```sql
 1 USE master;
 2 GO
 3
 4
 5 -- create the database
 6 DROP DATABASE IF EXISTS SpeedingTickets;
 7 CREATE DATABASE SpeedingTickets;
 8 GO
 9
10
11 USE SpeedingTickets;
12 GO
13
14
15 -- create the tables
16 DROP TABLE IF EXISTS "User";
17 CREATE TABLE "User"
18 (
19     UserID        INT IDENTITY  NOT NULL,
20     FirstName     NVARCHAR(32)  NOT NULL,
21     LastName      NVARCHAR(32)  NOT NULL,
22     Photo         IMAGE         NULL,
23     PhoneNumber   NCHAR(11)     NOT NULL,
24     EmailAddress  NVARCHAR(32)  NOT NULL,
25     BirthDate     DATE          NOT NULL,
26     Username      NVARCHAR(32)  NOT NULL,
27     Password      NVARCHAR(32)  NOT NULL,
28     PRIMARY KEY (UserID)
29 );
30
31 DROP TABLE IF EXISTS Staff;
32 CREATE TABLE Staff
33 (
34     StaffID       INT IDENTITY  NOT NULL,
35     FirstName     NVARCHAR(32)  NOT NULL,
36     LastName      NVARCHAR(32)  NOT NULL,
37     Photo         IMAGE         NULL,
38     PhoneNumber   NCHAR(11)     NOT NULL,
39     EmailAddress  NVARCHAR(32)  NOT NULL,
40     BirthDate     DATE          NOT NULL,
41     Username      NVARCHAR(32)  NOT NULL,
42     Password      NVARCHAR(32)  NOT NULL,
43     PRIMARY KEY (StaffID)
44 );
45
46 DROP TABLE IF EXISTS Hardware;
```

```sql
47  CREATE TABLE Hardware
48  (
49      HardwareID        INT IDENTITY  NOT NULL,
50      Description       NVARCHAR(80)  NOT NULL,
51      Category          NVARCHAR(32)  NOT NULL,
52      Brand             NVARCHAR(32)  NOT NULL,
53      AcquisitionDate   DATE          NOT NULL,
54      WarrantyDate      DATE          NOT NULL,
55      SerialCode        NVARCHAR(32)  NOT NULL,
56      PRIMARY KEY (HardwareID)
57  );
58
59  DROP TABLE IF EXISTS Category;
60  CREATE TABLE Category
61  (
62      CategoryID   INT IDENTITY  NOT NULL,
63      Description  NVARCHAR(32)  NOT NULL,
64      SLA          NVARCHAR(32)  NOT NULL,
65      PRIMARY KEY (CategoryID)
66  );
67
68  DROP TABLE IF EXISTS Ticket;
69  CREATE TABLE Ticket
70  (
71      TicketID     INT IDENTITY   NOT NULL,
72      Description  NVARCHAR(255)  NOT NULL,
73      StartDate    DATETIME2      NOT NULL,
74      SLA          DATETIME2      NOT NULL,
75      Status       NVARCHAR(32)   NOT NULL,
76      EndDate      DATETIME2      NULL,
77      UserID       INT            NULL,
78      StaffID      INT            NOT NULL,
79      CategoryID   INT            NOT NULL,
80      HardwareID   INT            NULL,
81      PRIMARY KEY (TicketID)
82  );
83
84  DROP TABLE IF EXISTS Comment;
85  CREATE TABLE Comment
86  (
87      CommentID    INT IDENTITY   NOT NULL,
88      Description  NVARCHAR(255)  NOT NULL,
89      Date         DATETIME2      NOT NULL,
90      TicketID     INT            NOT NULL,
91      UserID       INT            NULL,
92      StaffID      INT            NULL,
```

```sql
 93        PRIMARY KEY (CommentID)
 94  );
 95
 96  DROP TABLE IF EXISTS TicketStaff;
 97  CREATE TABLE TicketStaff
 98  (
 99      StaffID         INT             NOT NULL,
100      TicketID        INT             NOT NULL,
101      Action          NVARCHAR(32)    NOT NULL
102  );
103
104
105  -- create relationships
106  ALTER TABLE Ticket
107      DROP CONSTRAINT IF EXISTS FK__User__UserID_T;
108  ALTER TABLE Ticket
109      ADD CONSTRAINT FK__User__UserID_T
110      FOREIGN KEY (UserID) REFERENCES "User" (UserID);
111
112  ALTER TABLE Ticket
113      DROP CONSTRAINT IF EXISTS FK__Staff__StaffID_T;
114  ALTER TABLE Ticket
115      ADD CONSTRAINT FK__Staff__StaffID_T
116      FOREIGN KEY (StaffID) REFERENCES Staff (StaffID);
117
118  ALTER TABLE Ticket
119      DROP CONSTRAINT IF EXISTS FK__Category__CategoryID_T;
120  ALTER TABLE Ticket
121      ADD CONSTRAINT FK__Category__CategoryID_T
122      FOREIGN KEY (CategoryID) REFERENCES Category (
    CategoryID);
123
124  ALTER TABLE Ticket
125      DROP CONSTRAINT IF EXISTS FK__Hardware__HardwareID_T;
126  ALTER TABLE Ticket
127      ADD CONSTRAINT FK__Hardware__HardwareID_T
128      FOREIGN KEY (HardwareID) REFERENCES Hardware (
    HardwareID);
129
130
131  ALTER TABLE Comment
132      DROP CONSTRAINT IF EXISTS FK__Ticket__TicketID_C;
133  ALTER TABLE Comment
134      ADD CONSTRAINT FK__Ticket__TicketID_C
135      FOREIGN KEY (TicketID) REFERENCES Ticket (TicketID);
136
```

```sql
137  ALTER TABLE Comment
138      DROP CONSTRAINT IF EXISTS FK__User__UserID_C;
139  ALTER TABLE Comment
140      ADD CONSTRAINT FK__User__UserID_C
141      FOREIGN KEY (UserID) REFERENCES "User" (UserID);
142
143  ALTER TABLE Comment
144      DROP CONSTRAINT IF EXISTS FK__Staff__StaffID_C;
145  ALTER TABLE Comment
146      ADD CONSTRAINT FK__Staff__StaffID_C
147      FOREIGN KEY (StaffID) REFERENCES Staff (StaffID);
148
149
150  -- create composite key in the TicketStaff table
151  ALTER TABLE TicketStaff
152      DROP CONSTRAINT IF EXISTS PK__TicketStaff;
153  ALTER TABLE TicketStaff
154      ADD CONSTRAINT PK__TicketStaff
155      PRIMARY KEY (StaffID, TicketID);
156
157  ALTER TABLE TicketStaff
158      DROP CONSTRAINT IF EXISTS FK__Staff_StaffID_TS;
159  ALTER TABLE TicketStaff
160      ADD CONSTRAINT FK__Staff_StaffID_TS
161      FOREIGN KEY (StaffID) REFERENCES Staff (StaffID);
162
163  ALTER TABLE TicketStaff
164      DROP CONSTRAINT IF EXISTS FK__Ticket_TicketID_TS;
165  ALTER TABLE TicketStaff
166      ADD CONSTRAINT FK__Ticket_TicketID_TS
167      FOREIGN KEY (TicketID) REFERENCES Ticket (TicketID);
168
169
170  -- create check constraint
171  ALTER TABLE "User"
172      DROP CONSTRAINT IF EXISTS CK__User__EmailAddress;
173  ALTER TABLE "User"
174      ADD CONSTRAINT CK__User__EmailAddress CHECK (
     EmailAddress LIKE '%_@_%.__%');
175
176  ALTER TABLE "User"
177      DROP CONSTRAINT IF EXISTS CK__User__Password;
178  ALTER TABLE "User"
179      ADD CONSTRAINT CK__User__Password CHECK (Password LIKE
     '[A-Z][A-Z][A-Z][A-Z][A-Z][A-Z][0-9][0-9]');
180
```

```
181
182  ALTER TABLE Staff
183      DROP CONSTRAINT IF EXISTS CK__Staff__EmailAddress;
184  ALTER TABLE Staff
185      ADD CONSTRAINT CK__Staff__EmailAddress CHECK (
     EmailAddress LIKE '%_@_%.__%');
186
187  ALTER TABLE Staff
188      DROP CONSTRAINT IF EXISTS CK__Staff__Password;
189  ALTER TABLE Staff
190      ADD CONSTRAINT CK__Staff__Password CHECK (Password
     LIKE '[A-Z][A-Z][A-Z][A-Z][A-Z][A-Z][0-9][0-9]');
191
192
193  -- create unique constraint
194  ALTER TABLE "User"
195      DROP CONSTRAINT IF EXISTS UQ__User__Username;
196  ALTER TABLE "User"
197      ADD CONSTRAINT UQ__User__Username UNIQUE (Username);
198
199  ALTER TABLE Staff
200      DROP CONSTRAINT IF EXISTS UQ__Staff__Username;
201  ALTER TABLE Staff
202      ADD CONSTRAINT UQ__Staff__Username UNIQUE (Username);
203
204
205  -- create default constraint
206  ALTER TABLE "User"
207      DROP CONSTRAINT IF EXISTS DF__User__Password;
208  ALTER TABLE "User"
209      ADD CONSTRAINT DF__User__Password DEFAULT ('ABCDEF12'
     ) FOR Password;
210
211
212  ALTER TABLE Staff
213      DROP CONSTRAINT IF EXISTS DF__Staff__Password;
214  ALTER TABLE Staff
215      ADD CONSTRAINT DF__Staff__Password DEFAULT ('ABCDEF12'
     ) FOR Password;
216
217
218  ALTER TABLE Hardware
219      DROP CONSTRAINT IF EXISTS
     DF__Hardware__AcquisitionDate;
220  ALTER TABLE Hardware
221      ADD CONSTRAINT DF__Hardware__AcquisitionDate DEFAULT (
```

```sql
221 GetDate()) FOR AcquisitionDate;
222
223
224 ALTER TABLE Ticket
225     DROP CONSTRAINT IF EXISTS DF__Ticket__StartDate;
226 ALTER TABLE Ticket
227     ADD CONSTRAINT DF__Ticket__StartDate DEFAULT (GetDate
    ()) FOR StartDate;
228
229 ALTER TABLE Ticket
230     DROP CONSTRAINT IF EXISTS DF__Ticket__Status;
231 ALTER TABLE Ticket
232     ADD CONSTRAINT DF__Ticket__Status DEFAULT ('Open') FOR
     Status;
233
234
235 ALTER TABLE Comment
236     DROP CONSTRAINT IF EXISTS DF__Comment__Date;
237 ALTER TABLE Comment
238     ADD CONSTRAINT DF__Comment__Date DEFAULT (GetDate())
    FOR Date;
239
240
241 ALTER TABLE TicketStaff
242     DROP CONSTRAINT IF EXISTS DF__TicketStaff__Action;
243 ALTER TABLE TicketStaff
244     ADD CONSTRAINT DF__TicketStaff__Action DEFAULT ('
    Working on the issue') FOR Action;
245
246
247 -- create indexes to non-key fields used for searching
    records
248 CREATE INDEX IX__User__FirstNameLastName
249     ON "User" (FirstName, LastName DESC);
250
251 CREATE INDEX IX__User__Username
252     ON "User" (Username);
253
254
255 CREATE INDEX IX__Staff__FirstNameLastName
256     ON Staff (FirstName, LastName DESC);
257
258 CREATE INDEX IX__Staff__Username
259     ON Staff (Username);
260
261
```

```
262 CREATE INDEX IX__Hardware__SerialCode
263     ON Hardware (SerialCode);
264
265 GO
266
```