

Chapter 7

Caves and Beaches

I was in on a Saturday afternoon in the middle of July. I wasn't there because I had to be, I was there because I wanted to be. The Report Writer was proving to be extremely solid. There were few bugs found in it at all, and finally I was feeling comfortable. Like the whole thing **wasn't** going to fall in on me. It seemed I accomplished what only months before seemed impossible.

A little more testing is always a good thing, though, so I was in to check a little more. I spent a few hours creating reports and watching them print. When I was satisfied, I turned off my machine. *It works. It's time to go home.*

I followed developer row toward Dave's office. There was a light on, so I assumed Dave was in as well. He was probably doing a little more testing himself.

As I drew near, I looked in and saw Dave at his desk. In his new office, the configuration had his wooden desk facing the door. To the right of the door as you entered was his round conference table and above it on that wall was a large whiteboard. Along the perpendicular wall to the left were two large bookshelves, filled with books.

I rounded the corner and moved by Dave's entrance a little more deliberately than I normally would. It's OK for the boss to know you're in on a Saturday, after all.

I was just passing by the adjacent conference room, when I heard Dave call my name.

I shrugged. *He must just want to say 'Hi'.* I back-stepped to his door.

"Hey Dave," I said. "How're you doing?"

His face was too serious for a Saturday. "Yes, Kerry. Come here. I need to talk to you about something."

I said "OK," and then walked in and sat down.

Dave had the Report Writer up on his computer screen with a typical report already constructed. Our Report Writer was what was commonly known as a "banded report writer." This meant its design surface was divided into a number of sections (bands) and each represented a particular portion of the final printed report. For instance, one band was labeled "Report Header." Anything (database fields, text,

or rectangles) placed within that band would print only once, at the beginning (or head) of the report. Likewise, there was a band labeled “Page Footer.” Anything placed within that band printed at the end of every page of the report. Another band labeled “Detail” was for information that filled the center (and usually the greatest) portion of every page. In the Detail band of Dave’s report he had a handful of the fields from his database (a database of his laser disk collection) arrayed in a couple rows.

Dave made a motion toward the screen. “I can’t create the kind of report I want,” he said.

I squinted at his monitor. He had the text ‘Title:’ and next to that a rectangular area as a placeholder for the field named ‘Title’ from his database. In that area, the various values for that field would print in the final report. To the right of that he had a similar construct for the ‘Description’ field in his database. The ‘Description’ field was a little different, I knew. It was defined as type ‘memo’ in his database, so it could be really long. When it finally printed, the text for it could span over a number of different lines.

He had a third field in his report named ‘Running Time’. This he had placed beneath the row with ‘Title’ and ‘Description’ on it. “That looks OK to me...?” I said finally.

“Yes, but watch when I preview it,” Dave said. He selected the menu item that presented an onscreen mockup of how the report would look when it printed—‘Print Preview.’ The report design screen was obscured by the Preview window. I could see the three fields displaying as I expected they would. The titles of his laser disks ran down the left side of the screen. Beginning directly beside them was the descriptions for each one. Some of the descriptions only lasted a single line, others spanned on for a dozen. On the line immediately following the last line of each description, the value of ‘Running Time’ displayed. Its horizontal position was directly beneath ‘Title,’ but because the lengths of the descriptions varied, it could be many lines below.

That was exactly how the report should look. “Yeah, that’s right,” I said.

Dave frowned. “But I want ‘Running Time’ to always be on the line immediately following ‘Title.’ How do I do that?”

He couldn’t. The report writer we purchased didn’t allow for that, so neither did ours. “Well, you can’t,” I said. “That’s how the Report Writer was designed.”

Dave’s frown deepened. He turned toward me. “I think we need to allow a field to be anchored, just like we do in the Mac’s Report Writer.”

The Report Writer that went out with the Mac product was built by Marty from the ground up. It allowed the text, boxes, and fields the user constructed to either ‘float’ or be ‘anchored’. When placed on the design surface beneath a stretchable memo field the ‘floatable’ fields continued floating down the printed report until the memo field finished printing all its text. Then they would print. (This was essentially the way all items in my Report Writer behaved.) However, ‘Anchored’ fields remained fixed in place no matter what the stretchable fields above them did. That behavior was a part of Marty’s design for his Report Writer since the beginning, though. I was just working with what I was given.

My mind went over the little I knew about the engine of my Report Writer. It was hardwired to work on only a single line of output at a time. “I don’t think I can do that, Dave,” I said. “The Report Writer doesn’t work that way.”

Dave got more serious. “I think we really need to do anchoring, though,” he said, glancing at his screen. “This Report Writer is unusable without it.”

Well, it’s been completely useable for the last few months. I had no idea how to do what he was asking. “I don’t think I can,” I said. “Not by next month, anyway.”

Dave sounded sympathetic. “I really think we need to do this, Kerry.” He straightened in his chair. “Listen, you’ve done remarkably well so far. Our environment here... well, it isn’t for just any programmer. You blended in much better than some.” He nodded once quickly. “Carol Garrison for instance...” He paused before lifting a shoulder. “Or Sally even.”

Sally?! What’s wrong with Sally?

Dave didn’t elaborate any further and I didn’t ask. I stared at the floor instead. *He’s really going to make me rip up the engine of the Report Writer only a few weeks before we’re supposed to ship. But the thing is solid, so solid.* I looked at Dave again. “But, Dave...you said we were going to ship sometime next month.”

“Well, how long do you think it will take?” he said. “It shouldn’t take longer than a couple weeks should it?”

I looked at the floor again, shook my head slowly. “I have no idea. I don’t even know where to begin.”

Dave was silent for a few moments. “Well, I really think we need to do this,” he said. “Maybe I can have Eric come down on Monday and give you some pointers.”

I couldn’t lift my eyes. The pain in my gut was too great.

“OK...” I said. “I’ll try...” I stood up slowly.

“It needs to be done,” Dave said as I turned.

I walked toward the door. "Alright, I'll see what I can do."

I went home, dreading the following week. The Report Writer hadn't fallen in on me. It was pushed over.

* * *

When I went into work on Monday I was still down. Defeated before I started. It was nice to know Dave thought more of me than he did others on the staff. It was a surprise really. I had the feeling the latest turn with the Report Writer was going to change that perception, though.

At my desk I brought up the three or four files that composed the Report Writer's engine and started paging through them. It took little time to realize my suspicions were correct. There was no easy way to do what Dave wanted.

As the outside author originally conceived it, the engine picked out the appropriate information from what the user saw on screen and transferred it to a separate chunk of memory, what he called a 'literal pool'. The next thing the engine did was build instructions (he called it 'pcode') that described the precise steps to take to print the report. Then, another part of the engine followed those instructions. He called that part an interpreter. The pcode instructions and the interpreter were black boxes to me.

One thing was clear, though. They were built to work on one line of the report at a time. There was no mechanism to go back and print something that didn't 'float'...or stay with something until it finished 'floating'. It just didn't work that way.

I noticed movement out of the corner of my eye. I looked up to see Eric standing outside my door. I waved him in.

"How's it going," he said softly.

I shook my head. "It's not." *You must understand. I've been given a task I cannot do.*

"Yeah, Dave told me to come and help. I'm not sure how much help I can be, though."

"Hmm," I said. "OK."

Eric took a seat. He grabbed a pen and a notepad from the top of my desk. "I looked at the Report Writer code a little. Some of that stuff is confusing..." He waved his hands in the air. "There's this literal pool stuff, and this pcode stuff, and this interpreter business." He frowned. "It's really not like Marty's at all is it?"

"Nope." *But we're going to try to make it act like it.*

Eric drew a few things on the paper. It looked like a bunch of rectangles in a circle connected by lines. “Like I said, I don’t know if this helps you or not, but it seems like...well...maybe you can do something to make the Report Writer work on the pool until everything finishes printing, instead of what it’s doing now.”

I sat quietly. I knew Eric was smart, but he didn’t really know much about the Report Writer engine. Nobody did. Not even me. What Eric was saying was about as much help as finding Scotland on a map and telling me to go there.

“Does that help?” he asked, looking hopeful.

“A little.”

Eric shrugged and put the paper back on my desk. “Let me know if you need more.” He gave a little apologetic smile. “Really, nobody knows this stuff better than you. It’s up to you.”

“Thanks,” I said, forcing a little smile.

Eric opened the door and slid through. “I hope I helped a little.”

I nodded. “A little...”

He gave a low, two-note chuckle. “OK,” he said. “See ya.”

It was really up to me.

* * *

I accomplished very little the rest of that day and the next. I made a few attempts to alter the part of the engine that interpreted the pcode. It was the only part that really made any sense to me. I thought maybe, if I altered the two places that specifically handled the literals—the elements that printed out—I might have a chance.

My attempts were floundering, though. They didn’t work. Either the whole report printed on one line, or it didn’t print at all. The only thing I accomplished was I learned a little more about the interpreter portion of the code. It was like holding a single match in a very windy cave.

There was another complication, though. In order to be able to calculate how much space to allow for the Detail (central) portion of the report, the size of the other bands had to remain constant. That meant the anchor/float mechanism could only occur in the Detail band. (The other bands of the report needed to behave just as before.)

However, the pcode really made no distinctions between the bands.

I was still lost.

* * *

Wednesday I floundered around a little more. I thought maybe if I changed the order of the pcode some—if I changed the description of the report the interpreter followed—maybe I could get something to work.

But I accomplished nothing. The Report Writer either froze my machine, or printed a partial report. The day was a total waste.

I finally decided outright prayer was the best option.

If it was really all “up to me,” it was hopeless.

* * *

Thursday I started to have a hint of something. Another match in my cave of despair.

I thought about adding my own pcode instructions to the mix. There would be no harm in that, I reasoned, because the way the pcode / interpreter mechanism worked, there was some room for additional instructions. I could add my own instructions, and try to get something that would work.

I would leave the old ones as they were—and that was good. It ensured the new anchoring behavior occurred only in the Detail band. The other bands should stay as they were. They should be safe.

Or so I hoped.

* * *

Friday I wondered why I didn’t start praying sooner.

What I really need is a pcode looping structure, I realized. *That way, I can have the stuff in the Detail band keep looping until everything has printed out.* The engine would no longer be tied to dealing with just one line at a time. It would deal with the whole band.

I could have specific pcode instructions for the literals in the Detail band. I would allow for the new ‘anchored’ behavior in those.

It might work.

* * *

That Saturday and the beginning of the following week was spent earnestly pursuing the looping solution I came up with. It was clear that it would work, but it would take some time to clean up all the sundry details.

I was carrying a flashlight through the cave, and I had plenty of batteries.

* * *

By the beginning of August I was out of the cave completely. Anchoring worked, floating worked—reports even printed on more than one line. In addition, I now knew everything there was to know about the Report Writer.

I could now call it completely my own.

* * *

The month of my scheduled vacation arrived. As it turned out, it was convenient Dave agreed to let me take a vacation in August after he denied my original request for May. Over the course of the summer, a friend of mine got engaged and asked me to be the best man in his wedding. The date was in August and it was in California—thousands of miles away. I decided to use my promised vacation to attend.

I was greatly looking forward to a trip out west. I'd been working for Fox for well over a year and had only a couple days off during all that time. A week in the sun with friends was just what I needed.

The wedding was August 5th. I already had my tickets purchased, but I still needed to remind Dave. Just in case he went looking for me while I was gone.

I found him hovering over a laptop computer at his desk. Both hands were at the keyboard and he was completely absorbed, but in a negative way. His expression spoke of stomach trouble.

"Yes," he said as he saw me approach. "What is it?"

I hesitated, contemplating coming back later. "Um...I just wanted to remind you of my vacation the first week of August."

Dave looked at me, but his hands clung to the keyboard. "In August? We're getting ready to ship...."

Oh no, I thought. It's just like Heindel said. There's no good time to take vacation. I looked out Dave's window, seeing the old building across the parking lot. *In fact, maybe the developers never leave.* "But, I asked in March," I said finally.

"Yes, yes, I remember." His eyes were back on the screen, "But take only as much time as you **have** to."

"It's for a friend's wedding," I said, "in California."

Dave's face softened a little. "A wedding? Well, that's not the sort of thing you should miss. It's an important life event."

"Yeah...."

"But take only as much time as you have to," Dave repeated.

Since I already have my tickets, “as much time as I have to” is five days off of work. “OK,” I said, backing away.

I returned to my office and looked out my window. The dumpsters were being emptied below. *Sheesh*, I thought, shaking my head. *I’m going all the way to California for a wedding. A week is reasonable, isn’t it?*

Still, Dave’s reluctance made me feel a little guilty, and what happened when I returned didn’t help.

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As soon as I got back, Dave called a “five year plan” meeting to do the usual FYP stuff. After discussing the status of the product, Dave turned to look in my direction.

“And now that our vacationing developer has returned...” He paused and studied me for a few moments before jerking his head back. “You look tan!” he said.

The rest of the room laughed and I tried not to smile. “Well, I was in California, Dave.” *And the beach was calling.*

“Hmm...,” he said, looking unconvinced. He forced a subdued chuckle. “No, no, he was there for a good reason—a wedding. Those are important things, the things we shouldn’t miss.” Dave’s eyes remained fixed on me.

Why is he still looking at me?

“Well, now that Kerry’s back, nobody should take any **additional** vacation between now and the time we ship this sucker,” he said, with a tad too much emphasis.

He finally looked away. “I’d also like to remind everyone of our eminent deadline. We expect this product to ship by the end of the month, the first of September at the very latest.” He repositioned himself so his head rested in one hand and he wagged a finger with the other. “In fact, the product **must** ship by then because we’ll be giving out copies at the Developer’s Conference.”

I checked the faces of the others in the room. On most of them I saw the same thing I was thinking. *The Developer’s what?*

Dave must have noticed. “Oh yes, you probably aren’t all aware. The Developer’s Conference is a weeklong gathering we’re throwing for our users from around the globe. It will be held downtown (Toledo) at the convention center. It will be their chance to see some of what we’re doing...” Dave forced a little smile. “...and to ask for their favorite enhancement, of course.”

Someone asked about the price.

Dave scratched his forehead. “The price is six hundred and ninety five dollars. That includes their meals, hotel accommodations, and of course, a copy of FoxPro version one point oh. We’ll be handing it out on the last day of the conference.”

The last day of the conference?

“But that should be no problem,” Dave assured us. “The product will have long since shipped by then.”

