Question 1 (6 points)

Please design a relational database to manager technical support operations
based on the following business requirements.

1) Users from many different locations call the call center to request
technical assistance.
2) A technical support ticket based on one of the standard ticket templates
is opened to track a request.
3) The ticket is assigned to a technician.
4) Management wants to know where a request originates so that the technical
support resources can be best deployed.
5) There are eight different work shifts. A technician works one of these
shifts. The shift history for technicians needs to be tracked.

Normalize the design to the 3rd normal form. Create the ERD in your design
tool. Submit the ERD either in the PDF format or as an image.

Question 2 (2 points)

Our data usage pattern is to look up a sales territory and find out all states included in it. Please
use the embedding design technique to design a MongoDB database reflecting the data
provided below. Submit a screenshot of the created document(s).

TerritoryID	TerritoryName	State
5	Southeast	Alabama
5	Southeast	Florida
5	Southeast	Georgia
5	Southeast	Kentucky
5	Southeast	Mississippi

```
-- Question 3 (4 points)

/*
Using AdventurWorks2008R2, write a query to return the yearly sales
of each product. Use UnitPrice and OrderQty in SalesOrderDetail to
calculate the yearly sales of a product. Return only the products
which were included in fewer than five small orders in the same year.
A small order has a TotalDue value < $50,000.

Include the ProductID, Year, YearlySales, and "small order count"
columns in the returned data. Sort the returned data first by
ProductID, then by Year.
*/




-- Question 4 (3 points)

 /* Using AdventurWorks2008R2, write a query to retrieve the top
   3 salespersons who have also sold products that were shipped to
   more than 10 states/provinces. Exclude orders which don't have
   a salesperson specified for this query.

   Use TotalDue in SalesOrderHeader for calculating the total sales.
   The top 3 salespersons have the 3 highest total sales amounts.
   Use ShipToAddressID in SalesOrderHeader to determine what
   state/province a product was shipped to. If there is a tie,
   your solution must retrieve it.

   Include SalespersonID, Salesperson's lastname and firstname,
   total sales amount, and the number of unique states/provinces
   the salesperson's sold products were shipped to in the returned
   data. Sort the returned data by SalespersonID. */
```