1) What is the matrix represented by:

```
matrix = {(2, 4): 3, (1, 2): 8, (0, 1): 1}
```

2) How do we print this matrix?

3) What other tables can we represent in this manner?
4) Suppose we have the following movies and information about the movies:

Blade Runner 2049 Released in 2017 Director Denis Villeneuve Actors: Harrison Ford, Ryan Gosling, Ana de Armas . . .

The Fugitive Released in 1993 Director Andrew Davis Actors Harrison Ford, Tommy Lee Jones, Sela Ward

The Big Short Released in 2015 Director Adam McKay Actors: Christian Bale, Steve Carell, Ryan Gosling

How might we represent this data in a program?

5) Suppose we have the following data:

actors = [{'name': 'Harrison Ford'}, {'name': 'Ryan Gosling'}, {'name': 'Tommy Lee Jones'}, . . .]

We’d like to add the actors credits to the dictionary corresponding to the actor and also keep track of how many movies they’ve starred in. Write a program to do this.
6) Challenge: Now suppose we have information on various users of a service that have watched certain movies. How might we represent that data. Write a program to use that data to suggest other movies for a user to watch.