The Project

*Why won’t they return my calls.*

With the rise of the video games industry thanks to crafty consumers such as yourself, many gamers are suddenly realizing that there is a workplace where their knowledge of loot tables and button combinations are not shunned, but welcomed! But as legions of people who were brought up playing games are now flocking to the industry that creates them, they are finding that it’s not exactly like applying to Wal-Mart. The jobs are few, companies are opening and closing every day, and lightning fast development cycles are keeping developers’ eyes on their computer screens with little time to hear about your zombie survival MMO.

As the aspiring developer may have noticed, the resurgence of the video games industry as an employment destination has yielded many new resources to help guide one in the right direction, and this article is no exception. Books are being written on the subject and many industry professionals are giving great “how to break into the industry” talks. If you aren’t reading this, or attending those, you should.

We are a student team from Worcester Polytechnic Institute, which has a game development program and is home to many bright-eyed and bushy-tailed young game developers. While the school, as well as many other institutions, has been able to channel the ancient teaching magics to educate the passionate masses on how to make games, getting the interview for the job is still unknown territory. Interviewing for a game job is sort of like a unicorn; it doesn’t seem to appear very often and it has a large deadly spike on its head.

Our mission was simple... so simple in fact, that we needed to make it a little bit more complicated so we’d feel good about ourselves. We wanted to speak to game developers directly and get a snapshot of what the industry is currently looking for in new applicants and hires. Specifically, we want to know what fresh college grads and new developers with little to no professional experience need to know to be prepared for that interview, how to get one in the first place, and the most important part: what are acceptable levels of body odor.

We interviewed developers from all of the major game development studios in the Boston area, which should provide a great contrast to the usual focus on West-coast (or West-siiiii-eeed as the music televisions says it) studios. We got people from some big places such as Turbine and 38 Studios, smaller indies such as Subatomic Studios and Large Animal, some of our own esteemed professors that came from industry such as veteran game designer and GDC-posterboy Brian Moriarty, and everything in between.

We cornered them, lured them to locations of our (their) choosing with promises of candy and a 2-hour lunch break, and ran them through a grueling gamut of questions covering a range of subjects to get the info that you need when going on the job hunt. I’ve broken down some of the categories here so you can see concisely which areas we focused on and what the developers felt strongly about.

**Networking and Preparation**

*It’s not what you know, it’s who you know... actually wait, it’s both.*

Game developers like to hang out. They do, you know, stuff. Monthly stuff. Big convention stuff. And you should be going to these. There’s no excuse, really. I mean what else are you doing the first Wednesday night of every month? If you’re too busy playing games, you may want to 1. Get out a little and 2. Realize that attending your local developer gatherings is one of the easiest and most effective ways of getting insider info and contacts. How important is networking in the games industry? Very important. Super important, even. Everyone in the industry knows each other. They have secret hideouts and secret handshakes, known as “the games industry” and “making games” respectively. If you get to know the developers in your nearest city, be it at a Post Mortem gathering or an IGDA meeting, you are now opening a door to the entire business. Note: it helps to not think of people as doors.

Are you stoked for PAX coming to town? Grabbed a ticket to this year’s GDC? Some other acronym tickles your fancy that entails lots of game makers under one giant roof together? Great, now print some business cards, sharpen up that resume, and start talking to people. How to actually talk to people was a bit beyond the scope of this study, and you should probably get some practice in that area. Generally, it’s nice to show curiosity and a genuine interest in a company and you should convey this to
their employees if you happen to meet them. It may not be helpful, however, to treat them like celebrities and start off immediately with all your ideas for games. Everyone has ideas. I have an idea for what to do with the curtains in my living room. You don’t need to hear about it. Just go to the gatherings and have fun, enjoy yourself, don’t stand in the corner of the room, and try not to look like you’re really just there for networking. You should be at these events to genuinely get to know people, make friends, and come out of them with real connections, not just business contacts.

Why make this effort? You never know where a chance encounter or conversation is going to lead. Seriously, you don’t. Unless you are clairvoyant, in which case what number am I thinking of? How did you know it was 23?! You are a cheater and good day to you.

One of our interviewees shared a great story about how he entered the industry. He’d been talking to a developer in the local community and expressed a desire to find a position. The developer happened to know that a position was opening up, and gave our interviewee the information before the job posting was even put up, meaning it was already filled before the public even knew about it. The power of networking, people. It is definitely worth it.

But, as I alluded to earlier, simply talking to the developers about your favorite games and what kind of crazy revolutionary ideas you have isn’t enough. You need to be able to talk to them about something they’ll understand and value greatly: the making of games. If you’re trying to enter this industry, it is implicit that you have some kind of skill that you have to offer the company they work for, and this is what you should be focusing on. It will likely fall under one of these following areas, so pull up a chair and, well, keeping reading, I guess.

**Engineering**

*I’m technically savvy. I use words like “savvy”.*

This is one of the main areas of game development, and the one which purportedly has the most openings due to the technical mastery one must have over these confounded metal machines.

Software engineers... programmers... you know, those kind of hooligans. They’re highly sought after for some reason. I guess it’s because they’re usually pretty smart, good at math, and have the work ethic of the computers they hold dominion over. They are the ones making the game do game-y things, such as work in the first place.

As a prospective engineer, you’ve got some great options and here are some tips and suggestions from the developers we interviewed as well as some general knowledge that should get you on the right track.

First of all, a good ol’ computer science degree is still very much relevant in the pursuit of video game programming. The interviewers giving you the technical test at your interview are likely computer science majors themselves, so you guys can be buddies and bond over such fascinating things like directed acyclic graphs and binary search trees and all that great stuff. A computer science degree isn’t mandatory, however. Game development programs are popping up all the time, as well as books, and there is of course, the Almighty Internet. The best way to become a game programmer is to try it out! Look up some tutorials, take a class, and get coding.

Our interview subjects all thought it was a really cool idea to have a portfolio of projects to show. This can be in the form of games developed in many different engines, showing your prowess, one large game project where you had to learn and use many different concepts, or just some great code samples that demonstrate knowledge of game programming algorithms.

As far as specifics go, these change all the time. The best advice the interviewees could give regarding what kind of programming concepts to learn, which languages to use, and what engines to develop for, was to pick something and learn the fundamentals. Become a good generalist such that when you’re applying for an entry-level job, they know that you can fit into the spot they have open. If you’re doing a project on your own, you’ll likely touch on many different areas and find what you are most passionate about, whether it be gameplay logic, networks, artificial intelligence, or graphics.

Grab a free game engine, learn it inside and out, read the documentation, and make something! Try out the different programming areas to get comfortable with the overall process, and learn programming concepts that you can apply to different languages, such as object-oriented concepts and how to write clean, extensible code.
Art
I have no art yet I must draw.

Artsy stuff. This is where you tight pants-owning, newsie cap-sporting, mustache-having, sweater-covered-in-cat-fur-wearing types get to shine!

I’m going to get into the meat of this section right away because you need to learn this early: the developers we interviewed all put emphasis on traditional art skills, not just digital, and not just 3d. I’ll let you process that for a moment… yes, video games are not made with pencil drawings because, well, real paper doesn’t lend itself well to be played on your TV screen. But everything up until the point where the art is made digitally, usually entails some form of traditional art, by drawing what the characters and environments will look like, sketching out storyboards, and being the guy or girl at the brainstorming meetings who draws what everyone is saying.

As the hiring process is getting more competitive, and art related jobs are generally less common than engineering ones, game companies are looking for people with solid traditional art skills. The theory is that you can teach a fine artist how to use a 3d modeling package or a drawing program very easily, while someone whose skill set is entirely digital-based may have a hard time working backwards and learning how to draw a tree. The fine artist; the person who always has a sketchbook with them and is constantly drawing what they see or think about, is extremely versatile and a valuable commodity to game studios.

What was very interesting about our interviews is that none those we talked to cared where you developed your skill… you can do so however you want, whether it entails a fine arts degree, taking art classes at a museum, or just grabbing a pad of paper and drawing your heart out. All that matters is your portfolio.

Of all the game development areas, the artist is most reliant on their portfolio to get the job. And we’re not talking all your Pokemon doodles here; we’re talking highly polished pieces. When choosing between a collection of a few high quality pieces and a whole binder full of unfinished or non-impressive sketches, the smaller and more professional portfolio wins every time. The takeaway here is to find your strengths, try different styles, and look up what other game artists are doing by visiting concept art forums and buying artbooks. Try to copy what they’re doing, figure out their process, and be able to demonstrate this ability to your interviewer. By the way, sharing your art on online art forums and communities is another great form of networking! And it’s free. And seriously, you’re already at your computer. There are thousands of artists out there ready to critique your work and help get you where you need to be. Just don’t pick an annoying username, keep your avatar PG-13, and get posting.

All this isn’t supposed to dissuade you from learning 3d modeling or digital art. You will need to learn these in order to actually make the games, obviously, but since we’re focusing on getting the interview and landing the job, the best advice is to work on your art skills in as many ways as possible and put together a highly polished portfolio to show these skills. How to put together a portfolio? Ask any fine artist or look around online. Artists have been preparing portfolios for years and it is integral to the craft. It is not an exact science, and it comes highly recommended that you have someone with more experience review your portfolio first. Finally, tailor your portfolio to the company where you are applying. If you know they are in the business of making huge 3d MMO’s, then show your modeling ability, and your ability to capture their art style (being able to show a concept drawing, and then the 3d model of it is really cool. All made by you, of course). If you’re applying to a smaller, social-games based company that targets mobile devices, then show some 2d art that matches their general style. Prove to them right away that when they hire you, you’ll be on the same page as their team.

Finally, and I hate to break your heart on this, having only anime in your portfolio will not cut it. It is not because it is not a respected art form, it is because many hobbyist and beginning artists choose to only draw anime just because it is what they like. However, you will not always be drawing what you like. You will be drawing or creating what the art director dictates, and I can assure you it will not always include disproportionately large eyes.

Quality Assurance
I want to do QA when I grow up.

Game tester. You get paid to play games. Kidding!
One of the most misunderstood jobs in the industry, the QA tester or QA engineer is a discipline in itself and has its own requirements just as any other job does. What you should realize and accept right away is that QA is a career in its own. It requires a problem solver, someone with a keen eye and ridiculous attention to detail, and the ability to reproduce weird bugs and write reports based on these freak occurrences in a way that an engineer can read what you wrote and immediately know what to do to fix it.

There are two facets that the budding game developer should know about QA. First, that as mentioned it is a real job and if you are the right kind of person and have an enormously high threshold for repetition, then this could actually be a viable long term choice for you. Secondly, QA truly is a fantastic way to enter the industry and learn the ins and outs of a company and their development process... and even figure out if this is something you want to do for a living in the first place!

Let’s focus on QA as a job. You are not playing a game for fun, jotting down notes about what you like and dislike, and then dictating to the designer or other team members what you want to see changed. That would be playtesting, and is not your jurisdiction, though you may be asked to perform this task every once in a great while if you’re at a smaller company and they want you wearing many, many hats. The QA job means someone will give you a very specific thing to test, such as the way the menu logo changes when certain menu items are selected; and you will try to break it. You will look at the logo for eight hours, turning off the device, turning it back on, changing options, rinsing, and repeating. You will hear the title screen music so many times that you’ll start resembling A Clockwork Orange’s Alex when he hears Beethoven after the brainwashing scene. And you will be doing this every single day. In order to endure this task which will seem tedious and trauma-inducing at first, you must be a patient person with a drive for perfection. You want your game to work, you want players to give it good reviews, and you are the last line of defense between the developers and when the game goes public.

When interviewing for this position, you’ll likely be meeting with the QA lead who will be tossing you all kinds of curveball questions to see how you think through problems and how you handle the pressure of not knowing exactly what is going on, and how you plan to address this lack of knowing. QA is often a process of exploration, you are hunting for these bugs, seeking to put them out of their suffering and free the development team of their ugly wrath. You will seldom know exactly where a bug is or when it occurs, but with your keen eye and knowledge of games you will find them and document them.

The second part that is worth discussing is that it is very true that QA is a fantastic starting point for anyone’s game development career. Most of the interviewees echoed this... and no, it wasn’t because we were in a large chamber. I mean they all pretty much said the same thing; game companies often promote from within QA, and will often employ people in that department to see how they handle working at a game company.

And... in my opinion, based on the research... QA is a great starting point for two of the jobs that are hardest to land straight out of college with no experience: the technical artist, and the designer.

Design

I make worlds out of toothpicks.

I have an idea for a game. Seriously guys, hey! HEY! Yes, hearing such things does get annoying, and I recommend you never open with such statements when doing your networking. However, if you DO have a lot of game ideas and feel that the designer position is right for you, then here are some pointers to help get you into the big, solid gold designer chair.

Getting hired as a designer with no industry experience is hard. As in... really hard. In fact, there is often never an entry-level position in design. But do not fret, there are avenues for you to show your design prowess. First of all, and this will seem similar to the engineering and art sections, you must practice your craft. As a designer, you should always be designing. That means writing game design documents, prototyping your ideas in game engines, and maybe having some side projects going where you are actively designing with a team. You do not need to be an expert coder or artist, but many of those we interviewed felt the designer should be able to pick up some coding concepts, since they will have to think algorithmically in their design process.

Some things you should know regarding the design position: you are not telling other people what to do, sitting back in your seat dreaming up names for your elvish characters and dictating what goes in the
game and what doesn’t. The designer figures out how things in the game are to work and communicates this to the development team as an equal team member. You will often be working under very tight constraints and looking at the same things over and over again (see the QA section), and will be expected to still be able to find creative ways to make the game successful within these constraints.

Though companies rarely hire fresh designers, we found in the study that they frequently hire designers from the QA department. Why is this, you ask? Don’t lie, I know you asked it. Well, in quality assurance you become intimately aware of a game’s mechanics and the processes that produced it. There are a lot of parallels here between the QA tester and the designer, with the obvious difference being that the designer is deciding what happens in the game while the tester is making sure that it actually happens the way it was designed. They are like two majestic forest animals drinking from the same pond.

But look, here’s the thing. It takes more than a love of games and all things game-related to be a designer. Our interviewees all expressed a desire to see well-rounded designers. Well-rounded in terms of what you know and, preferably, what you can do. Some things that were tossed out during the interviews were the ability to read music, being very well-read (and not just in manga or game magazines), and having hobbies you are passionate about that have nothing to do with games. Why would a game designer bother with such things? Surely a wealth of game knowledge is enough to help you design the next sandbox city environment. Well the philosophy behind this is that if all you know are games, you are creating worlds and mechanics based on what has already been done, and it is believed that good design is rooted in reality, not in other people’s creations. Having a knowledge of classical literature will be helpful when you least expect it, such as writing the mythology for a fictional game world.

Gamers with extensive game knowledge may make great game historians, toiling away in a very tiny museum somewhere, but won’t necessarily make the best game designers. The reverse, however, should be true.

**Soft Skills**

*On hygiene, and being an adult.*

This subject was so important, and brought up so often during the interviews, that it deserved its own heading and clever subtitle.

Look, we’re all adults here. At least, we should be. Being a game developer is hard. It is a real job (despite some of the stigma regarding games as being “for kids”) and the job is challenging. You will be expected to work long hours and often the thing you are working on does not even immediately resemble a video game. You have to be a dedicated engineer, artist, or other type and enjoy that sub-set of the video game making. If you wouldn’t enjoy being a software engineer at a big computer company, the chances are only marginally better than you’d enjoy it at a game company. It is serious work and you are doing things that are just as difficult as their more traditional counterparts. This is especially true for artists: drawing is drawing, no matter where you are or what time period you are in. If you don’t have drawing chops, a love of game art will not get you a coveted seat on the art team. You need to be a master of your craft and be able to demonstrate this mastery to your interviewer.

The other point that needs to be made is: don’t be a jerk, and don’t be annoying. It is pretty obvious as to what these mean, but in general, if you use the word “noob” in real life and are often identified by your loud obnoxious voice and fedora, you may want to consider some character development, and I don’t mean tweaking your game character’s stats. Being abrasive, cocky, and having a sense of entitlement will get you on the black list very fast. Yes, game developers are gamers themselves, but being a gamer and being a game developer are, at the end of the day, separate things. To be a developer you should have some humility, be able to take criticism, and admit when you are wrong. Showing these traits will give you a huge leg up because they are the traits of likable people.

As a game developer you will be in an enclosed area with hardworking, passionate people, and knowing when to be quiet, contemplative, and professional cannot be understated. You are not applying to be part of the LAN party, you are applying to be a professional in the entertainment business and you will be judged based on your talent and how you present yourself; not your high scores. Discussing your gaming accomplishments and game-related interests are of course great ways to break the ice.
and loosen up in an interview, because every game developer probably started on their path with a love for games, right? But don’t rely on games as a hobby to get you hired. Approach them from all avenues; as a player, as a creator, as a problem solver. And convey this approach in your interview.

And, finally, good hygiene is paramount. Seriously, I will repeat that this came up in nearly every interview. Yes, we’re all gamers and we tend to spend long hours playing them which can lead to some musty smelling shirts and greasy hair… but don’t let that carry over into the interview. Wash up and throw on some deodorant. It will show you have respect for yourself and those that will be working with you in close proximity. You’d be amazed by how fast an interview will go down the Mario pipe if your shirt is emitting some bodily-created smells.

Website

Hear their beautiful voices.

I hope these sections were of use to you, dear reader. But what if it wasn’t enough? What if my impeccable prose failed to satisfy your ravenous hunger for game industry knowledge? Well, you’re in luck. My team recorded every interview we conducted… you know, as in audio. We created a companion website to this article which has the recorded answers from every developer to every question we asked, which you can easily filter so you only hear the answers you are most interested in. Of course, every developer had amazing and informative things to say and came from a wide range of backgrounds, so I’d recommend hearing them all!

Check it out: [http://users.wpi.edu/~ajlinds/GameIndustryResearch/](http://users.wpi.edu/~ajlinds/GameIndustryResearch/)

If you have any questions regarding this study, you can reach my team at giresearch@wpi.edu

_Derrick Barth is a computer science student at Worcester Polytechnic Institute in Worcester, Massachusetts. He is currently working in the video games industry as a technical artist._