Draw (i.e., a picture of) a database for the situation below. Your diagram should depict whatever database organization is most meaningful to you; please include enough words to explain what each part of your diagram represents. Use whatever notation you wish, but provide a notation legend so that others can interpret your diagram. Assume you are head of Customer Service & Sales.

Bloomington Controls (BC) is a $5M manufacturer of components and systems for the heating and air conditioning industry. BC has been in business for twenty years and has a base of approximately 2000 customers. Thirty to fourty customer orders are received every day: a backlog of 200 orders is not uncommon (i.e.; outstanding, unfilled at end of each day). Exhibit 1 is a sample copy of BC's order acknowledgement and invoice form. Bracketed fields represent additional data only appearing on the invoice; the invoice quantity field denotes the quantity actually shipped and billed for that invoice (which may be less than that ordered due to stockouts or scrapped production).

Close to 30% of all orders require multiple shipments; i.e., partial shipments are frequent due to stockouts or customer wishes to receive all that is available as soon as it is available. Any order or shipment may include multiple line items (i.e., requests for individual BC products). BC sells replacement parts, components and complete control systems. Final (stock) inventory of products is now maintained manually on bin cards (Exhibit 2 represents a sample card).

BC's customers are often analyzed according to their location in a region or territory. Many of BC's customers are agents or distributors; consequently, many shipping addresses may be associated with a single billing customer. Further, BC likes to keep track of customers which are divisions or subdivisions of a parent (customer) firm. For example, several divisions of General Electric are BC customers.

BC's products can be (price) discounted due to agreements with individual customers. Because of frequent billing and shipping questions, both completely shipped (called closed) orders and unfilled or partially shipped (called open) orders must be readily accessible; the closed orders should be readily accessible for one year after final shipment. BC frequently takes orders by telephone, which typically requires providing stock status information to the customer.