# Project Summary

Pine Valley Furniture Company, a small manufacturer of case goods furniture, requires an agile database to assist with the management of business operations. Due to Pine Valley’s continued annual growth the database must be flexible and scalable to account for continuous changes to the customer base. After a careful analysis of the Pine Valley Furniture Company’s business processes identified many requirements that the database must be able to support including customer tracking and account management, manufacturing process flows, order tracking, inventory management, capacity planning and Invoicing. The database must have a friendly user-interface for the data entry clerk and have the capability to produce several weekly reports for management. After Pine Valley’s requirements were analyzed, we took the following steps to design a database to enable Pine Valley to more efficiently and effectively store, process, and retrieve data daily. All possible company transactions that could occur within and external to the organization were considered.

First, a list of required entities was developed from Business Operations Analysis document. Next, a list of relationships between the entities was determined and the structural constraints on those relationships was defined. These entities and structural constraints were the inputs into the initial Entity Relationship Diagram (ERD). Our group studied the functional dependencies in the ERD and looked for opportunities to refine the initial tables using Normalization rules. Several tables were decomposed to prevent anomalies and a final ERD was developed. Using the final ERD, we were able to develop the schemas with primary and foreign keys identified. The Data Dictionary was then created to identify each entity’s domain data type and null constraints. Using this metadata, we were able to develop the SQL statements needed to create the database tables. Finally, the tables were populated with Pine Valley’s customer and business data and sample runs were produced to test the database structure and design and validate functionality.

This database should satisfy Pine Valley Furniture Company’s current business requirements and be scalable to respond to their ever growing customer portfolio.