

THE GITHUB WAY

HOW THE COLLABORATION PLATFORM AIMS TO HELP EVERYONE DO ANY PROJECT

BY ROBERT MCMILLAN



IN APRIL, Bubby Rayber's wedding date was coming up fast. Too fast. In less than a month, he was supposed to host a daylong event for about 1,000 guests on the southern tip of India, and he needed a quick way to share the details. So the 28-year-old senior systems engineer at LinkedIn turned to a familiar website for help. Rayber invited friends via GitHub, the go-to social networking site for programmers. People don't typically use GitHub for wedding invites. Launched in 2008 as a platform to collaborate on software projects, GitHub stores whatever you're working on and keeps track of the changes you make. It shares the document with all the world and encourages the world to comment back. Coders love it, and recently they've been branching out. It turns out that a wedding invitation and an open source software project have more in common than you'd think. In Rayber's case, soon after he

GitHub CEO Tom Preston-Werner hopes to change the nature of collaboration.

uploaded his wedding invitation, one guest fixed a typo; another added a cute congratulatory note. The folks at

GitHub think this style of cooperative tinkering represents the future: a world where anyone can suggest improvements to almost any project, and all fixes can be discussed like Facebook posts. "The open, collaborative workflow we have created for software development is so appealing that it's gaining traction for nonsoftware projects that require significant collaboration," says GitHub cofounder and CEO Tom Preston-Werner. Last year, Twitter's top lawyer, Benja-





min Lee, used GitHub to draft a new licensing agreement for his company's engineers. Before long, other GitHub users had fixed a handful of minor grammatical errors. Then Trishan Arul, head of business operations at Twitter cofounder Evan Williams' startup incubator, Obvious, suggested some text that he wanted Lee to incorporate (Lee rewrote those sections of the document). In a completely different realm, Adam Wood, music director of an Episcopal church in Texas, is uploading a compendium of Gregorian chants to GitHub. He thinks the service is the perfect place for choir directors to share and improve all kinds of music.

Of course, Preston-Werner wasn't considering such things when he and two friends dreamed up GitHub over beers in a San Francisco sports bar. They saw it as a way to create easy

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collaboration on Git, an open source software program written by Linus Torvalds that most of the world had a hard time using. Within six months of launching publicly, GitHub had about 30,000 users, many of them sharing code from their own projects. Now, with 3.8 million users, the site is a runaway hit.

To people who do not write software for a living, a visit to GitHub is a daunting run through the hacker jargon gauntlet. There are repositories, or repos, big chunks of code or text that gets edited and "forked"—GitHub lingo for copying so that users can build and modify new iterations. The site's big innovation is the pull request. It's what you do after forking something, an electronic note saying, "Hey, I was checking out your project and I found a way to make it better. Look here and you can see what I've changed; press this button and the changes will become part of your project." The pull request makes it easy for anybody to fix a bug in a software program or a misspelling in a document.

Other features on the site are more familiar: You can follow different hackers to see what they're working on, and you can comment on their code—much like you'd do

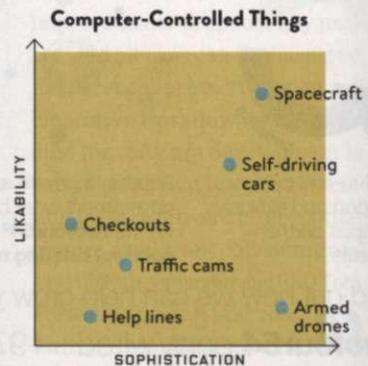
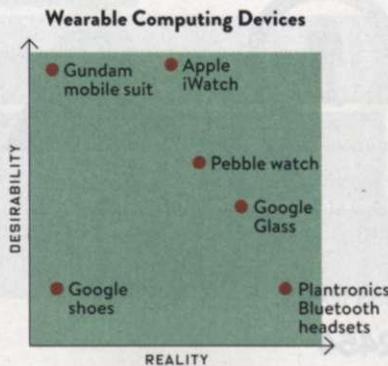
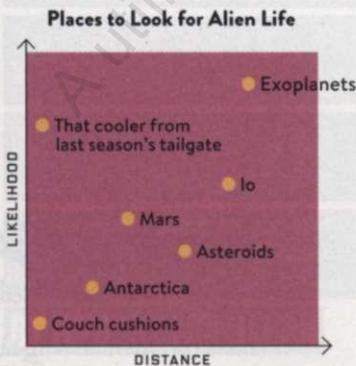
with a Facebook photo. You can star a project to show that you like it, just as you'd favorite something on Twitter. People discover new projects and then play around with them, suggesting changes and trying out new ideas. Then, with the push of a button, they merge into something better.

To hackers, a GitHub account says more about who you really are than your LinkedIn profile or Facebook page. It shows the code you write, and

GITHUB WANTS TO MAKE COLLABORATING ON 3-D DESIGN AND PRINTING AS EASY AS COLLABORATING ON CODE.

perhaps just as important, it shows how you handle public criticism. Some startups won't even consider applicants who don't have a GitHub account. At Facebook, about half of new engineering applicants include a link to their account on GitHub. "It's becoming part of the package," says Adam Ward, director of university recruiting at Facebook. "People show their personalities through their accounts. You see how they take and give feedback." 

CHARTGEIST





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Last year the venture capital firm Andreessen Horowitz ponied up an astonishing \$100 million to invest in GitHub. General partner Peter Levine thinks the GitHub way could work just about anywhere where text needs to be stored, edited, and discussed: law firms, hospitals, banks, design shops.

There's plenty of evidence he's right. Take Francis Irving, CEO of a data-analysis startup. He uses it as a bug tracker for his 120-year-old Victorian home in Liverpool, England. In the year that he's been fixing his house via GitHub, he has opened 101 issues and gotten lots of tips, like how to repair a noisy radiator.

Preston-Werner acknowledges that GitHub will have to adjust its interface before nonprogrammers find the site more accessible. But he isn't willing to say what's coming next. "The danger to overpromise and under-deliver is extremely high," he says. "We don't talk about new features or products until they launch."

For his part, Preston-Werner is casting an eye at the worlds of design and 3-D printing. Recently a Salt Lake City software developer open sourced a variety of 3-D designs on GitHub, including a sink aerator, a thin piece of plastic to hold down a rug, and a cutlery-tray insert. To start thinking more about how to help such activities, GitHub set up a 3-D printer in the office and encouraged employees to play with it, just to see what happened. "If we can make it so easy to print something on a 3-D printer that every normal person feels comfortable doing it," Preston-Werner says, "we've made it so that open source can start affect-

ing the hardware world in the same way that it's already affecting the software world."

One of the most improbable new GitHub users is the White House. A year ago White House CIO Steven VanRoekel began work on a plan to make government data more accessible. Federal agencies are a trove of information, everything from court records to FCC data on pirate radio stations, but it's often hard for software developers to write programs that can access this data. VanRoekel, who spent 15 years at Microsoft before coming to Washington, got tagged with fixing that. Last summer his team started hammering out a set of software tools and policy documents that serve as instruction manuals for bureaucrats.

It's called Project Open Data, and it is written—and coded—on GitHub. In the beginning the project was stored in private repositories that were available to a working group of the agencies that fall under VanRoekel's purview, including the Department of Education, the Federal Communications Commission, and the General Services Administration. In May, VanRoekel's office released software that agencies can use to open their databases to outside developers. Those programs are hosted publicly on GitHub, along with the Open Data policy documents. "It's the first time the White House has issued policy coupled with a GitHub repository," VanRoekel says. So if you know better than the government bureaucrats and want to improve their definition of "open licenses" (or tell them how to make better databases), fork it and submit a pull request to the White House.

And keep an eye out: The next graphic novel, math textbook, or state law you read may be created on GitHub too. 

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