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Prologue

When I was around thirteen, I started hanging out with a group of boys who met up for regular long hikes in the mountains around Seattle. We got to know each other as Boy Scouts. We did plenty of hiking and camping with our troop, but very quickly we formed a sort of splinter group that went on our own expeditions— and that's how we thought of them, as expeditions. We wanted more freedom and more risk than the trips the Scouts offered.

There were usually five of us— Mike, Rocky, Reilly, Danny, and me. Mike was the leader; he was a few years older than the rest of us and had vastly more outdoor experience. Over the course of three years or so, we hiked hundreds of miles together. We covered the Olympic National Forest west of Seattle and Glacier Peak Wilderness to the northeast and did hikes along the Pacific Coast. We'd often go for seven days or more at a stretch, guided only by topo- graphic maps through old- growth forests and rocky beaches where we tried to time the tides as we hustled around points. During school breaks, we'd take off on extended trips, hiking and camping in all weather, which in the Pacific Northwest often meant a week of soaked, itchy Army surplus wool pants and pruney toes. We weren't doing technical climbing. No ropes or slings or sheer rock faces. Just long, hard hikes. It wasn't dangerous beyond the fact that we were teenagers deep in the mountains, many hours from help and well before cell phones were a thing.

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Over time we grew into a confident, tight-knit team. We'd finish a full day of hiking, decide upon a place to camp, and with hardly a word we'd all fall into our jobs. Mike and Rocky might tie up the tarp that would be our roof for the night. Danny foraged the under-growth for dry wood, and Reilly and I coaxed a starter stick and twigs into our fire for the night.

And then we ate. Cheap food that was light in our packs but substantial enough to fuel us through the trip. Nothing ever tasted better. For dinner we'd chop up a brick of Spam and mix it with Hamburger Helper or a packet of beef Stroganoff mix. In the morn-ing, we might have Carnation Instant Breakfast mix or a powder that with water transformed into a western omelet, at least according to the package. My morning favorite: Oscar Mayer Smokie Links, a sausage billed as "all meat," now extinct. We used a single frying pan to prepare most of the food, and we ate out of empty #10 coffee cans we each carried. Those cans were our water pails, our saucepans, our oatmeal bowls. I don't know who among us invented the hot raspberry drink. Not that it was a great culinary innovation: just add instant Jell-O mix to boiling water and drink. It worked as dessert or as a morning sugar boost before a day of hiking.

We were away from our parents and the control of any adults, making our own decisions about where to go, what to eat, when we slept, judging for ourselves what risks to take. At school, none of us were the cool kids. Only Danny played an organized sport—basketball— and he soon quit that to make time for our hikes. I was the skinniest of the group and usually the coldest, and I always felt like I was weaker than the others. Still, I liked the physical challenge, and the feeling of autonomy. While hiking was becoming popular in our part of the country, not a lot of teenagers were traipsing off in the woods for eight days on their own.

That said, it was the 1970s, and attitudes toward parenting were looser than they are today. Kids generally had more freedom. And by the time I was in my early teens, my parents had accepted that I was different from many of my peers and had come to terms with the fact that I needed a certain amount of independence in making my way through the world. That acceptance had been hard-won—especially for my mother— but it would play a defining part in who I was to become.

Looking back on it now, I'm sure all of us were searching for something on those trips beyond camaraderie and a sense of accom-plishment. We were at that age when kids test their limits, experi-ment with different identities— and also sometimes feel a yearning for bigger, even transcendent experiences. I had started to feel a clear longing to figure out what my path would be. I wasn't sure what direction it would take, but it had to be something interesting and consequential.

Also in those years, I was spending a lot of time with a different group of boys. Kent, Paul, Ric, and I all went to the same school, Lakeside, which had set up a way for students to connect with a big mainframe computer over a phone line. It was incredibly rare back then for teenagers to have access to a computer in any form. The four of us really took to it, devoting all our free time to writ-ing increasingly more sophisticated programs and exploring what we could do with that electronic machine.

On the surface, the difference between hiking and programming couldn't have been greater. But they each

felt like an adventure. With both sets of friends I was exploring new worlds, traveling to places even most adults couldn't reach. Like hiking, programming fit me because it allowed me to define my own measure of success and it seemed limitless, not determined by how fast I could run or how far I could throw. The logic, focus, and stamina needed to write long, complicated programs came naturally to me. Unlike in hiking, among that group of friends, I was the leader. Toward the end of my sophomore year, in June 1971, Mike called me with our next trip: fifty miles in the Olympic Mountains. The route he chose was called the Press Expedition Trail, after a group sponsored by a newspaper that had explored the area in 1890. Did he mean the same trip on which the men nearly starved to death and their clothes rotted on their bodies? Yes, but that was a long time ago, he said.

Eight decades later it would still be a tough hike; that year had brought a lot of snow, so it was a particularly daunting proposition. But since everyone else— Rocky, Reilly, and Danny— was up for it, there was no way I was going to wimp out. Plus, a younger scout, a guy named Chip, was game. I had to go.

The plan was to climb the Low Divide pass, descend to the Quinault River, and then hike the same trail back, staying each night in log shelters along the way. Six or seven days total. The first day was easy and we spent the night in a beautiful snow- covered meadow. Over the next day or two, as we climbed the Low Divide, the snow got deeper. When we reached the spot where we planned to spend the night, the shelter was buried in snow. I enjoyed a moment of private elation. Surely, I thought, we'd backtrack, head down to a far more welcoming shelter we had passed earlier in the day. We'd make a fire, get warm, and eat.

Mike said we'd take a vote: head back or push on to our final destination. Either choice meant a several-hour hike. "We passed a shelter at the bottom; it's eighteen hundred feet down. We could go back down and stay there, or we could continue on to the Quinault River," Mike said. He didn't need to spell out that going back meant aborting our mission to reach the river.

"What do you think, Dan?" Mike asked. Danny was the unof- ficial second in command in our little group. He was taller than everyone else, and a very capable hiker with long legs that never seemed to tire. Whatever he said would sway the vote.

"Well, we're almost there, maybe we should just go on," Danny said. As the hands went up, it was clear I was in the minority. We'd push on.

A few minutes down the trail I said, "Danny, I'm not happy with you. You could have stopped this." I was joking— sort of.

I remember this trip for how cold and miserable I felt that day. I also remember it for what I did next. I retreated into my own thoughts.

I pictured computer code.

Around that time, someone had loaned Lakeside a computer called a PDP- 8, made by Digital Equipment Corp. This was 1971, and while I was deep into the nascent world of computers, I had never seen anything like it. Up until then, my friends and I had used only huge mainframe computers that were simultaneously shared with other people. We usually connected to them over a phone line or else they were locked in a separate room. But the

PDP- 8 was designed to be used directly by one person and was small enough to sit on the desk next to you. It was probably the closest thing in its day to the personal computers that would be common a decade or so later— though one that weighed eighty pounds and cost $8,500. For a challenge, I decided I would try to write a version of the BASIC programming language for the new computer.

Before the hike I was working on the part of the program that would tell the computer the order in which it should perform opera- tions when someone inputs an expression such as $3(2 + 5)$ x $8 − 3$, or wants to create a game that requires complex math. In program- ming that feature is called a formula evaluator. Trudging along with my eyes on the ground in front of me, I worked on my evaluator, puzzling through the steps needed to perform the operations. Small was key. Computers back then had very little memory, which meant programs had to be lean, written using as little code as possible so as not to hog memory. The PDP- 8 had just 6 kilobytes of the memory a computer uses to store data that it's working on. I'd picture the code and then try to trace how the computer would follow my com- mands. The rhythm of walking helped me think, much like a habit I had of rocking in place. For the rest of that day my mind was immersed in my coding puzzle. As we descended to the valley floor, the snow gave way to a gently sloping trail through an old forest of spruce and fir trees until we reached the river, set up camp, ate our Spam Stroganoff, and finally slept.

By early the next morning we were climbing back up the Low Divide in heavy wind and sleet that whipped sideways in our faces. We stopped under a tree long enough to share a sleeve of Ritz crack- ers and continued. Every camp we found was full of other hikers waiting out the storm. So we just kept going, adding more hours to an interminable day. Crossing a stream, Chip fell and gashed his knee. Mike cleaned the wound and applied butterfly bandages; now we moved only as fast as Chip limped. All the while, I silently honed my code. I hardly spoke a word during the twenty miles we hiked that day. Eventually we came to a shelter that had room for us and set up camp.

Like the famous line "I would have written a shorter letter, but I did not have the time," it's easier to write a program in sloppy code that goes on for pages than to write the same program on a single page. The sloppy version may also run more slowly and use more memory. Over the course of that hike, I had the time to write short. On that long day I slimmed it down more, like whittling little pieces off a stick to sharpen the point. What I made seemed efficient and pleasingly simple. It was by far the best code I had ever written.

As we made our way back to the trailhead the next afternoon, the rain finally gave way to clear skies and the warmth of sunlight. I felt the elation that always hit me after a hike, when all the hard work was behind me. By the time school started again in the fall, whoever had lent us the PDP- 8 had reclaimed it. I never finished my BASIC project. But the code I wrote on that hike, my formula evaluator, and its beauty stayed with me.

Three and a half years later, I was a sophomore in college not sure of my path in life when Paul, one of my Lakeside friends, burst into my dorm room with news of a groundbreaking computer. I knew we could write a BASIC language for it; we had a head start. The first thing I did was to think back to that miserable day on the Low Divide and retrieve from my memory the evaluator code I had written. I typed it into a computer, and with that planted the seed of what would become one of the world's largest companies and the beginning of a new industry.