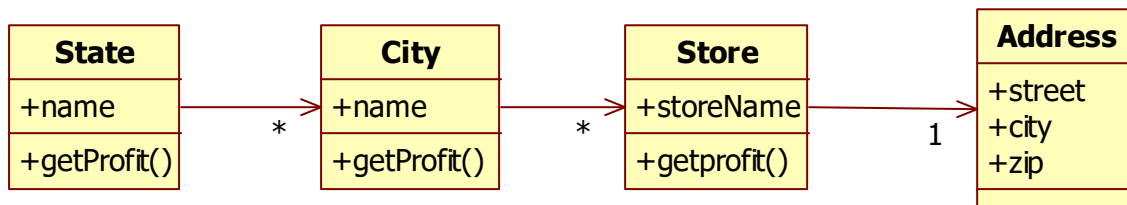


### Question 3 {15 minutes}

Suppose we have to design an application that computes the profit for a retailer. The retailer has stores across the country. In some big cities this retailer can have multiple stores. The application should allow us to give the profit for every store, city or state.

At the moment we designed the application as follows:



But now the retailer is opening stores worldwide and the application should also allow us to give the profit for every country, continent and even region. A region can be anything, like West Chicago, Iowa and Ohio, East Europe, Europe and Asia, Boston, California, etc. When the application shows the profit on the GUI, it does not only show the total profit, but it also shows how the total profit is build up per region, continent, country, state, city and store if applicable.

Draw the class diagram of your design. Show all necessary classes, attributes, methods and relationships. On all relationships, show the necessary multiplicity. Make sure that your design follows the design principles we studied in this course.