296  SELECT * FROM DEFAULTT2
297
298  SELECT * FROM DEFAULTT
299
300  --SQL DEFAULT on ALTER TABLE
301
302  ALTER TABLE DEFAULTT
303  ADD CONSTRAINT DEF  DEFAULT 'MAHESH' FOR NAME
304
305  INSERT INTO DEFAULTT (ID,AGE) VALUES(2,34)
306  -- EVEN I AM NOT GIVING MAHESH IT WILL AUTOMATICALLY TOOK MAHESH
307  SELECT * FROM DEFAULTT
308
309  INSERT INTO DEFAULTT  VALUES(2, 'SURESH',34)
310  -- IF I GIVE A VALUE THAT WILL BE TAKEN
311  SELECT * FROM DEFAULTT
312
313
```

```sql
314  -- DROP
315  ALTER TABLE DEFAULTT
316  DROP DEF
317
318
319  /* AUTO INCREMENT  */
320  CREATE TABLE INCREMENT
321  (
322  ID INT IDENTITY(1,10) PRIMARY KEY,
323  NAME VARCHAR(33)
324  )
325
326
327  /* EACH INSERTION IDENTITY WILL INCREMENT IT BY 10 AS IT IS MENTIONED 10
328  AND STARTS WITH 1 */
329
330
331  INSERT INTO INCREMENT (NAME) VALUES ('MA')
332  INSERT INTO INCREMENT (NAME) VALUES ('HE')
333  INSERT INTO INCREMENT (NAME) VALUES ('SH')
334
335  -- INSERT INTO INCREMENT  VALUES (5,'MA')
336
337  -- WE CAN NOT EXPLICITY ADD A VALUE FOR INCREMENTING COLUMNS
338  -- IF WE WANT TO INSERT IN THE ROW WE WILL GET ERROR
339
340  SELECT * FROM INCREMENT
341
342  CREATE TABLE INCREMENT2
343  (
344  ID INT IDENTITY(1,2),
345  NAME VARCHAR(22)
346  )
347
348  -- IT WORKS EVEN IF IT IS NOT A PRIMARY KEY
349
350  INSERT INTO INCREMENT2 (NAME) VALUES ('MA')
351  INSERT INTO INCREMENT2 (NAME) VALUES ('HE')
352  INSERT INTO INCREMENT2 (NAME) VALUES ('SH')
353
354  SELECT * FROM INCREMENT2
355
356  /*      DATES       */
357  CREATE TABLE DATES
358  (
359  DATE1 DATE ,
360  DATE2 DATETIME,
361  DATE3 SMALLDATETIME,
362  DATE4 TIMESTAMP
363  );
364
365  INSERT INTO DATES (DATE1) VALUES ('11-06-2003')
366
```

```sql
367  INSERT INTO DATES (DATE2) VALUES ('11-06-2003 11:02:11')
368  INSERT INTO DATES (DATE3) VALUES ('11-06-2003 11:02:11')
369  INSERT INTO DATES (DATE4) VALUES (NULL)
370  INSERT INTO DATES (DATE2) VALUES ('11-06-0')
371
372
373  SELECT * FROM DATES
374
375
376  /*      view        */
377  SELECT * FROM TB1
378      -- CREATING A VIEW
379
380  CREATE VIEW NAMES
381  AS
382  SELECT NAME FROM TB1;
383
384  SELECT * FROM NAMES
385
386
387  CREATE VIEW IDS AS
388  SELECT ID FROM TB1
389
390  SELECT * FROM IDS
391
392  --DROPING
393  DROP VIEW NAMES
394  DROP VIEW IDS
395
396
397
398
```