Exercise 6.5 – Advanced Queries

In this exercise, you will:

- Understand the concept of joining tables multivalued and dynamic fields
- Lists and sets are mapped to search indexes as multivalued fields
- Maps are mapped to search indexes as dynamic fields.

Step 1: Analyzing the tables

Take a look at the tables below. We will be joining *videos* and *actors_by_video* on the *video_id* field. This will allow us to filter on actors' names when creating a list of films that include a particular actor and/or meet other criteria.

Also, note that there are two multivalued fields: *genres* and *tags*. Both are of `type set`. We will be filtering on these fields as well.

```
CREATE TABLE killrvideo_test.videos (
    video_id timeuuid PRIMARY KEY,
    avg_rating float,
    description text,
    genres set<text>,
    mpaa_rating text,
    preview_thumbnail blob,
    release_date timestamp,
    release_year int,
    solr_query text,
    tags set<text>,
    title text,
    type text,
    url text,
    user_id uuid
)

CREATE TABLE killrvideo_test.actors_by_video (
    video_id timeuuid,
    actor_name text,
    character_name text,
    solr_query text,
    PRIMARY KEY (video_id, actor_name, character_name)
)
```

Step 2: Create the index

Create an index on *actors_by_video* so we can actually conduct searches:

```
CREATE SEARCH INDEX ON killrvideo_test.actors_by_video;
```

Step 2: Conducting searches

1. First, let's conduct a search for title and release year of all films starring actor, Jim Carrey.

```
SELECT title, release_year FROM killrvideo_test.videos WHERE solr_query
= '{!join fromIndex=killrvideo_test.actors_by_video}actor_name:"Jim
Carrey"';
```

Notice how the `join` is articulated in the *solr_query* clause and is followed by the filter. You should get the following result:

```
 title                                             | release_year
---------------------------------------------------+--------------
           Eternal Sunshine of the Spotless Mind |         2004
                                Batman Forever |         1995
                                     The Mask |         1994
                                    Liar Liar |         1997
                                 Man on the Moon |         1999
                              Me, Myself & Irene |         2000
                    Ace Ventura: Pet Detective |         1994
                                 The Number 23 |         2007
                            Fun with Dick and Jane |         2005
                         I Love You Phillip Morris |         2009
                How the Grinch Stole Christmas |         2000
                Ace Ventura: When Nature Calls |         1995
                          Peggy Sue Got Married |         1986
                                       Yes Man |         2008
                                  The Dead Pool |         1988
                                   The Majestic |         2001
 Lemony Snicket's A Series of Unfortunate Events |         2004
                             Horton Hears a Who! |         2008
                               A Christmas Carol |         2009
                                     Once Bitten |         1985
                           Mr. Popper's Penguins |         2011
                                      Kick-Ass 2 |         2013
                             Dumb and Dumber To |         2014
              Anchorman 2: The Legend Continues |         2013
```

2. Let's use the character name instead to find the title and release year for the movies with the character "Santa".

```
SELECT title, release_year FROM killrvideo_test.videos WHERE solr_query
= '{!join
fromIndex=killrvideo_test.actors_by_video}character_name:Santa';
```

You should get the following result:

```
 title                                  | release_year
----------------------------------------+--------------
                           Home Alone |         1990
                                  Elf |         2003
                          Santa's Slay |         2005
 The Santa Clause 3: The Escape Clause |         2006
                Ernest Saves Christmas |         1988
                          Yes, Virginia |         2009
```

3. Now using the queries above as examples, write the following queries. Answers are on the next page.

    a. Generate a list of actors that were in movies released in 1999 or 2000.

    b. Generate a list of actors that were in G rated movies released in 2015.

    c. Generate a list of films with the word Star in the title and that have both Action and Adventure as a genre. You may need to use parenthesis for multiple parameter values.

    d. Generate a list of films with the word Star in the title and that have either Action or Adventure as a genre. You may need to use parenthesis for multiple parameter values.

Answers:

```
SELECT actor_name FROM killrvideo_test.actors_by_video WHERE solr_query
= '{!join fromIndex=killrvideo_test.videos}release_year:[1999 TO
2000]';

SELECT actor_name FROM killrvideo_test.actors_by_video WHERE solr_query
= '{!join fromIndex=killrvideo_test.videos}mpaa_rating:G AND
release_year:2015';

SELECT title FROM killrvideo_test.videos WHERE solr_query = 'title:Star
AND genres:(Action AND Adventure)';

SELECT title FROM killrvideo_test.videos WHERE solr_query =
'title:"Star" AND genres:(Action OR Adventure)';
```