

Last NUID digit: 0, 1, 2, 4 or 9

Please include your NUID and name in all submitted files.
You can use any ERD design program of your choosing.
Use AdventureWorks2008R2 for the SQL questions.

Question 1 (8 points)

Wang Consulting offers free consulting services to nonprofit organizations. Please design a relational database to support its recruiting operations based on the business requirements listed below. Normalize your design to the 3rd Normal Form.

- 1) Applicants need to be tracked.
- 2) An applicant's skills must be tracked.
- 3) Skills are all coded. A skill has a standard code, but details about it is also stored in the database.
- 4) Track interviewers who interview applicants.
- 5) An applicant's interview history must be tracked. To be more specific, management wants to know what interviewer(s) have met with an applicant.
- 6) Track the offer an applicant receives.
- 7) There are standard offer packages. A successful applicant will be extended one of the packages.
- 8) All offer packages are coded. The details of a package need to be tracked.

Create the ERD in your design tool. Submit the ERD in the PDF format or as an image.

Question 2 (3.5 points)

/* Write a query to retrieve the product colors which have been sold in all months of all years as reflected by the data stored in the database. To be more specific, if there was any sale in a month, the product color was sold in that month. The number of months must be calculated and cannot be hard coded.

Include the color, unique customers the color has been sold to, and number of months a color has been sold in for the returned data.

Return only the colors which have been sold to more than 4000 unique customers altogether and exclude the products which didn't have a color specified in this query.

Sort the returned data by the product color. */

Question 3 (3.5 points)

/* Write a query to retrieve the products which are within top 10 for both the total sales dollar amount and the number of the states/provinces it has been sold to. Use UnitPrice and OrderQty for calculating a product's total sales dollar amount. Use ShipToAddressID in SalesOrderHeader to determine what state/province a product was sold to. The state/province is a part of an address.

Include only products which have never been contained in a small order
A small order has the TotalDue value < 1000.

Include ProductID, number of unique states/provinces a product was sold to, total sales dollar amount of a product, and product name in the returned data. Format the total sales amount as an integer. Sort the returned data by ProductID. */