

Managing Data
Spring 2020
Professor Mneimneh
March 31, 2020

Assignment 4: Cassandra DB

```
CREATE KEYSPACE IF NOT EXISTS library WITH REPLICATION = { 'class' : 'SimpleStrategy',  
'replication_factor' : 3 };  
USE library;
```

--Creation of Tables

```
drop table if exists library.books;  
create table library.books (  
    book_id BIGINT PRIMARY KEY,  
    book_title TEXT,  
    primary_author TEXT,  
    date_publication date,  
    pages INT,  
    publisher TEXT,  
    translator TEXT,  
    topics list<VARCHAR>  
);
```

```
drop table if exists library.checkedout_books;  
create table library.checkedout_books (  
    book_id BIGINT PRIMARY KEY,  
    book_title TEXT,  
    topics list<VARCHAR>,  
    user_id INT,  
    user_name TEXT,  
    checkout_date TIMESTAMP,  
    university_affiliation TEXT  
);
```

```
drop table if exists library.users;  
create table library.users (  
    user_id BIGINT PRIMARY KEY,  
    user_name TEXT,  
    phone_number BIGINT,  
    address TEXT,
```

```
    university_affiliation TEXT  
);
```

--Populating the Tables

```
INSERT INTO library.books (book_id, book_title, primary_author, date_publication, pages,  
publisher, translator, topics)  
VALUES(123456789, 'SuperBat', 'Calvin Davis', '2010-01-01', 1000, 'OxfordPress', 'J.  
Galvan', ['fiction'])  
);
```

```
INSERT INTO library.books (book_id, book_title, primary_author, date_publication, pages,  
publisher, translator, topics)  
VALUES(234567891, 'Practical Python', 'Catherine Johnson', '2011-05-12', 2304, 'ColumbiaPress',  
'R. Ried', ['Software Engineering'])  
);
```

```
INSERT INTO library.books (book_id, book_title, primary_author, date_publication, pages,  
publisher, translator, topics)  
VALUES(345678912, 'Practical Java', 'Micahel Xu', '2012-08-01', 334, 'OxfordPress', 'N.  
Garcia', ['Machine Learning'])  
);
```

```
INSERT INTO library.books (book_id, book_title, primary_author, date_publication, pages,  
publisher, translator, topics)  
VALUES(456789123, 'Practical C', 'Ron Winstead', '2016-09-01', 545, 'OxfordPress', 'K.  
Carrizales', ['Data Science'])  
);
```

```
INSERT INTO library.books (book_id, book_title, primary_author, date_publication, pages,  
publisher, translator, topics)  
VALUES(567891234, 'Practical C++', 'Jordan White', '2000-07-04', 332, 'CambridgeUniPress', 'K.  
Mendiola', ['Software Engineering'])  
);
```

```
INSERT into library.users (user_id, user_name, phone_number, address, university_affiliation)  
VALUES(6745, 'Jason Byrd', 2105788899, 'Houston Street, Dallas, TX', 'Columbia University');
```

```
INSERT into library.users (user_id, user_name, phone_number, address, university_affiliation)  
VALUES(4897, 'Jesse Calbert', 5123456789, 'Broadway Ave, Austin, TX', 'Columbia University');
```

```
INSERT into library.users (user_id, user_name, phone_number, address, university_affiliation)  
VALUES(4134, 'Earl Sosa', 2128796533, 'L Avenue, Fairfax, VA', 'New York University');
```

```
INSERT into library.users (user_id, user_name, phone_number, address, university_affiliation)
VALUES(9867,'Emily Green',2015467823,'Lincoln Ave, Boston, MA', 'Columbia University');
```

```
INSERT into library.users (user_id, user_name, phone_number, address, university_affiliation)

VALUES(2376,'Martin Wilson',3103768866,'Presa Street, El Paso, TX', 'Columbia University');
```

```
INSERT into library.checkedout_books (book_id, book_title, topics, user_id, user_name,
checkout_date, university_affiliation)
VALUES(123456789, 'SuperBat',['fiction'], 2376, 'Martin Wilson','2020-01-10' ,'Columbia
University');
```

```
INSERT into library.checkedout_books (book_id, book_title, topics, user_id, user_name,
checkout_date, university_affiliation)
VALUES(234567891, 'Practical Python',['Software Engineering'], 9876, 'Emily Green','2020-01-
23' ,'Columbia University');
```

```
INSERT into library.checkedout_books (book_id, book_title, topics, user_id, user_name,
checkout_date, university_affiliation)
VALUES(456789123, 'Practical C',['Data Science'], 6745, 'Jason Byrd','2020-02-10' ,'Incarnate
Word University');
```

```
INSERT into library.checkedout_books (book_id, book_title, topics, user_id, user_name,
checkout_date, university_affiliation)
VALUES(567891234, 'Practical C++',['Software Engineering'], 4897, 'Jesse Calbert','2020-02-20'
,'Incarnate Word University');
```

```
INSERT into library.checkedout_books (book_id, book_title, topics, user_id, user_name,
checkout_date, university_affiliation)
VALUES(345678912, 'Practical Java',['Machine Learning'], 41346, 'Earl Sosa','2020-03-02'
,'Columbia University');
```

--Queries

```
SELECT book_title
FROM library.checkedout_books WHERE checkout_date >= '2019-01-15' ALLOW FILTERING;
```

```
SELECT user_id
FROM library.checkedout_books WHERE book_title = 'Practical Python' ALLOW FILTERING;
```

```
SELECT COUNT(*)
FROM library.books WHERE topics contains 'Software Engineering' ALLOW FILTERING;
```

```
SELECT user_id
FROM library.checkedout_books WHERE topics CONTAINS 'Machine Learning' AND
university_affiliation = 'Columbia University'
AND checkout_date >= '2018-01-21' AND checkout_date <= '2020-03-31' ALLOW FILTERING;
```