**Case Study**

Bob owns a small company called Bob’s Home Repairs. He does the small home repair jobs that the large companies pass by.

**Here is how the business works:**

A customer calls Bob and asks him to bid on a home repair. He drives over, looks at the situation, and provides the customer with a bid. The bid is based on the repair (he bills by the hour), how much material will be needed and the overall cost.

A customer can have more than one bid and a bid is for only one customer.

If the customer accepts the bid Bob starts on the repairs. One bid can have many repairs and a repair belongs to only one bid.

A repair requires lots of different material and the material Bob uses for a repair belongs to only that repair. Bob does not reuse material for different repairs. This makes the billing for the repair much easier for Bob.

Bob is selective on where he purchases material for a repair. For example, Bob only purchases nails and lumber from Home Depot he doesn’t purchase nails and lumber from other suppliers. Thus, one supplier can provide many different materials but the material is only provided by one supplier.

Suppliers (such as Home Depot) allow Bob to purchase material on credit. Bob makes monthly payments to each supplier based on the minimum monthly amount due. One supplier can have multiple payments but the payment belongs to only one supplier.

Bob doesn’t bill his customers until the work is complete. Bob allows his customers to make monthly payments on the total amount. Customers can have many payments but the payments are to only one customer.

Currently, all business records are kept in Bob's head and in one file cabinet. This doesn’t allow Bob to scale his business because he is busy with manual bookkeeping. So, he wants to computerize these elements of the business to make things more efficient. Can you help him?

**An outstanding project will have the following characteristics, with lower grades for projects that lack these things:**

• The E-R diagram that clearly identifies the entities, relationships, and attributes. (This will be due Week 6)

• The tables that align to your E-R diagram that are in third normal form, using good names for the tables and the fields. All tables are populated with data. All appropriate primary and foreign keys are added to your tables and match the E-R diagram. (This will be due Week 8)

• The five SQL queries that are executed against your completed tables. (This will be due Week 10)

• The entire package is organized in a single Word document for easy viewing and editing, with diagrams and scripts copied into the Word document. Add any appropriate verbiage to help structure and organize your package. Include an introduction letter to Bob including details on the project. You need to format this package as a final software package for Bob.

**Here is what you don't need to do:**

1. You don't need to computerize the entire business, just the processes that Bob finds most bothersome.
2. You don't need to create forms for data entry. This is something you would do if hired as a consultant.