

Here are some relations that exist in a database for a symphony.

Person(email, name, age)

- This relation stores anyone who has signed up for our mailing list. Tuples in this relation may not be listed in Purchase.

Show(id, year, month, date, showing, attendanceNumber)

- Showing describes whether a show was during morning, afternoon, or evening

Song(composer, title)

SongsPerformed(showID, composer, title)

- showID is a foreign key referring to Show
- composer and title are foreign keys referring to attributes of the same name in Song

Purchase(email, showID, price)

- email is a foreign key referring to the email attribute in Person
- showID is a foreign key referring to Show

Musician(id, name, instrument, position, nationality)

PerformedIn(id, showID)

- id refers to the attribute of the same name in Musician
- showID is a foreign key referring to Show

Write **Datalog** statements to answer the following questions:

1. Find the year, month, date, and attendance numbers of all shows that had a Canadian musician perform in it.
2. Find the showIDs of shows where the symphony performed songs by Mozart and Beethoven.
3. Find the showIDs of shows where the symphony performed at least one song by Mozart or Beethoven.
4. Find the songs that have been performed by every violinist in the orchestra. You can safely assume that if a musician is performing in a show, they will play every song in that show.