```
CREATE DATABASE library_database;
USE library_database;
CREATE TABLE Author (
  AuthorID INT PRIMARY KEY,
  AuthorFirstName VARCHAR(50) NOT NULL,
  AuthorLastName VARCHAR(50) NOT NULL,
  AuthorNationality VARCHAR(50)
);
CREATE TABLE Book (
  BookID INT PRIMARY KEY,
  BookTitle VARCHAR(100) NOT NULL,
  AuthorID INT NOT NULL,
  Genre VARCHAR(50) NOT NULL,
  FOREIGN KEY (AuthorID) REFERENCES Author(AuthorID)
);
CREATE TABLE Client (
  ClientID INT PRIMARY KEY,
  ClientFirstName VARCHAR(50) NOT NULL,
  ClientLastName VARCHAR(50) NOT NULL,
  ClientDOB DATE NOT NULL,
  Occupation VARCHAR(50)
);
CREATE TABLE Borrower (
  BorrowID INT PRIMARY KEY,
  ClientID INT NOT NULL,
```

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BookID INT NOT NULL,
  BorrowDate DATE NOT NULL,
  FOREIGN KEY (ClientID) REFERENCES Client(ClientID),
  FOREIGN KEY (BookID) REFERENCES Book(BookID)
);
-- Create index on ClientLastName for efficient searching
CREATE INDEX idx_client_lastname ON Client (ClientLastName);
-- Insert data into the Author table
INSERT INTO Author (AuthorID, AuthorFirstName, AuthorLastName, AuthorNationality)
VALUES
(1, 'Sofia', 'Smith', 'Canada'),
(2, 'Maria', 'Brown', 'Brazil'),
(3, 'Elena', 'Martin', 'Mexico'),
(4, 'Zoe', 'Roy', 'France'),
(5, 'Sebastian', 'Lavoie', 'Canada'),
(6, 'Dylan', 'Garcia', 'Spain'),
(7, 'lan', 'Cruz', 'Mexico'),
(8, 'Lucas', 'Smith', 'USA'),
(9, 'Fabian', 'Wilson', 'USA'),
(10, 'Liam', 'Taylor', 'Canada'),
(11, 'William', 'Thomas', 'Great Britain'),
(12, 'Logan', 'Moore', 'Canada'),
(13, 'Oliver', 'Martin', 'France'),
(14, 'Alysha', 'Thompson', 'Canada'),
(15, 'Isabelle', 'Lee', 'Canada'),
(16, 'Emily', 'Clark', 'USA'),
(17, 'John', 'Young', 'China'),
```

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(18, 'David', 'Wright', 'Canada'),
(19, 'Thomas', 'Scott', 'Canada'),
(20, 'Helena', 'Adams', 'Canada'),
(21, 'Sofia', 'Carter', 'USA'),
(22, 'Liam', 'Parker', 'Canada'),
(23, 'Emily', 'Murphy', 'USA');
-- Insert data into the Book table
INSERT INTO Book (BookID, BookTitle, AuthorID, Genre)
VALUES
(1, 'Build your database system', 1, 'Science'),
(2, 'The red wall', 2, 'Fiction'),
(3, 'The perfect match', 3, 'Fiction'),
(4, 'Digital Logic', 4, 'Science'),
(5, 'How to be a great lawyer', 5, 'Law'),
(6, 'Manage successful negotiations', 6, 'Society'),
(7, 'Pollution today', 7, 'Science'),
(8, 'A gray park', 2, 'Fiction'),
(9, 'How to be rich in one year', 8, 'Humor'),
(10, 'Their bright fate', 9, 'Fiction'),
(11, 'Black lines', 10, 'Fiction'),
(12, 'History of theater', 11, 'Literature'),
(13, 'Electrical transformers', 12, 'Science'),
(14, 'Build your big data system', 1, 'Science'),
(15, 'Right and left', 13, 'Children'),
(16, 'Programming using Python', 1, 'Science'),
(17, 'Computer networks', 14, 'Science'),
(18, 'Performance evaluation', 15, 'Science'),
(19, 'Daily exercise', 16, 'Well being'),
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(20, 'The silver uniform', 17, 'Fiction'),
(21, 'Industrial revolution', 18, 'History'),
(22, 'Green nature', 19, 'Well being'),
(23, 'Perfect football', 20, 'Well being'),
(24, 'The chocolate love', 21, 'Humor'),
(25, 'Director and leader', 22, 'Society'),
(26, 'Play football every week', 20, 'well being'),
(27, 'Maya the bee', 13, 'Children'),
(28, 'Perfect rugby', 20, 'Well being'),
(29, 'The end', 23, 'Fiction'),
(30, 'Computer security', 1, 'Science'),
(31, 'Participate', 22, 'Society'),
(32, 'Positive figures', 3, 'Fiction');
-- Insert data into the Client table
INSERT INTO Client (ClientID, ClientFirstName, ClientLastName, ClientDOB, Occupation)
VALUES
(1, 'Kaiden', 'Hill', '2006-01-01', 'Student'),
(2, 'Alina', 'Morton', '2010-02-02', 'Student'),
(3, 'Fania', 'Brooks', '1983-03-03', 'Food Scientist'),
(4, 'Courtney', 'Jensen', '2006-04-04', 'Student'),
(5, 'Brittany', 'Hill', '1983-05-05', 'Firefighter'),
(6, 'Max', 'Rogers', '2005-06-06', 'Student'),
(7, 'Margaret', 'McCarthy', '1981-07-07', 'School Psychologist'),
(8, 'Julie', 'McCarthy', '1973-08-08', 'Professor'),
(9, 'Ken', 'McCarthy', '1974-09-09', 'Securities Clerk'),
(10, 'Britany', 'Quinn', '1984-10-10', 'Violinist'),
(11, 'Conner', 'Gardner', '1998-11-11', 'Licensed Massage Therapist'),
(12, 'Mya', 'Austin', '1960-12-12', 'Parquet Floor Layer'),
```

- (13, 'Thierry', 'Rogers', '2004-01-01', 'Student'),
- (14, 'Eloise', 'Rogers', '1984-02-02', 'Computer Security Manager'),
- (15, 'Gerard', 'Jackson', '1979-03-03', 'Oil Exploration Engineer'),
- (16, 'Randy', 'Day', '1986-04-04', 'Aircraft Electrician'),
- (17, 'Jodie', 'Page', '1990-05-05', 'Manufacturing Director'),
- (18, 'Coral', 'Rice', '1996-06-06', 'Window Washer'),
- (19, 'Ayman', 'Austin', '2002-07-07', 'Student'),
- (20, 'Jaxson', 'Austin', '1999-08-08', 'Repair Worker'),
- (21, 'Joel', 'Austin', '1973-09-09', 'Police Officer'),
- (22, 'Alina', 'Austin', '2010-10-10', 'Student'),
- (23, 'Elin', 'Austin', '1962-11-11', 'Payroll Clerk'),
- (24, 'Ophelia', 'Wolf', '2004-12-12', 'Student'),
- (25, 'Eliot', 'McGuire', '1967-01-01', 'Dentist'),
- (26, 'Peter', 'McKinney', '1968-02-02', 'Professor'),
- (27, 'Annabella', 'Henry', '1974-03-03', 'Nurse'),
- (28, 'Anastasia', 'Baker', '2001-04-04', 'Student'),
- (29, 'Tyler', 'Baker', '1984-05-05', 'Police Officer'),
- (30, 'Lilian', 'Ross', '1983-06-06', 'Insurance Agent'),
- (31, 'Thierry', 'Arnold', '1975-07-07', 'Bus Driver'),
- (32, 'Angelina', 'Rowe', '1979-08-08', 'Firefighter'),
- (33, 'Marcia', 'Rowe', '1974-09-09', 'Health Educator'),
- (34, 'Martin', 'Rowe', '1976-10-10', 'Ship Engineer'),
- (35, 'Adeline', 'Rowe', '2005-11-11', 'Student'),
- (36, 'Colette', 'Rowe', '1963-12-12', 'Professor'),
- (37, 'Diane', 'Clark', '1975-01-01', 'Payroll Clerk'),
- (38, 'Caroline', 'Clark', '1960-02-02', 'Dentist'),
- (39, 'Dalton', 'Clayton', '1982-03-03', 'Police Officer'),
- (40, 'Steve', 'Clayton', '1990-04-04', 'Bus Driver'),
- (41, 'Melanie', 'Clayton', '1987-05-05', 'Computer Engineer'),

- (42, 'Alana', 'Wilson', '2007-06-06', 'Student'),
- (43, 'Carson', 'Byrne', '1995-07-07', 'Food Scientist'),
- (44, 'Conrad', 'Byrne', '2007-08-08', 'Student'),
- (45, 'Ryan', 'Porter', '2008-09-09', 'Student'),
- (46, 'Elin', 'Porter', '1978-10-10', 'Computer Programmer'),
- (47, 'Tyler', 'Harvey', '2007-11-11', 'Student'),
- (48, 'Arya', 'Harvey', '2008-12-12', 'Student'),
- (49, 'Serena', 'Harvey', '1978-01-01', 'School Teacher'),
- (50, 'Lilly', 'Franklin', '1976-02-02', 'Doctor'),
- (51, 'Mai', 'Franklin', '1994-03-03', 'Dentist'),
- (52, 'John', 'Franklin', '1999-04-04', 'Firefighter'),
- (53, 'Judy', 'Franklin', '1995-05-05', 'Firefighter'),
- (54, 'Katy', 'Lloyd', '1992-06-06', 'School Teacher'),
- (55, 'Tamara', 'Allen', '1963-07-07', 'Ship Engineer'),
- (56, 'Maxim', 'Lyons', '1985-08-08', 'Police Officer'),
- (57, 'Allan', 'Lyons', '1983-09-09', 'Computer Engineer'),
- (58, 'Marc', 'Harris', '1980-10-10', 'School Teacher'),
- (59, 'Elin', 'Young', '2009-11-11', 'Student'),
- (60, 'Diana', 'Young', '2008-12-12', 'Student'),
- (61, 'Diane', 'Young', '2006-01-01', 'Student'),
- (62, 'Alana', 'Bird', '2003-02-02', 'Student'),
- (63, 'Anna', 'Becker', '1979-03-03', 'Security Agent'),
- (64, 'Katie', 'Grant', '1977-04-04', 'Manager'),
- (65, 'Joan', 'Grant', '2010-05-05', 'Student'),
- (66, 'Bryan', 'Bell', '2001-06-06', 'Student'),
- (67, 'Belle', 'Miller', '1970-07-07', 'Professor'),
- (68, 'Peggy', 'Stevens', '1990-08-08', 'Bus Driver'),
- (69, 'Steve', 'Williamson', '1975-09-09', 'HR Clerk'),
- (70, 'Tyler', 'Williamson', '1999-10-10', 'Doctor'),

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(71, 'Izabelle', 'Williamson', '1990-11-11', 'Systems Analyst'),
(72, 'Annabel', 'Williamson', '1960-12-12', 'Cashier'),
(73, 'Mohamed', 'Waters', '1966-01-01', 'Insurance Agent'),
(74, 'Marion', 'Newman', '1970-02-02', 'Computer Programmer'),
(75, 'Ada', 'Williams', '1986-03-03', 'Computer Programmer'),
(76, 'Sean', 'Scott', '1983-04-04', 'Bus Driver'),
(77, 'Farrah', 'Scott', '1974-05-05', 'Ship Engineer'),
(78, 'Christine', 'Lambert', '1973-06-06', 'School Teacher'),
(79, 'Alysha', 'Lambert', '2007-07-07', 'Student'),
(80, 'Maia', 'Grant', '1984-08-08', 'School Teacher');
INSERT INTO Borrower (BorrowID, ClientID, BookID, BorrowDate)
VALUES
(1, 35, 17, '2016-07-20'),
(2, 1, 3, '2017-04-19'),
(3, 42, 8, '2016-10-03'),
(4, 62, 16, '2016-04-05'),
(5, 53, 13, '2017-01-17'),
(6, 33, 15, '2015-11-26'),
(7, 40, 14, '2015-01-21'),
(8, 64, 2, '2017-09-10'),
(9, 56, 30, '2017-08-02'),
(10, 23, 2, '2018-06-28'),
(11, 46, 19, '2015-11-18'),
(12, 61, 20, '2015-11-24'),
(13, 58, 7, '2017-06-17'),
(14, 46, 16, '2017-02-12'),
(15, 80, 21, '2018-03-18'),
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(16, 51, 23, '2015-09-01'),

- (17, 49, 18, '2015-07-28'),
- (18, 43, 18, '2015-11-04'),
- (19, 30, 2, '2018-08-10'),
- (20, 48, 24, '2015-05-13'),
- (21, 71, 5, '2016-09-05'),
- (22, 35, 3, '2016-07-03'),
- (23, 57, 1, '2015-03-17'),
- (24, 23, 25, '2017-08-16'),
- (25, 20, 12, '2018-07-24'),
- (26, 25, 7, '2015-01-31'),
- (27, 72, 29, '2016-04-10'),
- (28, 74, 20, '2017-07-31'),
- (29, 53, 14, '2016-02-20'),
- (30, 32, 10, '2017-07-24'),
- (31, 12, 15, '2018-04-25'),
- (32, 77, 13, '2017-06-09'),
- (33, 30, 4, '2017-10-24'),
- (34, 37, 24, '2016-01-14'),
- (35, 27, 26, '2017-06-05'),
- (36, 1, 16, '2018-05-06'),
- (37, 21, 9, '2016-03-19'),
- (38, 69, 28, '2017-03-29'),
- (39, 17, 19, '2017-03-14'),
- (40, 8, 9, '2016-04-22'),
- (41, 63, 18, '2015-01-25'),
- (42, 65, 20, '2016-10-10'),
- (43, 51, 19, '2015-07-28'),
- (44, 23, 12, '2017-01-25'),
- (45, 17, 4, '2017-04-18'),

- (46, 68, 5, '2016-09-06'),
- (47, 46, 13, '2017-09-30'),
- (48, 15, 13, '2017-07-05'),
- (49, 11, 19, '2017-12-14'),
- (50, 78, 15, '2017-01-26'),
- (51, 47, 9, '2015-03-03'),
- (52, 68, 7, '2016-05-26'),
- (53, 37, 26, '2017-02-06'),
- (54, 48, 27, '2015-12-30'),
- (55, 9, 21, '2017-10-21'),
- (56, 29, 8, '2018-04-01'),
- (57, 64, 18, '2017-08-29'),
- (58, 61, 26, '2018-02-21'),
- (59, 39, 28, '2016-07-26'),
- (60, 73, 18, '2018-08-22'),
- (61, 11, 13, '2018-01-17'),
- (62, 45, 6, '2016-07-20'),
- (63, 33, 13, '2018-03-18'),
- (64, 10, 17, '2016-06-06'),
- (65, 28, 18, '2017-02-17'),
- (66, 51, 3, '2016-12-09'),
- (67, 29, 2, '2015-09-18'),
- (68, 28, 30, '2017-09-14'),
- (69, 74, 20, '2015-12-12'),
- (70, 15, 22, '2015-01-14'),
- (71, 57, 8, '2017-08-20'),
- (72, 2, 5, '2015-01-18'),
- (73, 74, 12, '2018-04-14'),
- (74, 51, 10, '2016-02-25'),

- (75, 25, 17, '2015-02-24'),
- (76, 45, 21, '2017-02-10'),
- (77, 27, 25, '2016-08-03'),
- (78, 32, 28, '2016-06-15'),
- (79, 71, 21, '2017-05-21'),
- (80, 75, 26, '2016-05-03'),
- (81, 56, 32, '2015-12-23'),
- (82, 26, 32, '2015-05-16'),
- (83, 66, 32, '2015-05-30'),
- (84, 57, 18, '2017-09-15'),
- (85, 40, 15, '2016-09-02'),
- (86, 65, 4, '2017-08-17'),
- (87, 54, 7, '2015-12-19'),
- (88, 29, 4, '2017-07-22'),
- (89, 44, 9, '2017-12-31'),
- (90, 56, 31, '2015-06-13'),
- (91, 17, 4, '2015-04-01'),
- (92, 35, 16, '2018-07-19'),
- (93, 22, 18, '2017-06-22'),
- (94, 39, 24, '2015-05-29'),
- (95, 63, 14, '2018-01-20'),
- (96, 53, 21, '2016-07-31'),
- (97, 40, 9, '2016-07-10'),
- (98, 52, 4, '2017-04-05'),
- (99, 27, 20, '2016-09-04'),
- (100, 72, 29, '2015-12-06'),
- (101, 49, 16, '2017-12-19'),
- (102, 6, 12, '2016-12-04'),
- (103, 74, 31, '2016-07-27'),

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(104, 48, 32, '2016-06-29'),
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(133, 79, 31, '2018-03-07'),
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(162, 29, 5, '2015-10-18'),
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(191, 70, 13, '2018-02-03'),
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(220, 17, 9, '2018-01-29'),
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(249, 7, 4, '2015-05-01'),
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(278, 44, 22, '2017-04-29'),
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