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Sleeping Through the Technical Interview
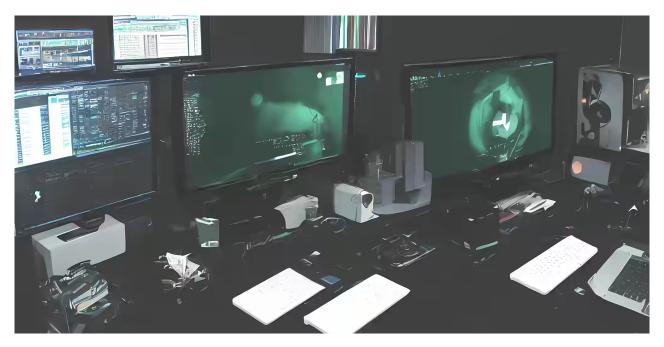=======================================

Read time in minutes: 12

Image generated by Waifu Diffusion v1.2 --   , hacker's battlestation, desktop computer with three screens, split keyboard, green text on black background, a cup of coffee, Haskell, by greg rutkowski and artgerm

\<Cadey\> Based on at least two true stories. With apologies to Aphyr, I love your blog and your x-ing the technical interview parables have been a huge influence on me.

The formless void that stalks all dreams was different today, but not in a way that you could easily identify. The endless stillness of change had a different flavor to it. There was a pulse to it, something you couldn't quite identify. Thoughts and feelings encircle it before they are dismissed as irrelevant, leading to another level of stillness.

Thoughts resume, thoughts of the rent, and the bills, and all of those irrelevancies that everyone in this world loves to spend so much time on.

The pulse resumes with a new pattern: `.-- .- -.- . / ..- .--.` You look down at your wrist and the wakefulness charm is no longer present. Things make sense now. This is a dream. A very boring one, but a dream at that. You thank the dream for its service and make your exit: stage right.

A watch was vibrating. It is the morning. You don't usually wake up in the morning. You take a moment to search your memories for what was significant about today. As if on cue, the watch taps you again and shows a few rows of sigils that remind you.

After freshening up, you set off to make the arduous commute to the office. After 30 whole seconds you manage to finish your epic trek and sit in your custom-rigged office chair. It was a bit of a gambiarra, but it was the only thing that could properly tolerate your tail and dorsal fin. After a struggle, you got your tail fit into the place it's comfortable in. *The dark side of being a one-of-a-kind creature*, you thought.

Firefox was out of date, the workstation said. So the scripts dutifully went off and rebuilt it. Seconds later, a new version was running as it was compiling. Hopefully the important parts would be done in time for the call.

Thank the nine, you thought. They used E100 meet. Or was it E100 hangouts. Maybe E100 Allo or Duo? Depended on who wanted a raise that year. The thought made you smile and you hit a button to turn on the key lights for the camera.

The screen showed a man in his mid-twenties staring at his screen. He looked well-fed, as these startup types tend to be.

"Hey, I'm Jeff with Techaro and I'm going to be your first interviewer today. So that we can get things off on the right foot, you're 'Pa-lie-ma' right?"

The insult that this "Jeff" had just committed was beyond statement. Holding back and dismissing the emotion out of his understandable ignorance, you replied: "It's Palima (Pa-lee-mah), Palima Aethera (Pa-lee-mah Ay-theer-ah)."

"Ah yes, sorry. I'll write that down in my notes so that everyone else gets it right. I try very hard to at least give people the courtesy of saying their name correctly." His candor appears genuine. He is wearing an orange company branded hoodie. Orange was a good color on him, made him look happy. You like this "Jeff" and want to see what he can do.

"Before we get started, are you using some kind of virtual avatar? We like our interviews to be done with people's real faces."

*Ah, another one of *those* types*, you thought to yourself. This is a common accusation you have learned to accept from working with these "humans". They tend to not like it when you violate their social norms on appearances. You hesitate for a moment for a witty reply to manifest itself and reply: "This is my real face. It's a long story I'd rather not get into now."

The magick took root and the "Jeff" stopped thinking about it. He continued. "Is there anything you want to know about Techaro or the position we're looking to fill?"

You already knew everything from the words, both written and unwritten in the job description. Their infrastructure was in chaos. They needed a hero. You saw yourself as an apt standin for said hero.

"No, I think I got the gist from the description."

"So, Palima, what can you tell me about your background?"

Oh, where to begin? you thought. "I have extensive experience in crafting digital automatons into existence and then setting them off into the world to get my goals done. I have worked at large companies such as MovieFlix where I helped create the infrastructure background for one morbillion concurrent streams of popular movies and TV shows. I have also worked on a lot of projects that I can't talk about, but you are benefitting from at least three of them right now. I am looking at joining a smaller company so that I can know everyone at a more personal level. Being an anonymous cog in the machine is only appealing for *so long*."

The "Jeff" grew a curious expression across his face. He looks like he just found a unicorn, albeit one with a serious addiction to cold brew. *La trinkajxo de la dioj.* He continued: "Wow, what's one of your favorite infrastructure projects you've worked on?"

"Probably the one where we benchmarked a bunch of OS kernels in order to figure out which one would work best for the MovieFlix backend. I was personally hoping Linux would win, but we ended up choosing FreeBSD after `epoll(7)` ended up making things run faster. We were all surprised by this. I think I still have a commit bit to FreeBSD."

The man looked shocked. You were winning. Now to see what other fun this "Jeff" would bring.

"Okay, this is mostly a formality, but I'd like to do a little live coding. You sound like you have the kind of background we are looking for here at Techaro, but we need to do this coding challenge just to be sure everyone's on the same playing field. That sound okay with you?"

You nod. "Jeff" was about to have fun.

"Okay, I'm gonna send you a link to this website and it's gonna have a little sorting challenge. There's an array of numbers here and I want you to sort them and explain how the sort works."

"What language should I do it in?"

"Any language is fine really"

He made a mistake. Move quickly, before he takes it back.

```
import Control.Concurrent
import Control.Monad
import System.Environment

sort values = do
    chan <- newChan
```

```
          forM_ values (\time -> forkIO $ threadDelay (100000 * time) >> writeChan chan time)
          forM_ values (\_ -> readChan chan >>= print)

    main = getArgs >>= sort . map read
```

"...what is this doing?"

"Sorting the numbers in constant time. It is the algorithmically fastest sort I know, and it is my favorite sorting algorithm."

"...how though? I don't see any comparisons?"

"You don't need to compare numbers to sort them. Sometimes all it takes is some rest. Run it, it will work."

The "Jeff" looked like he had seen a ghost. Maybe his house was haunted. It is more common than you think. So many ghosts wandering around these days.

You heard a few keyboard strokes and then an enter key. His facial expressions changed and then he looked flabbergasted.

"...S.So how does this work per se? I've never seen anyone sort anything like this."

"This is sleepsort. It is the only constant time sorting algorithm I know of. The way it works is that it spawns a separate green thread for every number you want to sort, then delays that thread for that value times one hundred thousand microseconds. This will sort the numbers."

"How is that constant time though? Doesn't the amount of time it takes depend on the inputs?"

You smile, he has fallen for your trap. "Time complexity does not bother itself with mere side effects like time. All you need is to sleep a little. Things will resolve themselves. It is inevitable."

"Jeff" froze in place. At first you thought he was shocked a bit *too* much. Then you checked in, just to be sure. Being shocked like that could ruin his lovely, mild sunburnt complexion. "You still there?"

"Yeah, I'm here. I've just never seen that before. It's a very...inventive sorting algorithm. How would you optimize it?"

In a flash, one line of code is changed:

```
  -forM_ values (\time -> forkIO $ threadDelay (100000 * time) >> writeChan chan time)
  +forM_ values (\time -> forkIO $ threadDelay (10000 * time) >> writeChan chan time)
```

"It is now ten times faster."

At this point "Jeff" could not hold it back any more and started to laugh. He cut loose and laughed the kind of laugh that you only see in a man who has lost it. You worried for the "Jeff". He looked pale.

"Why did you use such a weird sorting algorithm?"

"Why did you use such a weird question?"

After settling down he made an expression you knew all too well. You were too powerful, you could not be contained there. The "Techaro" was not complicated enough. You would just have to struggle through the meatgrinder of Kubernetes even though they would have been fine with a single dedicated server in Typhoon Digital. There was a spare development board in your closet that would be fine even.

You would be done too quickly. It would not be a worthy challenge. You finished the call and took another sip of your cold brew. The rejection email was imminent. You knew it couldn't come to pass.

Locking the battlestation and unplugging the unlock key, you slink back to your precious haven. Entombing yourself in the blankets was the safest option.

Before the sweet bliss of nonexistence kissed your face again, there was another tap on the wrist. They had already emailed back. Against all odds, they wanted to hire you. For a significant amount of money, enough to make it worth whatever trash fire you would endure there. You wondered if they knew what they were getting into. You decided to sleep on it, things would surely sort themselves out in the evening.

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This article was posted on M09 14 2022. Facts and circumstances may have changed since publication Please contact me before jumping to conclusions if something seems wrong or unclear.

Tags: `haskell` `parable`

- `<span class="h-card"><a class="u-url mention" href="https://pony.social/@cadey" rel="nofollow noopener noreferrer" target="_blank">@<span>cadey</span></a></span>` swagggg. cadey prose time
- you've met "black companies" in JP media before, but have you heard of "orange companies"?
- *waves at the Palima*
- Lost it at "Time complexity does not bother itself with mere side effects like time"
- `<p>@cadey We've definitely had an interview or two like this.
Though, none yet since embracing being plural. Wonder if that'll get brought up the next time we do an interview.</p>`
- It's the truth!
- this is fucking excellent
- Sleeping Through the Technical Interview xeiaso.net/blog/sleeping-… #haskell #parable
- that was very good, please keep doing these
- `<p><span class="h-card"><a href="https://trans.enby.town/users/bun" class="u-url mention">@<span>bun</span></a></span> I might make this a series</p>`
- `<p>@cadey Always love these! The punchline is one of my favorite tricks as well. A great addition to the greater x-ing the interview anthology :D</p>`
- Sleeping Through the Technical Interview xeiaso.net/blog/sleeping-… #haskell #parable
- Sleeping Through the Technical Interview xeiaso.net/blog/sleeping-… #haskell #parable
- `<p><span class="h-card"><a href="https://pony.social/@cadey" class="u-url mention" rel="nofollow noopener noreferrer" target="_blank">@<span>cadey</span></a></span> this is very cute.</p>`
- `<p><span class="h-card"><a href="https://pony.social/@cadey" class="u-url mention" rel="nofollow noopener noreferrer" target="_blank">@<span>cadey</span></a></span> Though Isn't it still O(N) because you do O(N) operations (writeChan/readChan per value in the list)?</p>`
- `<p><span class="h-card"><a href="https://pony.social/@cadey" class="u-url mention" rel="nofollow noopener noreferrer" target="_blank">@<span>cadey</span></a></span> I only just got around to reading this, but this is very well done. Another amazing post, Xe!</p>`
- `<p>@cadey Wow, nice post!</p><p>The only thing that kinda bothered me: the time complexity of sleep sort is still O(N log N), not constant, because the thread scheduler needs some sort of heap or priority queue to know when to wake up a thread.</p>`

The art for Mara was drawn by Selicre.

The art for Cadey was drawn by ArtZorea Studios.

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