1. Create the authors table with the following columns:

* author\_id as the primary key (integer).
* first\_name (text, not null).
* last\_name (text, not null).
* email (text, unique).

1. Create the books table with the following columns:

* book\_id as the primary key (integer).
* title (text, not null).
* publication\_year (integer, with a check constraint ensuring the year is not in the future).
* author\_id (integer ,foreign key referencing author\_id in the authors table).
* genre (text).

1. Insert the following valid data into the authors table:

* (1, 'J.K.', 'Rowling', 'jk.rowling@hogwarts.ac.uk')
* (2, 'George', 'Orwell', 'george.orwell@allisbad.co.uk')
* (3, 'Tamar', ‘Bornstein-Lazar,'tamarblazar@revivim.co.il')

1. Insert the following valid data into the books table:

* (1, 'Harry Potter and the Sorcerer's Stone', 1997, 1, 'Fantasy')
* (2, '1984', 1949, 2, 'Dystopian')
* (3, 'Kofiko', 1957, 3, 'Fiction')

1. Try inserting the following invalid record into the authors table (with a NULL email):

* Id: 4,
* first name:'Meir'
* last name: 'Shalev'

1. Try inserting a duplicate email into the authors table:

* (5, ‘Margaret’ ,’Atwood ','george.orwell@allisbad.co.uk')

1. Try inserting a book into the books table with a publication\_year in the future (the author is unknown, so it is null):

* (4, ‘The matrix movie came true’, 2029, 'Sci-Fi')

1. Try inserting a book with an invalid author\_id (foreign key violation):

* (5, ‘One Thousand and One Nights’, 801, 999, 'Fiction')

1. Drop the NOT NULL constraint on the email column in the authors table.
2. Try inserting a record with a NULL email column after removing the NOT NULL constraint:

* (6, 'Mark', 'Twain', NULL)

1. Add a CHECK constraint on the email column in the authors table to ensure the email is valide (contains both a “@” and a “.” Somewhere after it).
2. Test the new CHECK constraint by inserting:

* A valid email: (7, 'Andrew', 'Ng', 'andrew.ng@example.com') (by the way Andrew Ng is a very interesting person, you might want to google him later)
* An invalid email: (8, ‘Etgar’, ‘Keret', ‘invalid-email')

1. Try deleting an author (author\_id = 1) who has associated books in the books table (foreign key violation).
2. Drop the foreign key constraint between the books and authors tables. Then Try deleting the same author (author\_id = 1), look at the books table to see what happened.
3. Return the first author to the table (use you insert command from step3).
4. Add the forigen key constraint to the table with the alter command. Include the the ON DELETE CASCADE clause.
5. Try deleting the same author (author\_id = 1) and check the books table to see what happend.