The topic of this project is to implement a warehouse manager program which creates a list of warehouses that the user is currently managing. The user can then do numerous activities on the warehouses such as change the size or update inventory, as well as add workers and modify their wage or hours. This program could be the base for a more complex management system that stores the values over a longer amount of time.

This project utilizes the programming concepts of encapsulation, inheritance, abstract classes, exception handling, and file operations. In the case of encapsulation, the Building, Warehouse, Person, and Worker classes all contain private variables that can only be accessed through methods within that class. For example, in the Building class, there is the static integer variable numBuildings that represents the number of buildings that have been created. This variable can only be modified by the functions within the Building class and nothing else outside. For inheritance and abstract classes, the Building and Person classes are both abstract classes which are parent classes to the Warehouse and Worker classes respectively. The Warehouse class is a type of building and as such it builds off of the Building class. The Worker class is a person and thus it gives a person a wage and hours worked. In the test program, there are three methods that use exception handling. The isInteger and isDouble methods use the try-catch statement to see if the inputted string is a numeric value or not. The catch block then catches a NumberFormatException if it is not, and then prompts the user to input a numerical value only. The third method, printOutput, catches an IOException and then drops it without handling the error. The printOutput method also utilizes the try-catch block to automatically close the output streams to avoid potential data loss. The file operations also occur within printOutput, whenever the user wants to exit to program, they enter a 0, which the program then class printOutput. Then using FileWriter, BufferedWriter, and PrintWriter, the program outputs to “Warehouse.txt” the attributes of each warehouse.