



Video Games

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Engineering Design Process

1. Ask

- a. What new video game can we design that will become popular with our consumers?
- b. Constraints such as budget and workers exist.

2. Imagine

- a. Violent video games are popular.
- b. Who is our target audience and how can we reach them the best?





Engineering Design Process

3. Plan

- a. We're starting to design the game (look at design above) and code for what happens.
- b. All we need is the technology required to make this video game and the people who will program it.

4. Create

- a. We've developed the game and maybe even released it to the public. How do they like it?

5. Improve

- a. What are some glitches in the game? Complaints of the people? Let's go back and make a sequel to this that will be better.

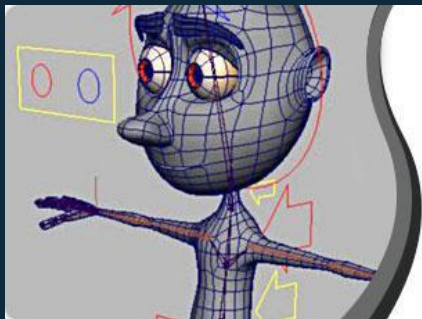




Career Fields: Multimedia Artists and Animators (1)



- ◇ Job description
 - These people create animations and visuals for games, apps, movies, etc. In the field of video games these careers are essential to the graphics and making of setting, characters and interface.
- ◇ Average Pay
 - \$63,970 per year
 - \$30.76 per hour






Career Fields: Multimedia Artists and Animators (2)

- ◇ Education
 - Usually to find work in this field, a bachelor's degree in computer graphics, art or any related field is recommended.
- ◇ Job Outlook
 - 64,400 current jobs
 - 6% projected growth (average)
- ◇ Example Biography
 - Chuck Jones is one of the most inspirational and famous animators. He is famous for his works of The Road Runner, Wile E. Coyote, and even contributed to Daffy Duck and Bugs Bunny. He received Oscars for his work.





Career Fields: Software Developers (1)

◇ Job description

- Software Developers create and program operating systems, applications and help create systems that may be used to control a network. These men and woman have to contain creative minds and usually show it off in their work. They can show off their skills in programming software for video games.

◇ Average Pay

- \$100,690 per year
- \$48.41 per hour





Career Fields: Software Developers (2)

- ◇ Education
 - A bachelor's degree usually in computer science and having some programming skills.
- ◇ Projected Job Growth
 - 1,114,000 current jobs (2014)
 - 17% projected growth (faster than average)
- ◇ Example Biography
 - "Software is a great combination between artistry and engineering." - Bill Gates (Businessman for largest PC software company, Windows)





Network and Computer Systems Administrator (1)

◇ Job Description

- These workers are in charge of the everyday operation of networks and computer systems. This job can be applied to video games because many modern day games contain the option to play online so admins must be needed to control the servers the games are on.

◇ Average Pay

- \$77,810 per year
- 37.41 per hour





Network and Computer Systems Administrator (2)

- ◇ Education
 - Most employers look for people with a bachelor's degree in computer or information science. A postsecondary certificate may only be required for some.
- ◇ Job Outlook
 - 382,600 current jobs
 - 8% projected growth (average)
- ◇ Example Biography
 - "A great opera house isn't run by a director, but by a great administrator."- Steven Berkoff





Constraints on Console Developers

- Console developers have many constraints while they develop new gaming consoles.
- Budgets
- Team
- Development Time
- Working with video game developers
- Supply





Budget Cuts on Developers

- Like many manufactured things following the Engineering Design Process, companies have budgets or a limit to how much they want to spend developing a console.
- These limitations have to be able to pay for the whole project. Budgets are supposed to cover...
- Payment for the whole team
- Resources
- Work area
- Tools





Constraints of Team

- ❖ There are also constraints of team quality and quantity. Teams are groups of developers working on the same project or part of the project. Not all teams have the amount of people working on the project as would be preferable.





Development Time

- Most projects that follow the Engineering Design Process have a time limit on how long they need to work on the project until they have to show what they have. (Kind of like a school project)
- Many times the team doesn't have the time necessary to finish their project, the end result usually is an unfinished game with a bunch of “crap” put into it to substitute for the missing content and features.
- The gaming community usually ends up hating the project no matter how much work put into it and makes it a trend to hate the product.





Other video game companies

- A disadvantage game console companies have is working with developers of video games.
- Some companies are concerned with certain types of video games, consoles have to adapt to what the developing community is doing.
- If a company does VR games (virtual reality), consoles have to make their software compatible with their system.
- Some companies may have really high requirements like a good graphics card or a lot of RAM to run their game. Companies have to make their technology good enough to fit expectations.





Supply

- Manufacturers have to have enough supply to satisfy customers
- On release dates (usually for big gaming companies like Sony, Microsoft and Nintendo) people pack stores trying to get a console. (Kind of like Black Friday)
- People camp outside stores, pay others for line spots, and some people don't end up getting what they pre ordered on launch day.
- This is good news for companies and bad, it's good they're able to sell all their supplies but the bad news is they are left with a lot of customers complaining that they didn't receive their product.





The Impact of Video Games on Society

Many adults have been given the impression that video games will continue to have a negative effect on our society. While there are opposing views to these entertainment devices, beneficial assets have been shown as well. For instance, since video games have become a popular type of leisure activity around the world, people have been given the opportunity to connect with people of other cultures. The individuals who play these games have created online communities to share their interest with others who have taken a liking to the game. These communities can have an impact on improving the social skills of people of all ages while amusing themselves with these activities.





The Impact of Video Games on Technology



Additionally, the communities are able to become educated on other cultures that exist in our world today besides their own. There have even been conventions to allow these gamers to connect outside of the game. These online gaming communities can create a type of connection with a person that will last a great deal of time. And to think, you'll be able to recall meeting your friend by saying "We met through this gaming community and were instantly bonded by our similar interests!"





Solution to Real-World Problems

Video games...

- ◇ help slow down aging in the brain.
 - This also helps patients of mental diseases such as Alzheimer's.
- ◇ help train people to make good decisions faster.
 - People who play action-filled video games have been proven to make accurate choices 25% faster.

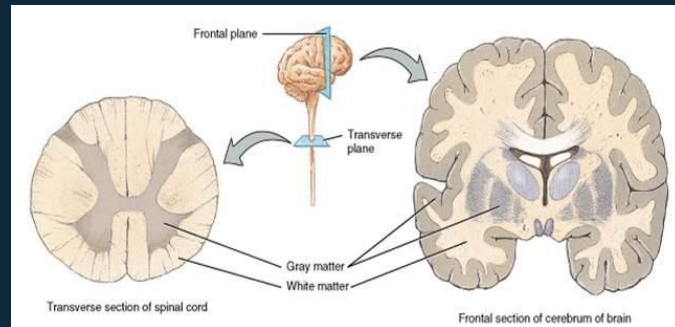




Solution to Real-World Problems

Video games...

- ◇ increase multitasking abilities.
 - Games that involve things such as car racing increase the gray matter in the brain.
- ◇ improve vision.
 - Action first-person shooter games also have been shown to refine player's ability to detect fine differences between colors.
- ◇ help children with dyslexia have better vision.
 - Video games increase attention span, leading to better reading skills.





Solution to Real-World Problems

Video games...

- ◇ help people get over phobias and PTSD.
 - Virtual reality video games are used to flex people's brains to overcome certain fears.
- ◇ improve motor skills in young people.
 - Studies suggest that interactive games such as Wii improve hand-eye coordination in pre-schoolers.





Thank you for watching!



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