



1. REX

The cloud

Biotech

06 DAYS, 07 HOURS, 39 MINUTES UNTIL ZERO HOUR

Tunde: something big is happening, my friends.

My best friend Tunde's text showed up on my cell at 3:01 a.m. on a Tuesday.

I didn't see it until two hours later, and by then his system was down. No e-mails. No texts. No calls.

So I had to bite my nails until he got online again. And, honestly, given the tech he was working with who knew when that would be? Most likely hours.

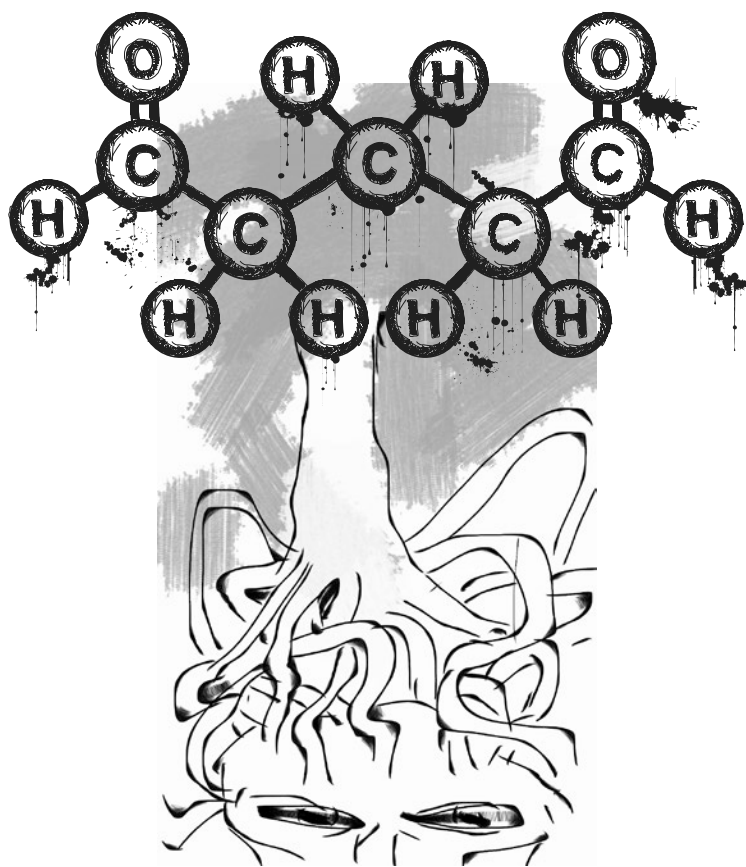
Still, when Tunde said something big was happening . . . he meant it.

And I couldn't wait to hear what.

Anyway, Tuesday meant waking up at five so Papa could drop me off at the bus stop on his way to work. That way I could catch the five-forty bus downtown to the Santa Cruz Industrial Biotechnology Center. It's a lab that specializes in biochemicals like activators and inhibitors, which are used in chemical reactions; with them, you can make anything from soap to beer.

I wasn't there to design molecules, though. I was there to help the company upgrade its servers to a private cloud-computing model I'd been tinkering with. Those guys were chemists: good with beakers but bad with software.

I did some coding and they fed me doughnuts.
Oh, and they paid me. In designer aldehydes.
Yeah, aldehydes.



GLUTARALDEHYDE

Glutaraldehyde, your friendly neighborhood aldehyde

All you really need to know about aldehydes is that they're organic compounds that can be whipped up in a lab. You find them

in fragrances, shampoos, deodorants, etc. They're also great for cleaning. That's why I got them.

See, every Tuesday I also showed up at North High early to meet with Mr. Jawanda. He was the janitor and we had an agreement.

I brought him some choice aldehydes and he let me into the computer lab on weekends. It was a win-win. Mr. Jawanda mixed the aldehydes into his cleaning supplies and crafted a potent brew that kept the hallways spotless for months. Honestly, Principal Yates was always going on about how great the halls looked. And I got to harness the power of some relatively new computers and a decent-sized server system. Stuff I couldn't access from home.

Still, five a.m. is an early wake-up. And if it wasn't for my natural restlessness and Tunde's text, I would have been fast asleep in my first class, Mr. "Cold Fish" Wagner's AP physics.

I'd heard seniors talking about how bland Wagner was when I first got to school, but I just assumed he was tough and didn't really know how to inspire students. That was why everyone hated Mrs. "Pucker Face" Jenkin's calculus class. She taught math like you treat cancer; it was a war.

But this time it turns out the seniors were right.

Mr. Wagner was able to make even the most exciting developments in physics—say, quantum mechanics or chaos theory—like listening to someone read the dictionary out loud for eighty-eight minutes.

Didn't help that he got a lot of it wrong, too.

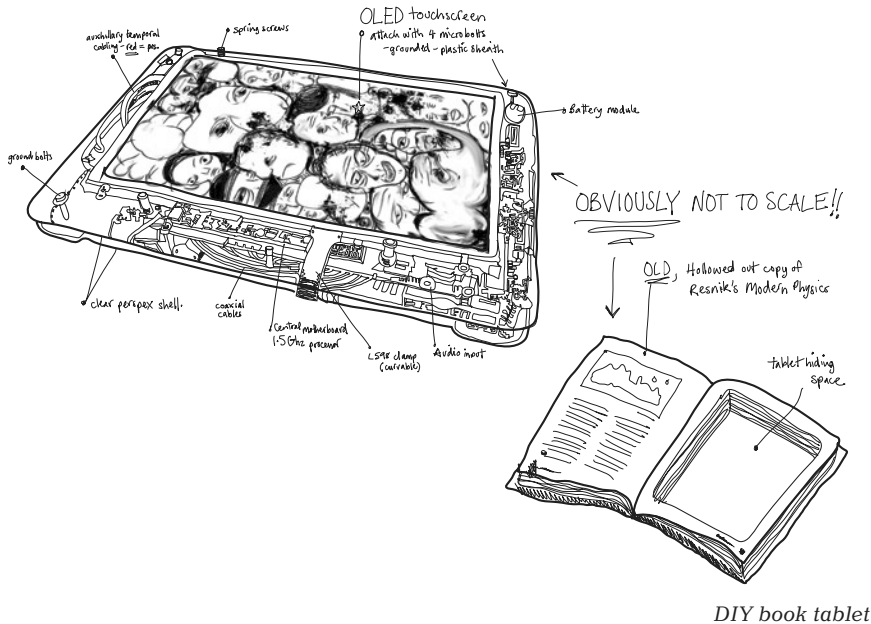
Last year, when I was a freshman, I would have corrected him. I learned that was a mistake pretty fast. Not only do high school teachers hate it when you correct them but high school students hate it even more. It took me longer than it should have to figure out why people were pointing at me and laughing and why I kept finding soda poured through the grille on my locker door.

Good news, though: Mr. Wagner had finally gotten around to oscillations and gravitations and everyone (well, everyone but me)

had their heads down, scribbling notes furiously, listening as intently as they could. In fact, they were all so busy they didn't notice I was coding on my textbook tablet.

As the name implies, it's both a textbook and a tablet. In my case, it's a tablet computer embedded in an old copy of Resnick and Halliday's *Fundamentals of Physics*.

You could make one for a couple hundred bucks. Just grab a 4.3-inch OLED touch screen mounted on a single board with a 1.5 GHz processor, a battery module, a 4 GB preformatted SD card, and any decent-sized hardback book to hide it in. Stir together and voilà!



I was two lines into a pretty sweet microcode for an assembly language when my textbook tablet buzzed.

Tunde was back online.

Naija Boi: did you receive my message?

KingRx: of course. did you get my responses? Tell me what's going on. Dying over here.

Naija Boi: patience, omo. Waiting for Painted Wolf.

KingRx: ugh. Come on, give me a hint.

Naija Boi: it is going to change our lives.

KingRx: seriously?

At North High, I had no one.

But outside those boring brick walls, it was a different story. I had the LODGE. I always say it with a dramatic flourish, like it's the beginning of Beethoven's Ninth.

Anyway, we call ourselves the LODGE because we all agreed it sounds really cool and exclusive. Especially since the only members are Tunde, Painted Wolf, and me. We're best friends even though we've never actually met in person and Tunde and I don't even know Painted Wolf's real name.

Tunde (aka Naija Boi) is fourteen; a rural Nigerian kid who loves hip-hop and soccer. He also happens to be a self-taught engineer, with the wickedest memory known to man.

Painted Wolf (aka Painted Wolf) is sixteen. She's from Shanghai and is one of China's most notorious (and mysterious) activist bloggers. She's also the one who brought us together. I'll spare you the details because she tells the story best.

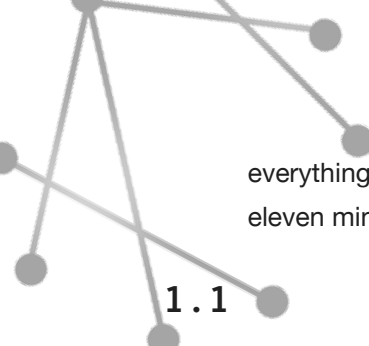
Anyway, Tunde isn't given to exaggeration. Like any engineer worth his salt, he's superrational. That doesn't mean he's boring. It just means he sticks to the facts.

So if he said it was going to change our lives?

That pretty much meant it really was going to change our lives.

Naija Boi: Painted Wolf will be on soon. can we talk goniophotometers first?

KingRx: fine. But as soon as she's on, you're going to tell us



everything, and don't drag it out. First period's over in exactly eleven minutes.

1.1

So yeah, let's talk goniophotometer programs for a sec.

First time I heard about them, I had to look them up, too.

They're for measuring light.

Tunde was working on upgrades to his solar power plant (he'll explain later) but they involved some sophisticated coding and the only computers he had access to were pretty outdated. We're talking like twenty years outdated. Like PC-DOS 6.3. It frustrated him to no end, but fortunately it just so happened that I loved the challenge of writing programs for ancient computers. It was kind of like translating HTML back to papyrus.

The way it worked was simple: Tunde would send me a bunch of specs for the solar power plant upgrades and a general idea of what he wanted to accomplish. My job was figuring out how to make it work on a software level. In this case, he was installing new heliostats (the mirrors that focus the light to the top of the collecting tower).

Naija Boi: So the goniophotometer will be matched with the spectroradiometer.

KingRx: And, uh, what is that?

NaijaBoi: It is obvious, no? Measures spectral power solar irradiance.

KingRx: Oh, of course. Makes total sense, Tunde. Let me just plot that out.

NaijaBoi: Ha ha. Okay, Mister Sarcastic.

KingRx: What were we talking about?

Naijaboi: Spectral power solar—

KingRx: Right. Right. Are we talking about luminosity? Just off the top of my head I'd be thinking something like "for(int i=1, <=2;i++)". Make sense?

NaijaBoi: Yes, this is excellent. Thank you.

My book tablet buzzed again.

A little icon popped up on the screen and there was the face of Painted Wolf. In her trademark dark sunglasses, purple wig, and . . . I was actually surprised to see she was wearing a nose ring. Hadn't seen that before.

Painted Wolf: hello, boys. Are we being geeky?

KingRx: what else would we be doing?

Painted Wolf: Tunde, got your message. What's up?

KingRx: He's been driving me crazy with this.

Wouldn't tell me until you get here.

Painted Wolf: Well, here I am.

KingRx: spill it, Tunde.

NaijaBoi: There is going to be a competition. It is called the Game, and 200 of the smartest people under 18 years of age from around the globe will be flown to the Boston Collective to compete. All expenses are paid. I do not know the prize.

Painted Wolf: Sounds incredible. Who's running it?

NaijaBoi: Kiran Biswas.

KingRx: no way.

Painted Wolf: :-0!



Kiran Biswas was only the biggest name in technology, cybernetics, futurism, and design. When people spoke of a Cult of Kiran, they weren't exaggerating. At only eighteen years old, he was not only the CEO of OndScan, one of the most powerful tech

companies in the world, but also a social justice warrior and an outspoken egalitarian. And, of course, he just happened to be tall, dark, and handsome.

Guy had it all.

The fact that he was going to launch some sort of brainiac competition was mind-shattering. I wanted in. Immediately. But not just because it sounded like the best time in the world, I wanted in because it was at the Boston Collective, the country's top technology and engineering university.

This was the moment.

The moment I'd spent the last two years waiting for, a competition at one of the only places with a working quantum computer. If I could get in, if I could get to the campus, I could run WALKABOUT and I could find Teo.

Forget that "could" noise. I had to get in.

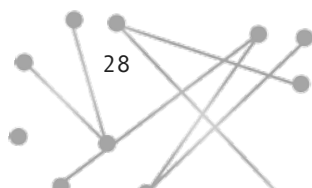
KingRx: how'd you hear about this?

Painted Wolf: Were you invited?

Naija Boi: No. This thing is being handled very secretly. I received an anonymous e-mail about it this afternoon. Very strange indeed. The invitations are going out tomorrow night. It is to be Africa first, then two hours later, Asia, then a further two hours, the Americas, and finally, Europe. But you will not believe the thing I will tell you next

A hand suddenly came into view and ripped my textbook tablet from my grasp. The hand belonged to Seth Pratt, who was grinning ear to ear.

"This thing is crazy," he said, turning my textbook tablet around and pushing every button on it he could find. Watching him, I couldn't help but flinch. Every button press was another window closed or e-mail deleted or program potentially lost. "You can make



something like this, but you still sit in this classroom and listen to Mr. Wagner's bullshit. What's wrong with you?"

"I need that back," I told him, trying to stay calm.

Despite Seth's grating personality (or maybe because of it), he was one of North High's most popular kids. He lettered on the swim team (ridiculously fast backstroke), dated Veronica Styles (outrageous lips), and there wasn't a party in Santa Cruz County in the past eight months that he hadn't been invited to.

Up until that second, Seth had never said a word to me.

Not even a passing joke about my up-cycled Nike Dunk Low Pros or the fact that I'm three and a half years younger than him. No snide remarks in the locker room. No requests for me to make him a cardboard book scanner or install a pin camera in his letter jacket's collar.

"What?" he asked, screwing up his face. Seth wasn't used to people talking back to him. He wasn't familiar with the concept that maybe, just maybe, I didn't want him to have barged his way into my life at that very second.

"I need that back," I said. "Right now."

He scoffed, narrowed his eyes.

"You think you're better than me, don't you?"

Great. Here we go.

"Listen, Seth, can I just have it back?"

He pretended to drop my textbook tablet. "Whoops!"

He did it again and I almost jumped out of my seat to rip it from his hands, but I knew there'd be trouble if I made a scene. I really could do without the administrative attention. Besides, I'd seen the bruises Seth had given Tom Mendez a couple of weeks earlier. Best to just stay put.

"What if I did drop it, though?" Seth said. "What would you do?"

"I'd be pretty upset."

"Pretty upset," he said, mocking me. "Not pissed? Not up in my face?"



"What do you want me to say, Seth?"

"See," he said, "this is exactly why guys like me run the world and guys like you work for us. Think you're such a badass making computer books, like anyone actually wants a piece of junk like this, and slacking off in class. Truth is, all your brains don't mean anything if you can't back them up with a spine."

Seth threw a fist at me, pulled it at the last second. He expected me to jump, to flinch. I didn't. I froze and he left his fist hanging in front of my face, close enough that I could make out the tiny letters on his homecoming ring.

"You're just like your brother, Huerta. All bark and no bite. They still haven't found him, have they? Have you guys checked Mexico?"

That was it.

I jumped up, my hands unconsciously balled into fists.

My body tensed, my eyes narrowed.

I was going to overturn my desk, crush him into subatomic space but . . .

"Ha. Chill, dude." Seth laughed with a big grin. "I'm just playing, man. Damn. You look like you're gonna kill me or something. Seriously, though . . ."

Mr. Wagner cleared his throat.

I glared at Seth and he dropped my textbook tablet on my desk, hard enough to crack the corner of the screen. I sighed, still furious but letting it go.

A trip to the principal's office and a phone call to my house? Well, even breaking Seth's nose wouldn't be worth the fallout from that. I looked up to see the rest of the class turned around in their seats, staring.

"We okay, Mr. Huerta?" Mr. Wagner asked.

"Yes, sir," I said, biting my tongue. "We're just fine."

