INTRODUCTION TO DATABASES

CMPT-110 RONNIE P. KUPFER SUMMER 2014

AMATEUR RADIO OPERATION IN MAINE





OVERVIEW

This final project is a database of aspects of the amateur radio hobby in Maine.

- It contains the following data:
  - Amateur radio repeaters
  - Amateur radio transceivers
  - All the licensed amateur radio operators in the state
  - Towns & population
  - Counties & population
- The data is organized in multiple tables with multiple relationships
- The data is presented to the user in multiple forms with graphs and reports

FORMS

The database contains the following four forms:

- Transceivers – A convenient form for entering transceiver data and viewing existing records.

- Average Price Of D-STAR vs Non D-STAR Radios – A form with a graph comparing the cost of D-STAR capable radios versus standard non D-STAR capable radios. This comparison was done because one of the contentions amongst amateur radio hobbyists about adopting D-STAR is that the radios are more expensive. My analysis shows this to be mostly true.

FORMS

- Average Price Of Transceivers By Manufacturer And Type – A form with a graph that compares the prices of radios by type and manufacturer to see if one manufacturer tends to offer better prices.

- Number Of Amateur Radio Operators vs County Population – A form with a graph by county showing the number of licensed amateur radio operators per county compared to the general population.

REPORTS

The database contains the following four reports:

- Maine Repeaters – A report that contains all the repeaters in Maine with all the information needed to use the repeaters.

- Transceivers – A report of all the transceivers (radios) made for the amateur radio community by the “Big Three” manufacturers in the amateur radio world…Icom, Kenwood, and Yaesu.

REPORTS

- Radios For Repeater – A short report generated from the Many-To-Many table (RepeatersRadios).

- Maine Amateur Radio License Holders – A report that lists all the licensed amateur radio operators in the state by county and town.

TABLES

- The database contains many tables used to generate the reports and tables. The most important six tables have buttons on the Main Form.
  - The following tables have buttons on the Main Form:
    - Maine Amateur Licenses
    - Maine Repeaters
    - Transceivers
    - Maine Towns And Populations
    - Population Of Maine Counties
    - Repeaters Radios Composite Table (Many-To-Many table)

CHALLENGES

The creation of this database had several challenges that I did not anticipate and resulted in this database taking a very long time to create, even if it doesn't look like it took a very long time.

Some of the challenges were:

- Large quantities of data – The list of Maine licensed amateurs was created from a listed downloaded from the Federal Communications Commission (FCC). That original downloaded list was a list of all licensed amateurs in the country…over 1 million records.

CHALLENGES

- Data manipulation – In order to get the data from the FCC, the census town/county/population data, and the repeater data into a format that could be used efficiently and properly in Access required significant data manipulation and correction.
  - For instance the zip codes from the FCC all imported without the 0 in as the first number and some of the zip codes were in nine number format while others were in five number format. After a lot of research I used some SQL language to update all the records to have the 0 in front and to only have the first five numbers form the five number zip code format. I had to write many SQL codes to update many challenging situations similar to that.

CHALLENGES

- Spelling errors – I was at the mercy of other peoples' spelling mistakes that took a long time to correct where needed.
  - For instance when I needed to match cities in one table to cities in another so I could replace the city name in one of the tables with a CityID, many of the cities did not match due to misspellings or variations in spelling (such as So Portland instead of South Portland). There were many localities that people listed on their license that didn't match census data because the location was a hamlet of a bigger town.

RESULTS

Despite the challenges of creating this database the results met the proposal of the database.

One is able to look through the database fairly quickly and determine/view:

- Relative pricing between manufacturers
- The number of licensed amateurs compared to the general population of each county
- Available radios
- Available repeaters
- A listing of Maine towns/cities, counties, and population
- A listing of all the licensed amateur radio operators in Maine

SOURCES

The following websites were used to generate this database:

- www.fcc.gov – Source for amateur radio licensees
- www.nerepeaters.com – Source for Maine repeaters
- www.maine.gov – Source for census municipality data
- www.icomamerica.com – Source for Icom radio data and pictures
- www.kenwoodusa.com – Source for Kenwood radio data and pictures
- www.yaesu.com – Source for Yaesu radio data and pictures
- www.hamradio.com – Source for radio pricing
- www.universal-radio.com – Source for radio pricing