

**DAMG 6210 SP 22 Online Last Digit of NUID 3, 4 or 5**  
**Please write your NUID and name in all submitted files**

-- Question 1 (6 points)

The Wang Seafood sells frozen lobster and crab meat online. Please design a relational database to help it manage its booming business based on the following requirements. Normalize the design to the 3rd normal form.

- 1) Maintain an inventory of lobster and crab meat for sale
- 2) All inventory items are coded with a category ID
- 3) The details of a category need to be stored in the database
- 4) Track customers
- 5) Track orders
- 6) Store invoices. An invoice has details about a sale that an order doesn't have, such as the total sale amount with taxes added.
- 7) Ship the purchased meat to a customer

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
1	Northwest	Hawaii
1	Northwest	Idaho
1	Northwest	Montana
1	Northwest	Nevada
1	Northwest	Oregon

-- Question 3 (4 points)

```
/*
Using AdventureWorks2008R2, write a query to return the quarterly sales
of each year for products in black. Return only the quarters in which
the total sales for products in black was greater than 50000 in the
same quarter.

Include the Year, Quarter, "Total Quarterly Sales for all products
regardless of the color in the quarter", and "total sales of products
in black for the quarter" columns in the returned data.
Sort the returned data first by Year, then by Quarter.

Use UnitPrice and OrderQty in SalesOrderDetail for calculating the black
product sales. Use TotalDue in SalesOrderHeader for calculating the
total sales.
*/
```

-- Question 4 (3 points)

```
/* Using AdventureWorks2008R2, write a query to retrieve the top
3 product colors which have also been sold to more than 68
states/provinces. The top 3 product colors have the 3 highest
total sales values. Use UnitPrice and OrderQty in SalesOrderDetail
for calculating a product color's total sales value. Exclude
products which don't have a color specified for this query.

Use ShipToAddressID in SalesOrderHeader to determine what state/province
a product color was sold to. If there is a tie, your solution
must retrieve it.

Include Product color, number of unique states/provinces a product color
was sold to, total sales amount of a product color in the returned data.
Sort the returned data by color. */
```