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Final Report

Top Electronic Fasteners Database

**Introduction**

Top Electronic Fasteners is a full-service stocking distributer of standard, semi-standard and custom fasteners. The company also sells an assortment of electronic hardware and related components. Top Electronics serves many industries including Aerospace, Industrial, Telecom/Networking, and electronic hardware. This company sells massive amounts of parts to other companies in the listed industries. I personally know the owner and have helped him with various tasks when help is needed.

**Problem**

This type of business involves tons of information. This includes the endless number of parts in the catalog that is available for purchase. Other information includes the suppliers, the invoices, the inventory, and the customers. The current way of managing the data in the company involves many different locations for different aspects of the business. This causes slow information gathering and difficulty finding data quickly and efficiently. As are many business owners who love the ‘old school’ ways of keep records, finding a solution that will be simple enough for the business to transfer to but also insightful enough to be more beneficial than the current applications used throughout the company.

**Related Applications**

The current software that is being used throughout the company is Computer Insights. This software is used to keep records but mainly used for storing invoices for accounting purposes. When doing some research on the subject as well as talking to the owner Top Electronics, the UI is outdated and clunky. There are things that he wishes that the owner wishes that the software would do. Though this software is very capable, it does not have functionality that specifically designed for how Top Electronics works. Through the software, you can output order reports to filter through the orders which specific parameters. The owner of Top electronics enjoys this functionality but again wishes that it was more tailored to problems that his business would face and want to filter with.

There are other software systems that have tried to use but the functionality did not have inputs that were tailored to the company’s day to day needs.

**Solution**

The solution was a full database created for Top Electronics. This database that was made was created specifically for all of the information that needs to be stored and organized throughout Top Electronics. This database goes along with a python interface where any user with the code will be able to show data, filter through data, add data, as well as export useful reports that will be specific to the company. The database is stored on Google Cloud which will be able to keep up with all the records that Top Electronics may need.

**Results**

In order to use the database an account needs to be made on the Google Cloud account. This includes creating a name for your account as well as adding your specific IP address so not everyone will be able to add and delete from the database. The database includes 5 tables as well as a view. The first table includes all the suppliers and their contact information as well as what country the company is from. The next table is all of the parts that are available on their catalog including their name weight and references the supplier that supplies the part. The next table are the employees currently hired for the company and their email. The fourth table I have is the Customer table which includes their contact information, their address to send shipments to, as well as how many orders they have ordered. The final table includes all of the invoices, this references the part that they are ordering, the quantity, date, if it has been fulfilled or not, as well as referencing the employee who took the order as well as the customer who made the order. These five tables can be looked at, managed, and edited using the python interface.

The first functionality of the program includes displaying the tables. This shows all the attributes of each of the tables displayed in a readable format. This will be useful for employees who need to understand the database and what is able to be stored on it.

The second functionality includes filtering through the data in the tables. This is able to do filters from any table. This will include any filters that will be needed in the business. Some filters may include parts from a certain suppler, all the unfulfilled orders, and orders from a specified part.

The next functionality is creating new records. This includes creating new records for any table in the database. This also includes creating the references to other tables in the database to upkeep the integrity of the databse.

The next functionality in the program is editing any records. This could include fulfilling order invoices, changing parts to the catalog, or changing what supplier supplies a certain part.

Another functionality that is included is deleting records. This program takes advantage of soft delete in case anyone accidently deletes a record. When displaying the data anywhere else, the ‘deleted’ records will not show, but act as if it were deleted.

The last functionality includes exporting data to .csv files. There are some pre-made options that are relevant to the business and what it needs. The user can export all the unfulfilled orders, all of the invoices that require parts from a certain country, as well as a list of its most valuable customers to know who to prioritize.

The database makes use views that show all the unfulfilled orders so that users can easily access all the orders that have yet to be fulfilled. The database also includes indexes for the supplier’s country. This is because the supplier’s country is used many times throughout the program, and this will make the program work much faster when the tables are handling much more data in the future.

This program is very easy to use and intuitive. The program walks the user through every step and asks intuitive questions for each field. There is error handling throughout the program so if someone does happen to input something wrong, the program can handle it.

**Schema**

A screenshot of a computer

Description automatically generated with medium confidence

The schema shows in depth each table as well as the variables included in each. As you can see, each table has an ‘isDeleted’ variable to know which records are deleted without actually deleting them.