# Quiz 3
This quiz consists of **two** questions.

**1.** Consider a travel agency database with the following tables:

> customer (<u>customer_id</u>, first_name, last_name, cc_type, cc_number)
> itinerary (<u>itinerary_id</u>, itinerary_name, start_date, price)
> city (<u>city_id</u>, city_name, country_name)
> city_in_itinerary (<u>city_id</u>, <u>itinerary_id</u>)
> site (<u>site_id</u>, site_name, city_id)
> order (<u>customer_id</u>, <u>itinerary_id</u>)

Note that an itinerary can include visits to several cities and the cities are linked to itineraries using the city_in_itinerary table.

Please write an SQL query that answers the following question: *What are the names of customers who ordered itineraries that include a visit to a city where one can see a site called "The Kremlin"?*

```
select customer.first_name, customer.last_name
from customer
    join order using (customer_id)
    join city_in_itinerary using (itinerary_id)
    join site (city_id)
where site.site_name = "The Kremlin";
```

Note: We do not need to join city and itinerary tables. They do not contain any information that we need and we do not need them for linking the tables that we are interested in. The order table gives us itinerary_ids for each customer, we can then use those to join city_in_itinerary (using itinerary_id) to get city_ids for the cities that customers are going to be visiting. This is then enough for us to join site (using city_id). If you included those extra tables, the result returned by the database would still be correct, but you would be creating more work for yourself and for the database.

**2.** What does it mean when we say that a table is in a "3$^{rd}$ Normal Form"? *Please write your answer on the other side of the sheet. Your answer should assume that the reader does not know what the 1$^{st}$ and the 2$^{nd}$ normal forms are either. If you are going to use a term like "functionally determines" then you should explain what it means.*

Please see the book. I accepted a wide variety of answers.