Careers in Gaming

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Job Title	Role
Animator	Game animators are responsible for the portrayal of movement and behavior within a game
Assistant Producer	Assistant producers work with a game's production staff to ensure the timely delivery of the product
Audio Engineer	Game audio engineers create the sound track for a game, including music, sound effects, character voices, and spoken instructions
Creative Director	Creative directors are responsible for the overall look and feel of a computer game
Development and Operations (DevOps) Engineer	DevOps engineers are responsible for creating an online infrastructure for a game, and ensuring the stability and security of the web services
External Producer	External producers ensure the successful delivery of a game while working externally from the game development team
Game Designer/ Developer	Game designers devise what a game consists of and how it plays, defining all the core elements
Lead Programmer	Lead programmers manage the programming team responsible for creating all the game's computer code
Game Programmer	Game programmers design and write the computer code that runs and controls a game
Lead Game Artist	Lead artists are responsible for the overall look of a game
Game Artist	Games artists create the visual elements of a game, such as characters, scenery, objects, vehicles, surface textures, and clothing
Level Editor	Level editors define and create interactive architecture for a segment of a game, including the landscape, buildings, and objects

Source: Creative Skillset, "Job Roles," 2016. www.creativeskillset.org.

game industry, and most end up collaborating on projects rather than working in isolation as in other careers.

Fine artists may find work as animators; character artists or modelers; concept, environment, technical, texture, or lighting artists; or art directors. Programmers may find themselves involved with engine, game play, physics, user interface, or artificial intelligence programming. The musically inclined could find jobs in the industry as audio programmers or engineers, composers, voice-over artists, or even Foley (sound effects) artists. Writers, designers, developers, and many more staff are also required to create video games that will amuse, educate, and enchant players.

A Competitive Field

Although the video game industry is certainly welcoming of a wide variety of disciplines and career directions, it is also a highly competitive field. Part of the reason for this is its obvious draw: playing video games for a living. But, of course, there is much more to it than that, and although working for a gaming company can certainly be fun, there is also plenty of hard work involved.

Cross-discipline STEAM (science, technology, engineering, art, and math) degrees come in handy in the industry, but it will take more than good grades to get a foot in the door. What employers are really looking for is a passion for video games and gaming as well as the creative ability to build new games. As John Newcomer, the creative director at Reliance Games, mentions in a recent interview with Digital-Tutors .com, "I want to see a twinkle in the candidate's eye that they're in this business because they want to be. There's a joy and passion to create games and entertainment. I want to know if the person has creative ability and how universal it is. They need to be able to dissect a game and tell me why it's fun or successful. What makes it tick?" Newcomer also notes that although knowledge of an array of digital tools, from Photoshop to Maya LT (and many more), is important, what is even more crucial to any new hire's success is his or her ability to communicate with the other members of the team. Combining soft skills like the ability to work well in groups, technical ability, and creativity is often just the right blend required for success in the video game industry.

Game Developer

What Does a Game Developer Do?

Game developers (or game designers) wear many hats. The bulk of their job is to establish a game's plot and develop its characters. Different types of games will necessarily have different types of plots and characters. For example, whereas first-person shooter games typically follow military or postapocalyptic story lines that require physical fighting to advance, quest games often involve solving puzzles to move forward in the game. The type of game usually dictates what kinds of characters will appear, offering players different personas with assorted traits that can help them succeed in the game. Game developers are responsible for designing different types of quests for players to embark upon, creating the levels for players to work through, writing story lines for characters to follow and dialogue for characters to say during the game, and even creating the mechanics of the game to make it run as planned. Developers are, ultimately, responsible for designing everything from characters to levels and puzzles to art and animation. According to an Econsultancy.com interview with Pete Low, a game designer at Chunk,

At a Glance:
Game Developer

Minimum Educational Requirements
Bachelor's or associate's degree

Personal Qualities
Creativity and storytelling skills; problem-solving ability; team player; strong written communication skills

Working Conditions
Indoors

Salary Range
About $58,253 to $100,690

Number of Jobs
As of 2014 about 1.1 million

Future Job Outlook
Growth rate of 14 percent or higher through 2024

A game developer, or designer, creates a story and its characters. The developer also oversees how all of the components of the game—including the story line, characters, rules, environments, and game play experience—come together.

Game design is the process of designing the content and rules of a game; the gameplay, environments, storyline and characters. A games designer may specialize in one category (level design, writing, balancing difficulty) or all depending on the size and complexity of the project. There are many components that go into making video games: art, animation, audio and user interface design. There can be script writing, creating systems of economy within the product itself, the wide variety of potential social components and more. It's my job to see how all of these can come together to achieve the game's goals—and then be able to communicate this vision to a wide variety of stakeholders.

Developers may also be involved in coding software, art direction, or graphic design. They may even be involved in beta testing prerelease versions of the game before sending it on to quality assurance

testers. Depending on the size of the studio they work for, some parts of a developer's job may also be similar to the role of a producer or director in the film industry, such as keeping the project on track and delivering the finished game to consumers on time.

Different types of game developers will be responsible for different aspects of game play. Game mechanics designers make sure that the rules of the game are properly defined, and environmental designers devise many different scenes (or environments) in which the game can be played. Lead designers coordinate all of the individual designers and help direct communication within the team. As leaders, they must also take charge to make important decisions about the game as a whole. For example, Tom, a lead designer at Firemonkeys Studios (part of EA Games), notes on the EA Games website that "as a lead, I have a sizeable say in the project's long-term direction. I also do a bunch of mentoring and helping people to achieve their career goals. It always gives me a thrill when one of the designers on my team has a great idea, creates some sweet content, or comes up with a clever solution to a problem. Makes me proud!"

How Do You Become a Game Developer?

Education

Students looking for a job as a game developer should strongly consider a degree or certificate in game design; this degree will focus on the skills most often required for game design and development, including knowledge of game theory, game planning, and strategy. Creative writing degrees can also prove useful as game designers must be strong storytellers with excellent character development skills. According to O*NET OnLine which groups game developers with software developers, about 62 percent of software developers have a bachelor's degree, 19 percent have an associate's degree, and 17 percent have attended some college but possess no degree.

Internships

Would-be video game developers should definitely apply for internships with video game companies that match their skills and

ambitions. Not only will an internship help provide valuable experience, but it can also be a foot in the door of the ultracompetitive gaming industry. Most, if not all, of these opportunities are paid internships, and some even include housing stipends or arrangements and cover participants' travel expenses. Blizzard Entertainment offers college students a chance to join its twelve-week summer internships, which take place at one of the company's three US locations (Austin, Texas; Irvine, California; or San Francisco, California). PlayStation also offers twelve-week summer internships, which are open to both undergraduate and graduate students.

Skills and Personality

Game developers are creative types with a passion to share their ideas for games and create entirely new worlds from scratch. Developers are also storytellers. They need strong storyboarding abilities to convey their vision to the design team through drawings of various scenes that need to appear in the game. Developers are also computer programmers with coding skills, which means they must strike the right balance of creativity and computer science. As part of finding this balance, developers need to be able to analyze creative suggestions as well as the practicality of achieving them—and all without losing sight of the intended audience. An article on the game review and news website ZTGD describes the qualities that make a successful game developer. Successful developers are those who ask themselves questions like

> Who is the player? What type of game is the intended outcome? . . . Game design will vary greatly depending on the answer to these two questions. Good analytical skills will help answer these questions and is the next favorable characteristic game developers are looking for. Being able to determine what part of the game is and is not working is important to a promising result. Video game players are looking for a game that grabs their attention right away and holds it.

The most successful developers are able to work well as part of a team. Game design requires many different moving parts and

developers can learn additional skills on the job and can receive pay bumps as they add skills and take on greater responsibilities. Or they can start their own companies, independently producing and publishing their own games. Although this option carries the most risk since developers must be able to do everything themselves (or hire staff to help with things they cannot), it also holds the opportunity for the greatest reward—particularly if a developer's games go viral or strike a chord within the gaming community.

What Is the Future Outlook for Game Developers?

Game developers have a bright future. There is a predicted growth rate of 14 percent or higher through 2024, according to O*NET. This is considered much faster than average. O*NET also projects 238,000 job openings for the same time period (through 2024), which means it is a great time to get in on the ground floor of the video game industry and work your way up to the level of developer. Consumers continue to have an insatiable thirst for new games; therefore, developers will always have plenty of jobs for the taking.

Find Out More

Game Center
http://gamecenter.nyu.edu

The website of New York University's Game Center, part of its Department of Game Design, has information about academic coursework and exhibitions, game design workshops, competitions, and conferences. It also provides information on the university's Game Center Incubator, which helps students develop their games for the marketplace.

Game Industry Career Guide
www.gameindustrycareerguide.com

This is an information hub for video game career seekers, offering lots of practical advice for landing a job in the industry. Game industry careers are profiled in detail; and students can also find information about writing résumés, applying for jobs, networking, and interviewing.

Kotaku

www.kotaku.com

Both professionals and avid gamers present news and opinions about video games here. This site is a good place to find out about lots of different games—without having to actually purchase and play them all—as well as to keep track of the latest industry news through some of its biggest fans.

Values at Play

www.valuesatplay.org

This website is aimed at helping designers to be more intentional about integrating diversity and human values into games and game-based systems. Students can explore game tools and curriculum, conduct research, explore resources, and watch video interviews with experts in the field.

We Are Game Devs

www.wearegamedevs.com

This website celebrates diversity in the video game industry and features extended interviews with game developers, designers, artists, animators, programmers, and more. Women and people of color are specifically highlighted, with the aim of promoting and expanding the industry's inclusion of them. Readers can also help steer the discussion by making suggestions for new developers to interview.

Interview with a Game Designer

Sande Chen is currently a freelance writer and game designer. She is also the leader of the Game Design Special Interest Group for the International Game Developers Association and has worked in the video game industry for more than fifteen years. Chen runs the popular game design blog *Game Design Aspect of the Month* and is both a Writers Guild of America- and Grammy-nominated video game designer and writer. She discussed her career with the author via e-mail.

Q: Why did you become a video game designer?

A: Game design was the perfect blend of analytical and creative endeavors for me. It utilized my majors from college, economics, and writing. While a lot of people can see the creative side to design, there is a mathematical part that really appealed to me.

Q: How does math come into play when designing a video game?

A: An understanding of mathematics is needed for game design (and indeed, the whole of game development). Even if we look at a simple game, like a platformer, there is mathematics required for actions like walking or jumping. There is a basis in physics. The mathematics requirement can be very complex, especially for games that require the use of algorithms or AI [artificial intelligence].

Game balance ensures that a game is fun for a player. There needs to be the right level of challenge or the player will find the game too easy and get bored. The player will not be having fun. If the game is too difficult, then the player will get frustrated and may quit the game. Game balance is also about ensuring that there is

no golden path to victory. For example, if you have many different kinds of weapons, then the stats of the weapons need to be balanced so that they are all viable choices. If players find that one weapon is overpowered compared to the other weapons, they will only use that weapon. Every aspect of a game needs to have balance, including character stats, combat abilities, reward tables, etc. . . . When it comes to balancing the game, game designers may spend lots of time in front of spreadsheets and manipulating numbers.

Q: Can you describe your typical workday?

A: I work on various projects. Some time is spent on research, which could be viewing YouTube videos, reading reference books, or playing related games. But the bulk of the time is spent on creating documents. Game designers are often the social glue between artists, producers, and programmers. They need to be in good communication with all of these interested parties and get their buy-in to proposed ideas. One important thing about game design documents is getting other people to read them.

Beyond team mechanics, sometimes a game designer is involved in the pitch to publishers or other funders. This kind of game documentation will have to be succinct and understandable to laypeople.

Q: What do you like most and least about your job?

A: What I like most is that because the subject matter from game to game is so varied, I usually end up learning something new about the world. While I may not be faced with a zombie apocalypse any time soon, I can apply the same precautions about sheltering in place to other more plausible situations. What I like least is the public sentiment that I don't have a real job or I must be playing video games all day.

Q: What personal qualities do you find most valuable for this type of work?

A: One should be naturally curious about how systems work, how one thing affects the other, and the interconnectedness of everyday life. Famous [video game] designers like Shigeru Miyamoto take inspiration from daily life.

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