Thomas S. Ruby

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Highlights:

- Experienced developer in many languages and environments.
- Knowledgeable in C#, Web, HTML, CSS, XML, ASP, Clarion, Android, Embedded C and Windev.
- Expert in Transact SQL (T-SQL) including merge replication.
- Much experience with POS, transaction processing, credit card processing and PADSS requirements.
- Background in electronics and microcontrollers.

Work Experience:

2014 –   Contracting and Volunteer

a. Series of 3 articles for Garden Railways Magazine using Arduinos for automation.
b. Web program for vendors to purchase and reserve booth space for a convention. Written in C# asp.net with MS SQL back end.
c. Control system for outdoor model railroads. Uses AVR "xMega E5" series processors, color TFT display, NRF24L01+ radio modules and FET motor drivers. I designed the hardware and wrote the software in C.
d. Clock and scheduling device for a "Volcano" display. Keeps time to less than 1 second per week. Users may configure the "Eruption" schedule and sequence. Displays current time, time of next eruption and status of the equipment that makes the volcano "erupt." Users may trigger an unscheduled eruption with a keyfob transmitter. Uses AVR xMega E5 series processors, LCD display, NRF24L01+ radio modules and FETs to drive relays to actuate the volcano features. Programmed in C. All hardware and software designed by me. I discovered and documented the bug in the E5 series parts that stops "SPI" from working when you start the internal "Timer C4" peripheral.
e. Signal Bridge for outdoor model railroad. Uses AVR ATTiny 4313 processor, IR LED and IR receiver to detect the presence of the train and operate red, green and yellow LEDs for the signal. Detects track polarity to know the direction of the train. Programmed in C. Hardware and software designed by me.

2014 – 2014   AHT Services

Maintaining MS SQL and Clarion software.

2012 – 2013   Freelancing

a. Designed a control system for model railroads using color TFT displays, Atmel xMega series processors, NRF24L01+ series radios and FET motor drivers. Demonstrated a working test system in the fall of 2013.
b. Wrote an android app for delivery drivers. The "accounting system" downloads their route and orders into android tablets at the start of the day. They uploaded their sales to the accounting system at the end of the day. Clients were concerned one of these tablets might be misplaced and their sales information would fall into competitor's hands, so all data is kept encrypted. I was not part of the team that wrote the accounting system itself. Written for Android in "Basic for Android."
c. Constructed and continue to maintain web site for midwestrails.org .
d. Designed and programmed odometers for outdoor model railroads using AVR ATTiny 4313 processors, LCD display and hall effect sensor.

2006 – 2012   Crescent System: Director of Development

Developed version 6 of their flagship product using Microsoft SQL, C# and Clarion. Features multi-site operation, credit card integration, Point of Sale peripherals, Internet communication and SQL Replication. The main accounting, POS, restaurant manager and tee booking programs were in Clarion. The reporting system and credit card processing systems were interfaced using programs written in C# that the main Clarion program launched. The online tee booking feature used a Clarion program that watched a port for soap requests.

- Designed and implemented tables, indices, stored procedures, functions and triggers.
- Designed and implemented the user interface.
- Implemented method to automatically compare the structure of the test database with the production databases and add or update tables, indices, procedures, functions and triggers during installation and updates.
- Implemented method to automatically add new tables, indices, procedures, functions and triggers to publication for "Merge Replicated" environments allowing updates to occur without stopping replication and re-establishing the publication and subscribers.

1995 – 2006 **Independent Contractor**

a. Web store written in C# for ASP.Net and MS SQL Server backend. Also used C# to "Scrape" the suppliers' on hand lists and update the database to show items that weren't "on hand" as "available" or not available.
  - Designed and wrote all web software.
  - Designed and implemented tables, indices, stored procedures, triggers and functions in the SQL database.

b. Web program for customers of a major insurance company to check the status of their claims. Client wanted NO connection between the web server and his mainframe, and for security reasons, wanted a CGI program for an Apache web server. Every day, client ram a job on his mainframe and generate a large ebcdic file that he would put on a CD. He put the CD in the PC that served as a web server and ram an import program that scanned the file on the CD and generated a fresh Clarion database. As soon as the fresh database was ready, the CGI program would start using the fresh database and discard the old. Written entirely in Clarion with no SQL backend.

c. Temperature controller for thermoset plastic oven. The controller had fried and would cost thousands to replace, so client had me make a simple controller with an Atmel AVR Mega processor and temperature sensor. Requirement was to hold at least 270F, but not exceed 300F. I made a simple thermostat that turned the heater on if less than 275, and off is more than 285. Designed with an Atmel MEGA series processor and programmed in assembler.

d. Nutrition management program written in C# for ASP and Microsoft SQL. Users could log in and record their daily intake. System contained a database of thousands of foods and analyzed their nutritional value. Though the system recorded NO patient information, not even an email address, a competitor convinced the client it would cost millions of dollars to meet hipaa requirements, so the project was never finished.

e. Inventory, sales and production scheduling system for a frozen foods manufacturer. Besides the usual inventory and sales type functions, this tracked all products received and shipped so client could instantly know the lot numbers and date received of all the ingredients in any item shipped to any customer at any time, or what specific items shipped contained ingredients from any incoming lot. Order taking system imported data from "EDI" data files. Written in Clarion without SQL backend.

f. Huge client record management system for a company that provided education information and certification services to physicians. Client initially insisted I write this in Clarion, but not for SQL and translate it to SQL when they got their Oracle

servers working. They never did get Oracle working, so I introduced them to "Sybase" SQL which handled their entire operation handily on a pair of off-the-shelf NT computers.

g. Wrote a series of articles for Clarion Magazine explaining the benefits of first through fifth normal forms.

h. Warehousing system for a manufacturer who was losing product in his warehouse. We had ruggedized windows computers with RF local area network and laser barcode readers mounted on the fork lifts, and installed a workstation where they palletized the product. Each pallet got a barcode "license plate" label on 4 sides, and each warehouse bay and shipping door had a barcode "floor tag". Users would scan the pallet label and the floor tag whenever they set a pallet down for any reason. To load trucks, the program would show them where to find the oldest pallets of each item to be loaded in the truck. Fork lift, palletizing, order entry and warehouse management programs all written in Clarion for Sybase SQL backend.

i. LTL and OTR truck routing and dispatch program written in Clarion for Sybase SQL server. Used an external non-gps routing program for calculating routes, mileages and times.

j. Warehouse inventory program for ruggedized handheld computer running DOS. Written in Modula II. Used RS-232 port to send collected data to warehouse and inventory management program written in Clarion. I had no involvement with the main Clarion program except for establishing communication to the hand held computer. Client was bought out by a larger company, and when the new owners saw how they managed the warehouse, they put this little program in all their warehouses.

k. POS system for gift shops. Written in Clarion without an SQL back end.

l. Route driver program for distribution companies. Ruggedized DOS portable touch screen battery powered computer received order and route information from the main office system and collected sales data as the driver visited each outlet for uploading to the main computer at the end of the day. I was a subcontractor responsible only for the portable program.

1991 – 1995   Legal Files Software: Lead Programmer

Developed version 3 of their flagship product in Modula 2 and Btrieve for Novell Networks. Legal firms with offices in multiple cities managed their case load with local copies of the entire database. Included CRM features, time and expense tracking, case and calendar management, document assembly and document management. An "Update Server" computer associated with each Netware database server took care of interoffice communication over slow 19.2Kb data lines. That's all that was available at the time from the local telephone company at the home office. Often, a user could save a document at one office, pick up the phone and call a colleague in the other office to tell them the document was ready, and the update servers would have shipped the document to the other office before the phone was answered. If you had the same form open on the same case as another user, you could see them filling in the columns. I always wanted to get it to the point you could see the other user typing.

1990 – 1991   Computer Masters International: VP of Development

Troubleshooting and repair of strange computers I had never seen before. Several small programs using FoxBase and Modula 2 and Btrieve for Novell Networks.

1989-1990   Kanoski & Associates

Developed version 2 of their case management program that later became Legal Files Software. Used Modula 2 and Btrieve for Novell Networks.

1984—1989   Western Illinois University: Student Worker & Grad Assistant

Maintained, installed, and programmed Novell Netware network and CP/M Multi-user systems for the Housing Department. Built electronic projects for the Physics Department. Constructed databases for organizing a large event hosted at the campus.

1978—1984 **Honeywell Micro Switch: Electronic Equipment Technician**
Designed, constructed, programmed, modified and maintained in-house equipment for production testing of electronic products. Programmed in Assembler, Forth and Pascal. I worked mostly on projects for the keyboard and magnetic sensing departments of the large company. Built computers out of 8080 and 8085 microprocessors. Designed the "High Speed Floppy Disk Interface" which operated 8 inch floppy drives at full speed. Designed the "logic and timing analyzer board," which could capture 8 channel wave forms in memory faster than an 8080 could so the computer itself could analyze the timing of an event afterward. Designed the "Current Controlled Coil Driver" board which allowed precise control of magnetic fields. Reprogrammed a "Data Collector," which gathered data on the devices under test and let the production engineers tune their processes. Reprogrammed the 8 "Pack Testers," and reduced the time needed to calibrate one from days to half an hour.

Education:

- MS—Computer Science, Western Illinois University, Macomb IL
- BS—Computer Science, Western Illinois University, Macomb IL. Minors: Math and Physics.
- AAS—Electronic Technology, Highland Community College, Freeport IL

Technical Skills:

- Microsoft Office
- Microsoft SQL
- Database
- Clarion
- WinDev
- Windows
- Web HTML,ASP.NET and CSS
- C, C# and embedded C
- AVR Microcontroller