Solutions to Graph Database Exercises

Exercises: Write the queries for the following:

1. Finds all the Shakespeare performances at Newcastle's Theatre Royal.

```
MATCH (theater:Venue {name:'Theatre Royal'}),
      (newcastle:City {name:'Newcastle'}),
      (bard:Author {lastname:'Shakespeare'}),
      (newcastle)<-[:STREET|CITY*1..2]-(theater)
          <-[:VENUE]-()-[:PERFORMANCE_OF]->()
          -[:PRODUCTION_OF]->(play)<-[:WROTE_PLAY]-(bard)
RETURN DISTINCT play.title AS play
```

2. Finds all the Shakespeare performances at Newcastle's Theatre Royal after 1608.

```
MATCH (theater:Venue {name:'Theatre Royal'}),
      (newcastle:City {name:'Newcastle'}),
      (bard:Author {lastname:'Shakespeare'}),
      (newcastle)<-[:STREET|CITY*1..2]-(theater)
        <-[:VENUE]-()-[:PERFORMANCE_OF]->()
        -[:PRODUCTION_OF]->(play)<-[w:WROTE_PLAY]-(bard)
WHERE w.year > 1608
RETURN DISTINCT play.title AS play
```

3. How many Shakespeare performances were at Newcastle's Theatre Royal?

```
MATCH (theater:Venue {name:'Theatre Royal'}),
      (newcastle:City {name:'Newcastle'}),
      (bard:Author {lastname:'Shakespeare'}),
      (newcastle)<-[:STREET|CITY*1..2]-(theater)
        <-[:VENUE]-()-[:PERFORMANCE_OF]->()
        -[:PRODUCTION_OF]->(play)<-[w:WROTE_PLAY]-(bard)
RETURN count(play)
```

4. Rank plays by number of performances.

```
MATCH (theater:Venue {name:'Theatre Royal'}),
      (newcastle:City {name:'Newcastle'}),
      (bard:Author {lastname:'Shakespeare'}),
      (newcastle)<-[:STREET|CITY*1..2]-(theater)
        <-[:VENUE]-()-[p:PERFORMANCE_OF]->()
        -[:PRODUCTION_OF]->(play)<-[:WROTE_PLAY]-(bard)
RETURN play.title AS play, count(p) AS performance_count
ORDER BY performance_count DESC
```

5. Find the plays written by Shakespeare, and order them based on the year in which they were written. (**HINT:** Use WITH and collect())

```
MATCH (bard:Author {lastname:'Shakespeare'})-[w:WROTE_PLAY]->(play)
WITH play
ORDER BY w.year DESC
RETURN collect(play.title) AS plays
```