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VSM COVER STORY

The Montana Programmer: Coding VB.NET While Fishing, Hiking and Dodging Grizzly Bears

By David Ramel ■ 08/20/2018

I was recently trudging along a trail to fish for some trout in a remote Northwest Montana mountain lake when I met a guy coming out.

Whereas I was gasping up the rocky path in military surplus camo pants, thrift-shop hiking shoes and a plain white T-shirt, he looked fit, sleek, high-tech and competent.

We talked a bit and it turned out my new acquaintance named Bob Hosea is a software developer -- when not fishing, hiking, hunting, taking photos and otherwise enjoying the great outdoors in one of the wildest chunks of paradise in the lower 48: the Kootenai National Forest.

When not slinging code, he documents his adventures for thousands of followers on Facebook and has shared great photography on the Web site TheBobFactor.com.

He presented such a contrast to my stereotypical idea of a programmer -- a headphone-wearing, pizza- and energy-drink-fueled 20-something keyboarding away among the same ilk in a trendy San Francisco loft or something -- that I had to find out more.

Here's what it's like to live and program in the mountains of Montana.

[Click on image for larger view.]
The journalist (left) and the programmer. Bob thinks it's fun to carry 40+ lb. pontoon float boats into mountain lakes. The author, not so much.

Visual Basic and Electrical Diagrams

Bob is the programmer in a tiny dev shop called CMH Software Inc. near the small town of Libby, specializing in electrical design and training software.

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The other members of the shop consist of his wife, Sandy, partner Kevin Christensen and Kevin's wife, Mary, who all handle financials, sales, Web duties, databases and so on.

Bob got into programming as a hobby in 1982 with a Radio Shack TRS-80 computer, finding BASIC easy to learn. His first project combined his programming hobby with his interest in all things electrical. He decided to make a digital version of the complete "RCA Semiconductor Replacement Guide," hundreds of pages with thousands of semiconductor pinout diagrams, plus all of the detailed specifications for each one. "And that was for almost every transistor ever made in the world at that time," he said.

He soon found there were limits to what you could do with 4Kb of RAM, though, and had to give up that project for a high-tech recipe program for his wife, Sandy. "And I think she used it twice just because I asked her to use it," he said.

[Click on image for larger view.]
Bob atop Carney Peak in the Cabinet Mountains Wilderness Area ***(source: Bob Hosea).***

His day job was mining, specifically hard-rock drilling, but a 1987 accident made him start thinking about what he would do if that gig ended. To help prepare for that, he transferred to the electrical department, where Kevin was his supervisor. When a mining layoff came in 1993, he started working on some ideas he and Kevin had for mining-related software. The first product to come to fruition was called Constructor.

"This program allowed electricians to completely build complex circuits in what is called a 'ladder diagram,' which is standard in the electrical industry, and then simulate the entire electrical circuit on their computer," Bob said. "It lets them create and test the operation of diagrams without having to spend money on any electrical components first. Saving them time and money. Plus, the Constructor program shows them any potential problems in their circuit if they exist. The program was written completely in BASIC and it worked well."

Kevin quit his mining job to come on board for more programs and CMH Software was born. And Constructor still lives, now at version 13.

What's a Bubble Sort?
Being a self-taught, mom-and-pop-shop programmer isolated in the middle of the Rocky Mountains -- Bob might be the only software developer based in the Kootenai -- makes for some special challenges.

One of those challenges is keeping up with the industry and relating industry buzzwords with what he was doing.

"There have been a lot of times where I figured out that some new term that I just heard about, which sounded outlandish and alien to me, was actually something that I had already been doing, or already knew about," Bob said. "I just refer to it in a totally different way, the correct way I would always figure. Then I would wonder how on earth someone ever came up the term that they are using."

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[Click on image for larger view.]
The CMH Software Web site.

A prime example of that phenomenon -- which is surely familiar to self-taught hobbyists-turned-pros -- is bubble sorting.

"Early on in my programming, I came up with my version of an algorithm for sorting names and numbers in arrays, for both ascending or descending order," Bob said. "It's really not that complicated at all, but what programmer doesn't think their code isn't totally unique and brilliant? And because of how the algorithm worked, where it would compare itself to the next element in an array or to the previous element to determine the next action, I always just thought of it as my 'look-ahead' or 'look-behind' sorter.

"After that when I would read responses from programmers in forums, and they might mention using 'bubble sorting,' I would always think I should check that out sometime. Eventually I did, and wow, it's the exact same algorithm that I wrote, with a different name. And the name 'bubble sorting" fits it perfectly."

Although he says "it's not pretty in any way," below is some 16-bit "bubble sort" code that Bob wrote in 1995 for the company's first Windows version of the Constructor program. He explains the code: "In the Constructor program the main diagram layout is shown in rungs and columns. So this code sorts assignments by the rung number values in an array from small values to large values, and then does the same thing with the column values.

"The first Do/Loop actually shows the bubble sort logic all by itself. This sub just uses two of them for this task."

```
Type AssignmentType
    Rung As Integer
    HorzVert As Byte
    Col As Integer
    Class As Byte
    Mode As Byte
    SpecialData(4) As Byte
    Property1 As Single
    Property2 As Single
End Type



Public Sub SortAssignments(temp_ptr%)

If temp_ptr < 1 Then Exit Sub 'fail-safe
```

What's a Namespace?
Namespaces are another example. "This kind of took a long while for me when I first started working with .NET," Bob said. "I'd already been using and building different classes. But I couldn't see the difference between a so-called Namespace and any of my Class/Sub-Class/Structures. Lol. Ok, there is a difference and I can see it now. It just took a while."

Jack of All Trades
Although Bob wedded his programming hobby with his interest in electrical topics, his programs have gone far beyond electrical diagrams. Bob and his partners at one time worked on underwater remotely operated vehicles (ROVs), and while they never commercialized that project, they developed a ROV they still use to explore the bottoms of local lakes.

Other projects included a simulation engine for a large metal detector manufacturer and a program called Illumination Studio that consisted of the software, and also the circuit designs, to control Christmas lights, or any lights, via a computer.

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Bob is a local treasure, allowing those of us that can't get out into the wilderness we love the chance to see it close up! We live in heaven

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Ah, I remember 4K TRS Model III with cassette tape storage.

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