Question 1

The relational database `moviedb` has the following database schema:

MOVIE(title, production_year, country, run_time, major_genre)
       `primary key` : {title, production_year}

PERSON(id, first_name, last_name, year_born)
       `primary key` : {id}

AWARD(award_name, institution, country)
       `primary key` : {award_name}

RESTRICTION_CATEGORY(description, country)
       `primary key` : {description, country}

DIRECTOR(id, title, production_year)
       `primary key` : {title, production_year}
       `foreign keys` : [title, production_year] ⊆ MOVIE[title, production_year]
                         [id] ⊆ PERSON[id]

WRITER(id, title, production_year, credits)
       `primary key` : {id, title, production_year}
       `foreign keys` : [title, production_year] ⊆ MOVIE[title, production_year]
                         [id] ⊆ PERSON[id]

CREW(id, title, production_year, contribution)
       `primary key` : {id, title, production_year}
       `foreign keys` : [title, production_year] ⊆ MOVIE[title, production_year]
                         [id] ⊆ PERSON[id]

SCENE(title, production_year, scene_no, description)
       `primary key` : {title, production_year, scene_no}
       `foreign keys` : [title, production_year] ⊆ MOVIE[title, production_year]

ROLE(id, title, production_year, description, credits)
       `primary key` : {title, production_year, description}
       `foreign keys` : [title, production_year] ⊆ MOVIE[title, production_year]
                         [id] ⊆ PERSON[id]

RESTRICTION(title, production_year, description, country)
       `primary key` : {title, production_year, description, country}
       `foreign keys` : [title, production_year] ⊆ MOVIE[title, production_year]
                         [description, country] ⊆ RESTRICTION_CATEGORY[description, country]

APPEARANCE(title, production_year, description, scene_no)
       `primary key` : {title, production_year, description, scene_no}
       `foreign keys` : [title, production_year, scene_no]⊆SCENE[title, production_year, scene_no]
                         [title, production_year, description]⊆ROLE[title, production_year, description]

MOVIE_AWARD(title, production_year, award_name, year_of_award, category, result)
       `primary key` : {title, production_year, award_name, year_of_award, category}
       `foreign keys` : [title, production_year] ⊆ MOVIE[title, production_year]
                         [award_name] ⊆ AWARD[award_name]

CREW_AWARD(id, title, production_year, award_name, year_of_award, category, result)
       `primary key` : {id, title, production_year, award_name, year_of_award, category}
       `foreign keys` : [id, title, production_year] ⊆ CREW[id, title, production_year]
                         [award_name] ⊆ AWARD[award_name]

WRITER_AWARD(id, title, production_year, award_name, year_of_award, category, result)
      primary key : {id, title, production_year, award_name, year_of_award, category}
      foreign keys : [id, title, production_year] ⊆ WRITER[id, title, production_year]
                            [award_name] ⊆ AWARD[award_name]

ACTOR_AWARD(title, production_year, description, award_name, year_of_award, category, result) max
      primary key : {title, production_year, description, award_name, year_of_award, category}
      foreign keys : [award_name] ⊆ AWARD[award_name]
                            [title, production_year, description] ⊆ ROLE[title, production_year, description]

There are five different categories of awards: movie awards, crew awards, director awards, writer awards and actor awards. A movie can only win an award after being nominated for the award.

Your task is to answer the following questions using SQL queries. For each question, your answer must be a *single SQL query* that may contain subqueries, and you must write your answers into the template file `myqueries.sql`.

1.1 How many drama movies (i.e., the major genre of the movie is drama) are produced in New Zealand? List that number.   (2 Marks)

1.2 Which movies are classified as "Btl" in Sweden? List their titles and production years, and order them in the descending order of their production years.   (2 Marks)

1.3 Which countries have at least three restriction categories? List these countries along with the corresponding number of restriction categories.   (2 Marks)

1.4 Which movies have won at least one director or writer award? List their titles and production years. (2 Marks)

1.5 For all movies produced in Germany, list their title, production year and the age of the director when the movie was produced. (Hint: if a movie is produced in 1994 and its director was born in 1940, then the age of the director when this movie was produced is 1994 - 1940 = 54)   (2 Marks)

1.6 What is the largest number of crew members working in a single movie? List that number.   (2 Marks)

1.7 Which directors have collaborated with at least two different writers? List the ids, first and last names of these directors, and order them in the ascending order of their last names. (Hint: a director is considered to collaborate with a writer if the director directed a movie written by the writer).   (2 Marks)

1.8 How many movies are written by a single writer? List that number. (Hint: a movie may be co-written by multiple writers but this question asks for movies written by only one writer).   (2 Marks)

1.9 Among those directors who have never won any director award, who directed the largest number of movies? List their ids.   (2 Marks)

1.10 Which directors have starred in every movie directed by themselves? List their ids, first names and last names. (Hint: a person is considered to star in a movie if this person plays at least one role in this movie)   (2 Marks)