

Puzzles as a Recruiting Tool – A Case Study

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The use of puzzles as a screening and interview tool by software development organizations has become commonplace. However, relatively few technology organizations make use of puzzles as a *recruiting* tool. This paper showcases the use of mathematics and puzzles at a typical athenahealth career fair presentation and discusses some of the reasons that we have found puzzles to be valuable tools for attracting developers to athenahealth.



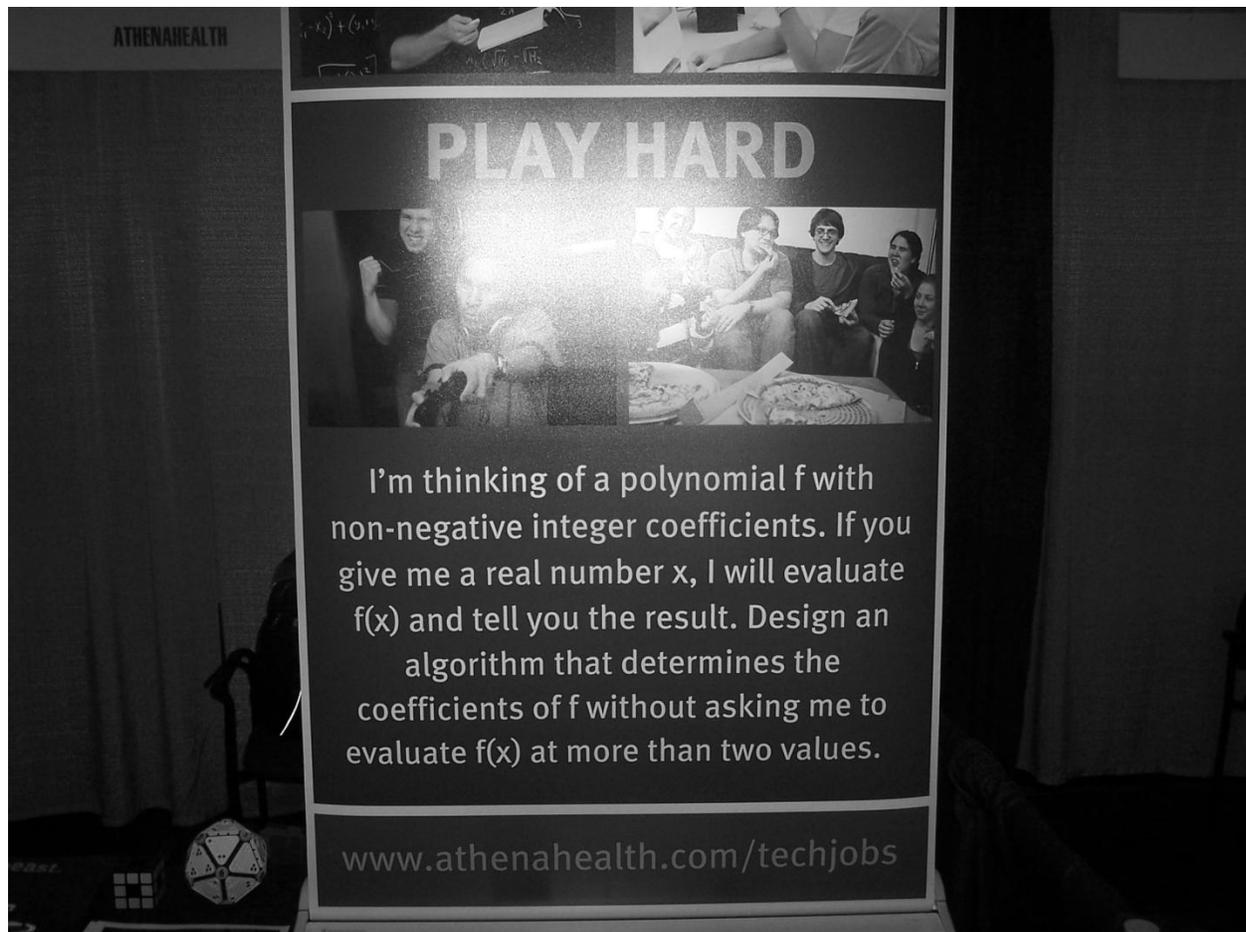
For those readers who may not be familiar with campus recruiting, a brief introduction is in order. A career fair is an event allowing employers to connect with prospective employees. Employers rent space in a conference hall or other facility, set up booths with brochures and banners describing the company and job opportunities and send employees to answer questions about the company and collect resumes and contact information. Typical career fair booths are illustrated in the pictures below. Common to the booths is a description of the company, marketing and recruiting material and vendor swag to help the

candidates remember the company's name; some booths also have banners listing the types of positions available. In general, the focus is usually on what the company does or produces.

At athenahealth, we have taken a different approach to the design of a career fair booth. Instead of focusing on what the company does, we focus on the type of employees that we are seeking. Because we are looking for employees with interesting traits, we end up with an interesting booth; at a recent career fair in the Atlanta area, members of the event staff commented that it was the most interesting booth at the event. From a distance, it may not look that different from the typical career fair booth illustrated above; but looking closer, the booth is actually quite different.

We start by being different with our banner. Rather than describing the purpose of the company or talking about available positions, we show some of our employees (not unusual) and give the candidates a math problem to think about (most unusual). A larger image of the problem is shown on the next page.





Many candidates will ignore the math problem, step up to the recruiter, hand them a resume and start asking about jobs. That's not a show-stopper, particularly for non-development positions, but since we continue to use puzzles in the screening and interview process for developers, candidates who don't show an interest in puzzles at this stage will tend to self-select themselves out of the process further down the road. One prospect even infamously elected to leave an on-site interview at the beginning of the day after we started out with "yet another puzzle".

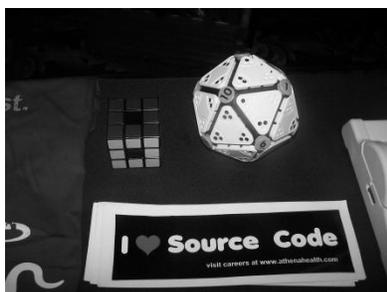
A smaller set of prospects will slow down in their tracks as they move by the booth, look at the problem, come to a complete stop and start to think. Sometimes, they will stand across the aisle looking at the problem for a few minutes, perhaps discussing it with a friend; that's a cue for someone for the booth to walk over to them and start to talk about the problem, perhaps giving them a hint in the form of a good special case to consider. (If you haven't solved the problem yourself yet, your hint is this – if I give you the further information that the coefficients are strictly less than 100, then you can find all coefficients in *one* value.) Other prospects will walk over to the booth of their own accord and start talking about the problem or why this problem is relevant to what we do. In either case, the banner has served its purpose – get folks who like to solve problems and puzzles to stop, talk to us and approach the booth.

On the table in the booth, we have the ubiquitous food, brochures, T-shirts and other types of vendor swag. In keeping with our theme, though, we also have puzzles, as illustrated on the next page. While



this booth is intended to find software developer candidates, it often happens that non-developers will also step up and start working on the puzzles. This is something of which we do take note; while an individual may not have the technical skills to write code, good puzzlers have traits which make them good employees in a variety of positions. As with the banner puzzle, if the candidate doesn't start talking with us, we will engage them in conversation after a few minutes, starting with a discussion of the puzzle and maybe helping them try a few ideas out.

We've attempted to find puzzles for the career fair table that are a cut above the ordinary. Two of the puzzles, the Grand Vizier and the 12-Block puzzle (omitted from the pictures due to not showing up well in black and white) are athenahealth-branded versions of puzzles by G4G regular Pavel Curtis. The Void Cube by designer Katsuhiko Okamoto originally came with athenahealth stickers for each square, but it was deemed too labor intensive to apply; we now use on the table for prospects to play with and keep a stash behind the banner as a premium giveaway for candidates with whom we especially want to stay in touch. Andrea Mainini's IcoSoKu is not usually



part of our career fair display; it is one of the numerous puzzles that I keep in my office in Alpharetta to encourage developers to stop by and talk while they solve. As an interesting aside, this isn't the only emergent use of the IcoSoKu in our office; one of my cohorts has been working with a summer honors mathematics program in Georgia for over 30 years (long enough that I was one of his students at the same program back in 1983), and he adopted it as an interview tool this year for candidates for that summer program.

At this point, your question may be "Why? Why do we make puzzles such a focus of our recruiting efforts?" A first answer is that, while a career fair provides candidates an opportunity to make a first impression on a company, it also serves as a venue for a company to make a first and hopefully lasting impression on candidates. At athenahealth, we consider this second purpose to be the primary purpose; within the language of our corporate culture, we consider career fairs to be "sell" events rather than "buy" events. So at the career fair booth, we focus on selling the company, and in particular, we focus on selling what we believe to be the most important aspect of the company: our culture, and specifically our development organization's culture as an organization of puzzlers.

That leads to another “Why?” Specifically, why is a puzzle culture so important to athenahealth? At athenahealth, we’re trying to solve one of this generation’s biggest puzzles – namely, how do you fix the



American health care system? For us, a representation of the problem is the shelf shown in the picture to the left; in many doctor’s offices, this is the current state of health care records. Our specific attack on the health care puzzle is to bring order to that shelf and make it possible for a practice to dig information out of those records. We have found that candidates that are interested in the puzzles found on our career fair tables and that can survive the gauntlet of puzzles in our

screening and interview process are also good at solving the puzzles inherent in organizing and mining the data found in these shelves.

Again, why is this the case? Typically, those interested in puzzles share the following relevant traits:

- Problem-solving skills and intelligence – The ability to solve puzzles is a good proxy for general intelligence and problem-solving skills. At athenahealth, we’re trying to solve hard problems, so we want people that are “smarter than the average bear”.
- Persistence – Those interested in puzzles don’t just stare at a puzzle for a few minutes and walk away. They try one approach, then another – maybe they walk away for a little while to get a fresh perspective, but they come back and keep at the puzzle until they solve it. In our interview process, we look for the ability to stick with a problem and take it through to its conclusion; puzzlers have a head start in proving this ability.
- Passion – Finally, puzzlers are not ambivalent about puzzles, but have a passion for puzzles. At athenahealth, we want people that have shown the ability to be passionate about *something*, whether it be puzzles or something else, because we want them to become equally passionate about solving American healthcare.

Our use of puzzles at the career fair is just the beginning; candidates who apply for a development position are sent another puzzle to work on and submit via email, and have to work two more puzzles as part of the on-site interview process. These are computational puzzles requiring a combination of insight into the problem and technical ability to write code that can deliver a solution in a timely fashion; we specifically place emphasis on the ability to get a first pass working in ninety minutes in the on-site interviews. As these puzzles become familiar to the developer community, we have to continually to cycle in new puzzles – which is why I’m not going to talk about them in this paper, except to note that several of the problems would be on topics familiar to this readership.

I hope you’ve found this look into one company’s use of puzzles to be interesting. I’d be interested in hearing how other companies are making use of puzzles in the recruiting, screening and hiring process. Special thanks to fellow G4G attendee and former “athenista” Josh Jordan, who I learned at G4GX played a pivotal role in introducing puzzles to our career fairs and provided me with additional history.