

Genres

Fundamentals of Game Development

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Game Genres

- There are about a dozen or so different types of video games, depending on how you decide to classify them.
 - Each video game belongs to one or more of these genres.
- While games in the same genre can look vastly different, they share many of the same properties.
 - Similar design issues and problems.
 - In some cases, similar gameplay mechanics.

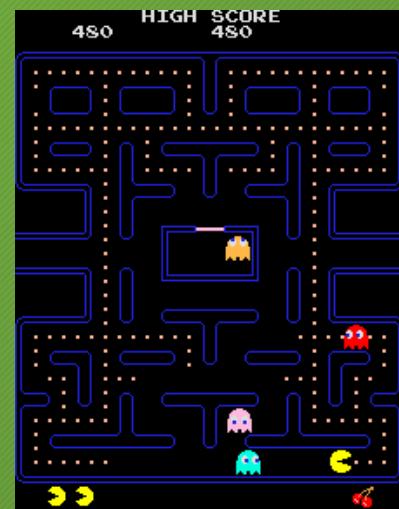
Action Games

- The general idea is to keep the player moving and involved at all times.
- The most important skills for a player are hand-eye coordination and quick reflexes.
- Deep thinking is generally not required.
 - Some action-adventure games need some puzzle solving abilities.
 - Some action games also benefit from tactical or strategic thinking abilities.

Action Games



Call of Duty
Modern
Warfare 2
(FPS)



Pac-Man
(Maze)



Super Mario
Galaxy 2



Metal Slug
(Shooter)

Action Games: Point of View

- Having a good point of view is crucial.
 - The player must be able to see the action well in order to respond to it.
- Typically have a choice of first or third person.
 - First-person:
 - Tend to be faster paced and more immersive, but cannot easily “identify” with the character.
 - Third-person:
 - Good for action-adventure games as you can better see the character as he or she is being controlled.
 - Also allows one to better identify with character, which is important if emphasis in the game is placed on the main character (e.g. Lara Croft, Mario, ...).

Action Games: Point of View



Screen shot from Splinter Cell. A very impressive game, but some people found they spent as much time moving the viewpoint as moving their character.

Action Games: Point of View



Screen shot from Dino Crisis 3. The action in this game is pretty intense ... it's a shame that the horrible camera angles prevent you from seeing most of it though!

Action Games: Level Design

- Good level design is crucial to the success of an action game.
 - Must be both visually appealing and functional, not sacrificing the speed of action just for looks.
 - Must reflect the story behind the game.
 - Must be well structured and able to regulate the flow of action in the game.
- Often it is careful balancing act.
- More on level design later!

Action Games: Level Design



Screen shot from Call of Duty Modern Warfare 2. The levels in this game are well designed and beautiful to look at too!

Action Games: Weapons

- Weapons are often an important part of most action games.
 - They must be appropriate to the setting.
 - They must have interesting characteristics that encourage players to use them.
 - They must be well balanced.
 - They must be synchronized with the difficulty of opponents faced in the game.
 - They should be accompanied by good special effects, both in terms of graphics and sound.

Action Games: Weapons



Screen shot of Potty Pigeon. With a name like Potty Pigeon, you just know what your weapon against those cars is going to be ...

Action Games: Weapons



Screen shot from Unreal Tournament 2003. There is nothing quite like the feeling of carrying around a weapon that fires miniature nuclear warheads. A very cool weapon.

Action Games: Weapons

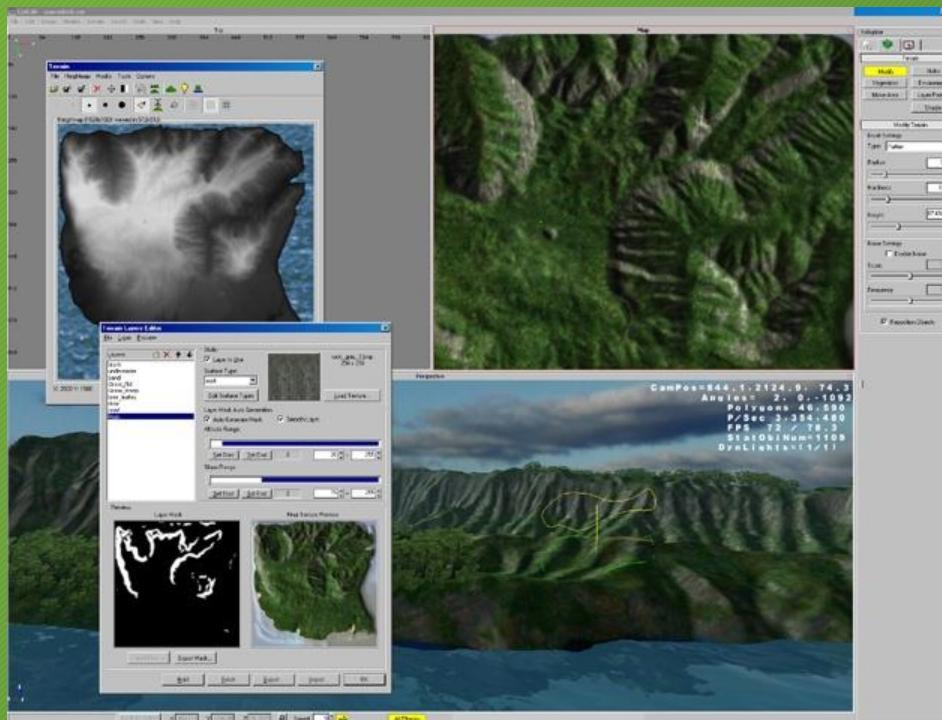


Screen shot from Armed & Dangerous. This game had some really unique and interesting weapons. What's not to like about a land shark gun?

Action Games: The Game Engine

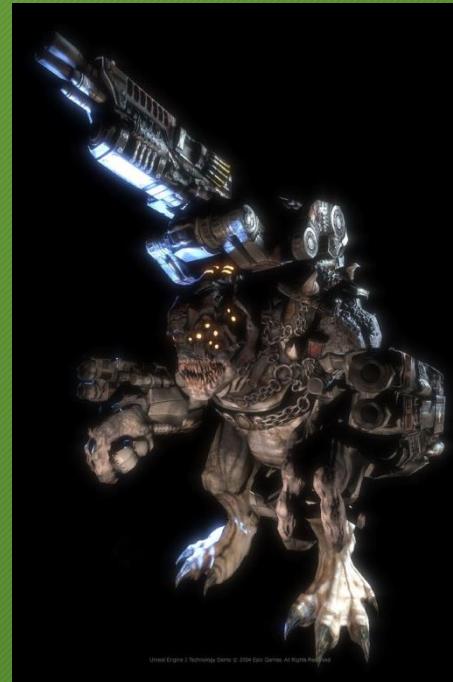
- Build your own, or license one from a developer or middleware provider?
- Building your own ...
 - Get exactly the features and functionality you need for your game.
 - Costly in time and money to develop.
- Licensing an engine ...
 - Usually cheaper than developing your own, and you don't lose time in the process.
 - Often get lots of features, some you don't need.

Action Games: The Game Engine



Screen shot from Crytek's Cryengine game engine editor.

Action Games: The Game Engine



Screen shots and movies from Epic's Unreal 3 engine.

Action Games: The Game Engine

- Issues to consider in choosing an engine to license:
 - Ease of use.
 - Cross-platform capabilities.
 - Look-and-feel.
 - Support.
 - Availability.
 - Extendibility.
 - Cost.

Role-Playing Games

- These games revolve around characters, story, and combat.
 - Make sure these elements are done right!
- Take place in large expansive worlds.
- Frequently played over dozens or even hundreds of hours.
 - The players will spend a lot of time with this game, so it is important that things like the user interface are done very well.

Role-Playing Games (RPGs)



Final Fantasy XIII



Fallout New Vegas



MASS EFFECT



Super Paper Mario

Role-Playing Games: Character Growth

- Characters should begin weak and vulnerable.
 - They gain strength and abilities through carefully arranged encounters and alliances.
 - In the end, they should be able to handle any villain.
- Players should have choices.
 - What attributes their characters possess.
 - What classes their characters belong to.
 - Ultimately, there must be limits on their choices to ensure balance in the game.
 - Players should also be able to choose to let the game do all of this for them.
- Players can grow personally attached to their characters ...
you must facilitate this feeling.

Role-Playing Games: Character Growth

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Screen shot from The Tales of Trolls and Treasures, an open source RPG project. This is a shot of a character/party generator screen.

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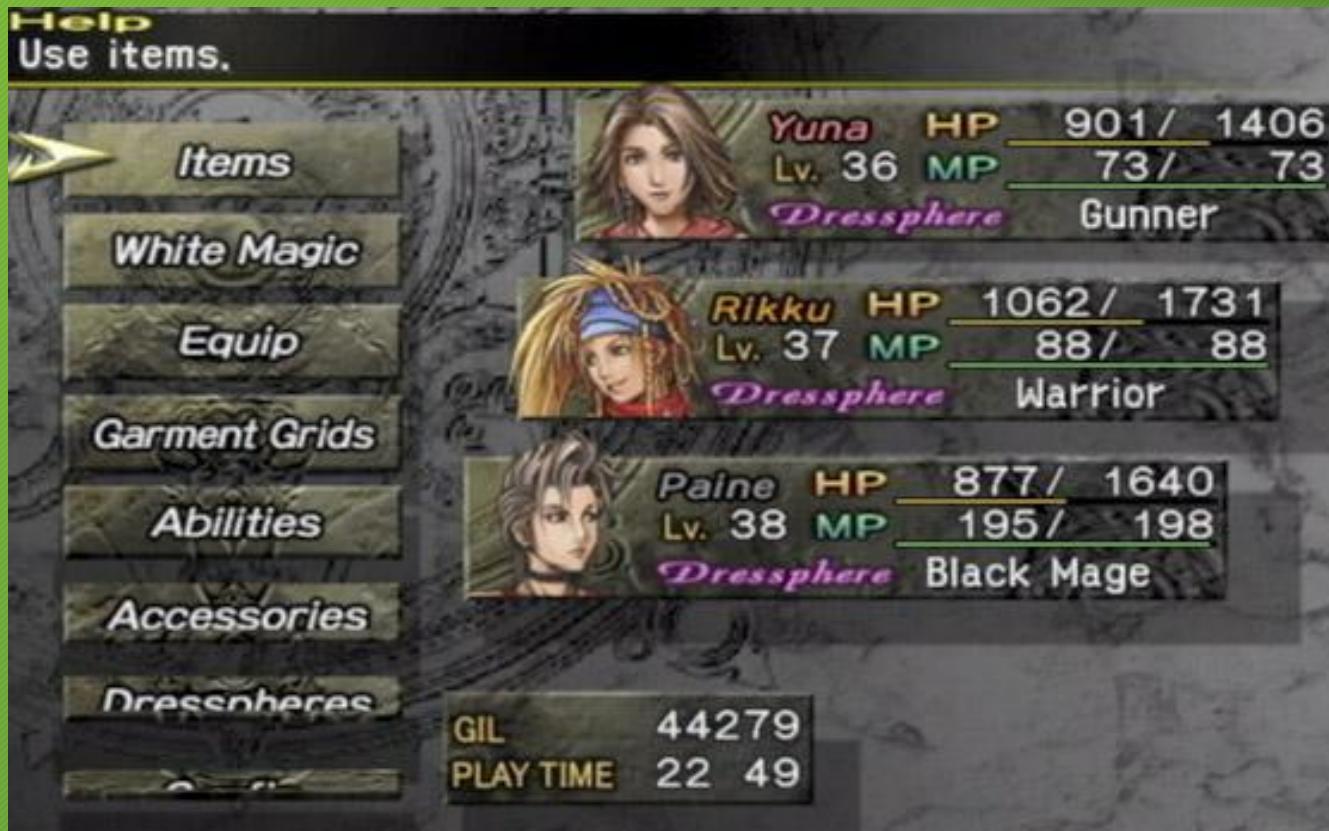
Role-Playing Games: Statistics

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- Statistics play a critical role in this genre.
 - The attributes of each game element must be specified, as well as its interactions with other elements.
- Some players like this aspect of the game, and want to micromanage everything.
 - Others just want to get into the action and adventure, and skip over the micromanagement.
 - Allow both styles of play.
- Statistics are at the heart of this kind of game, but be prepared to hide them if the player doesn't want to be involved with them.

Role-Playing Games: Statistics

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Screen shot from Final Fantasy X-2. Statistics can be as simple as hit points or magic points, but can also be more detailed and complex.

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Role-Playing Games: Story

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- The story in an RPG is important.
 - Typically the story is delivered and told through a series of quests or missions.
 - This allows the player to explore the world and learn more about its inhabitants.
- Should the story be linear or nonlinear?
 - Usually best to give the player a small number or cluster of quests or missions at a time.
 - This way, the player has a choice in how the story unfolds, but isn't overwhelmed by too many choices.
 - The player should have several immediate goals, one or two midterm goals, and one final goal.

Role-Playing Games: Story

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Screen shot from Final Fantasy XIII. The Final Fantasy series has always been known for its elaborate and interesting story lines.

Role-Playing Games: Combat

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- Combat plays a key role in RPGs.
 - Design an interface that handles encounters gracefully and gives player a feeling of control.
 - Whether the game is real-time or turn-based, give the player a chance to make meaningful choices in combat situations.
 - Do not overwhelm the player ... give them the chance to learn and master combat.
 - The first hour of gameplay is the most crucial ... if the game is hard to learn and the player is killed again and again, the player will be frustrated and give up on the game.

Role-Playing Games: Combat

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Screen shot from Dungeons & Dragons: Heroes. This is an action-RPG with some interesting combat and magic systems.

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Adventure Games

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- Adventure games are primarily defined by their story and puzzle elements.
- If either one is done poorly, the game will suffer greatly as a result.

Adventure Games

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```
West of House
Score: 0      Moves: 2
ZORK I: The Great Underground Empire
Copyright (c) 1981, 1982, 1983 Infocom, Inc. All rights reserved.
ZORK is a registered trademark of Infocom, Inc.
Revision 88 / Serial number 840726

West of House
You are standing in an open field west of a white house, with a boarded front
door.
There is a small mailbox here.

>open mailbox
Opening the small mailbox reveals a leaflet.

>read leaflet
(Taken)
"WELCOME TO ZORK!

ZORK is a game of adventure, danger, and low cunning. In it you will explore
some of the most amazing territory ever seen by mortals. No computer should be
without one!"
```

Zork I (Text Adventure)



Myst V: End of Ages
(Graphical Adventure)



Uncharted 2: Among Thieves (Action-Adventure)

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Adventure Games: Story

30

- If you do not have a good story, you will not have a good adventure game.
- It is up to the game designer to decide what the story is.
 - You must decide what the story is about and build the player's activities around that central theme.
 - You must create interesting people, in interesting places, doing interesting things.

Adventure Games: Story

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Screen shot from the Uncharted 2: Among Thieves. It has a very interesting story that unfolds as you progress through this action-adventure.

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Adventure Games: Puzzles

32

- After the story is developed, it is time to place obstacles between the player and their goals.
 - These obstacles tend to be puzzles.
 - They must flow naturally from the setting and story.
- A good puzzle provides a pleasant, temporary frustration that leads to that moment of inspiration when the puzzle is solved.
- A bad puzzle leaves the player angry, resentful, frustrated, and distrustful of the game and its designer.

Adventure Games: Puzzles

33



Screen shot from Indiana Jones and the Emperor's Tomb. This action-adventure has many puzzles to solve, including when to use Indy's trademark whip to get to that unreachable platform.

Adventure Games: Puzzles

34

- Some quick tips on puzzle design:
 - Each puzzle must be appropriate to the setting. It must be reasonable for the obstacle to be there, and when the puzzle is solved, the player should know why the solution worked.
 - Puzzle ideas can be derived from the villain of the story ... how is the villain likely to interfere with the hero's progress?
 - The puzzles must make sense. The player should have enough clues in advance to solve them.
 - Every puzzle is a storytelling opportunity. Each puzzle should somehow advance the story.

Adventure Games: Interface

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- The interface must be kept simple.
 - The player should be able to do as much as possible with a minimum amount of effort.
 - The player would be happier with an interface with basic functionality than one that has many features that is harder to use.
- Keep in mind the things the player will need to do in solving the puzzles to advance the story along. The interface must reflect this.
 - Exploration, communicating with other characters, examining the environment, object-on-object interactions, using inventory, and so on.

Adventure Games: Interface

36



Screen shot from Assassin's Creed 2. This action-adventure game has a simple interface that does not get in the way of either the fighting or acrobatic sequences.

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Adventure Games: Linearity vs. Nonlinearity

37

- Players do not like it if they cannot make meaningful choices.
- If you give a player too many choices, however, they can get lost.
- A good solution is to design a linear series of open environments.
 - In each open area, the player has many activities that can be pursued in any order as the player deems appropriate.
 - When done, the designer closes off the area, does some storytelling, and moves to the next area.

Adventure Games: Linearity vs. Nonlinearity



Screen shot from Okami. Okami delivers a very full and rich adventure, providing several large open areas with a lot do to in each, but with some linear structuring between them to control the flow of the game. Well done.

Adventure Games: Linearity vs. Nonlinearity

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Screen shot from Evil Dead: A Fistful of Boomstick. This game has many tasks in each open level, managed by a “to-do list”. There is some linearity between tasks to maintain the story line, but the player has a lot of choice.

Adventure Games: Exploration

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- Players are curious ... they should be given the chance to explore the game world, within the confines of the story.
- Be careful not to give them total access to everything at once.
 - It can be overwhelming and they could get lost.
 - It leaves nothing left as a surprise to explore.
- Instead, use access to new places a reward for completing puzzles and to show the user that progress is being made.

Adventure Games: Exploration

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```
Kitchen                                     Score: 10      Moves: 9
You are facing the south side of a white house. There is no door here, and all
the windows are boarded.

>e
Behind House
You are behind the white house. A path leads into the forest to the east. In one
corner of the house there is a small window which is slightly ajar.

>open window
With great effort, you open the window far enough to allow entry.

>enter window
Kitchen
You are in the kitchen of the white house. A table seems to have been used
recently for the preparation of food. A passage leads to the west and a dark
staircase can be seen leading upward. A dark chimney leads down and to the east
is a small window which is open.
On the table is an elongated brown sack, smelling of hot peppers.
A bottle is sitting on the table.
The glass bottle contains:
  A quantity of water

>
```

Screen shot from Zork I. Perhaps nowhere else is more exploration possible in a game than a good old fashioned text adventure.

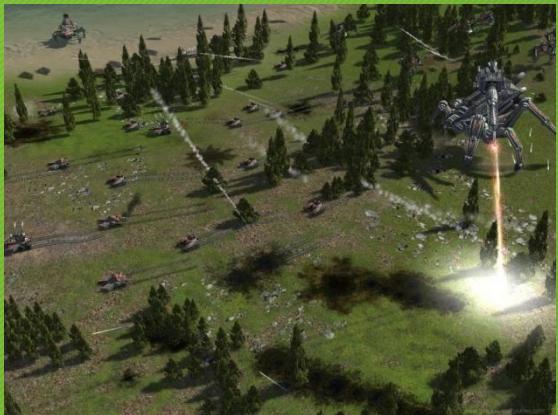
Strategy Games

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- Balance is key to strategy games.
 - Unless exact symmetry is being used, this will require thousands of hours of play testing.
 - There will likely be a continuous loop of playing, tweaking, more playing, more tweaking, and so on.
- It is important to have a playable version of the game ready early on to permit play balancing.
- This balance applies to everything, including strategies and approaches used in the game.
 - If one strategy always succeeds against all others, the game will cease being fun to play.
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Strategy Games

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Supreme Commander



Full Spectrum Warrior



Command and Conquer



Starcraft 2



Rome: Total War

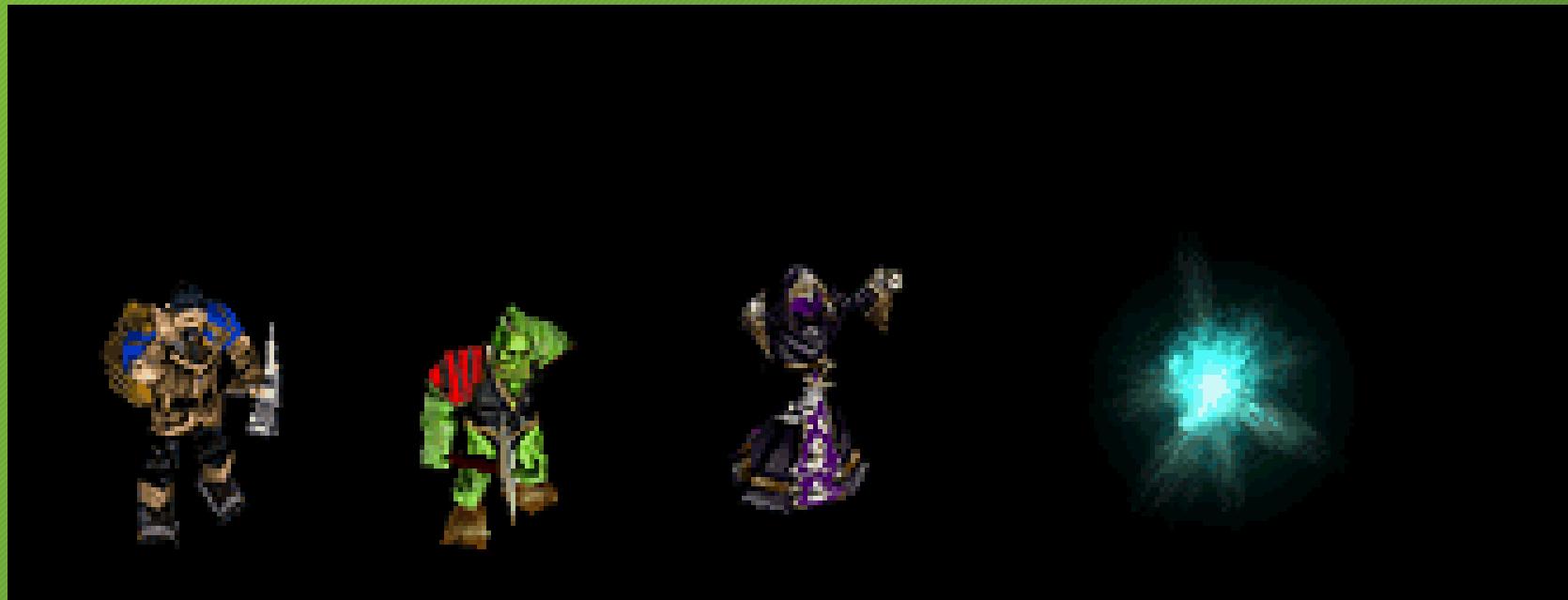
Strategy Games: Resources

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- The amount of raw material must be balanced.
 - Too much, and players will never have to make hard decisions about it.
 - Too little, and players will worry too much about this aspect of the game, and not enjoy it.
- The material must also be spread throughout the environment to ensure each player has reasonable access to the resources.
- Lastly, the rate of resource consumption and unit production must be balanced across players and units.

Strategy Games: Resources

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Images from Warcraft III. The peasant, peon, acolyte, and wisp are the basic resource collectors/builders of the different races of the game. The peasant and peon are more traditional gatherers and builders, collecting the gold and lumber resources for their teams and constructing buildings. The acolyte and wisp rely on magic and summoning to put a different spin on the whole resource collection and building process.

Strategy Games: Teams

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- Many earlier strategy games have two teams of opposing forces, but more modern ones tend to have more.
- Regardless, each team in the game must have an equal chance to win.
- A good strategy player should be able to lead any side to victory.
- In other words, the teams must also be well balanced.

Strategy Games: Teams

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Screen shot from Warcraft III. This game featured four different races, all of which were well-balanced against the other.

Strategy Games: Units and Weapons

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- Weapon and unit strength is important.
 - If everyone uses the same weapon or unit, it is likely too strong and should be made less effective.
 - If one is always ignored, it should be made better in some way.
- Each should have distinguishing characteristics, both visually and functionally.
- For interesting gameplay, the same units and weapons should not be given to all sides.
 - But, each side should have a defensive weapon or strategy for every offensive weapon created.
 - This helps to maintain balance in the game.

Strategy Games: Units and Weapons

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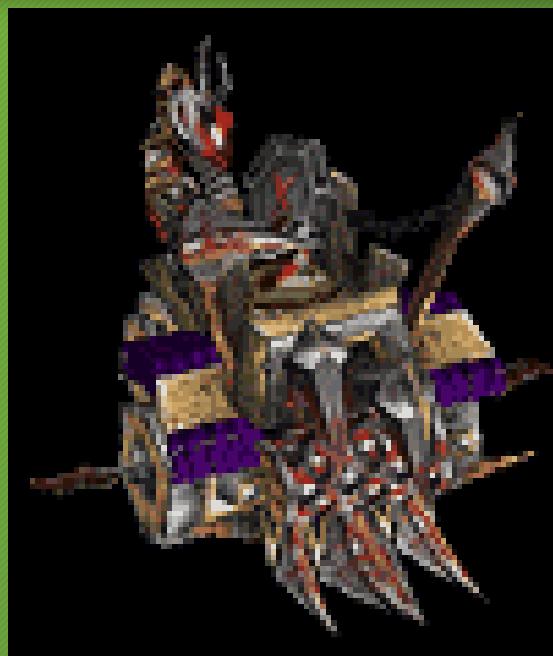


Image from Warcraft III. This is a picture of the Meat Wagon, a unit of the Undead race. It can collect corpses from the field of battle and store them for future reanimation, or can use its Meat-A-Pult™ to fling them back at the enemy. This is a good siege weapon, but is open to up-close melee attacks, or attacks from the air. Like all Blizzard games, the units in Warcraft III are unique and well-balanced.

Strategy Games: Realism vs. Fun

50

- If it comes down to realism or fun, fun should almost always win out.
- Even though units in a game often have real-world counterparts, it might be more fun or better balanced to have slightly different behaviour.
- It is a good idea to start with the real world in defining such behaviour, but ultimately, the game must be fun!

Strategy Games: Realism vs. Fun

51



Screen shot from Starcraft. Siege tanks have some interesting characteristics that make their use more fun and interesting, even if they are not as realistic or behave the same as real-world tanks.

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Strategy Games: Artificial Intelligence

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- Artificial intelligence in strategy games is important.
 - If the computer always takes the same strategy or makes the same choices, the game will soon cease to be fun.
 - It can be difficult to balance the difficulty of the game ... the computer should neither be too easy or too difficult to defeat.
- Game designers must be clear on what behaviour is appropriate in certain game situations.
 - A certain amount of randomness is good too!

Strategy Games: Artificial Intelligence

53



Screen shot from Warcraft II. When playing multiplayer games against the AI, there was little variation in the AI's tactics. Consequently, the game in this mode was usually easy to beat, once the pattern was identified.

Strategy Games: Testing

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- Since balance is critically important to strategy games, so is testing.
 - An improperly balanced strategy game ceases to be fun quickly.
- Inside testing is crucial.
- If resources exist to support it, open beta testing with real end users can be incredibly useful as well.
- The more testing, the better!

Strategy Games: Missions

55

- Organize each mission around a single premise.
- Variety is important ... change the themes and structure of missions throughout the game.
- Quality is also more important than quantity.
 - It is better to have fewer missions that are well done with a lot of variety than lots of missions where the players keep doing the same things over and over again, and gets bored as a result.
- Make sure the player understands the objectives of each mission.
 - A cut scene is good at doing this.

Strategy Games: Missions

56



Screen shot from Warcraft III. A quest is assigned. There are a wide variety of missions and quests in the game, most of which are quite entertaining.

- Simulations require a substantial amount of depth.
 - Often, a great deal of research is required in developing good simulations.
- Simulations tend to focus on one piece of equipment or activity and mines that experience for all its worth.
 - If you do not capture this well, your simulation is in big trouble.

Simulations

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Gran Turismo 5



Rail Simulator



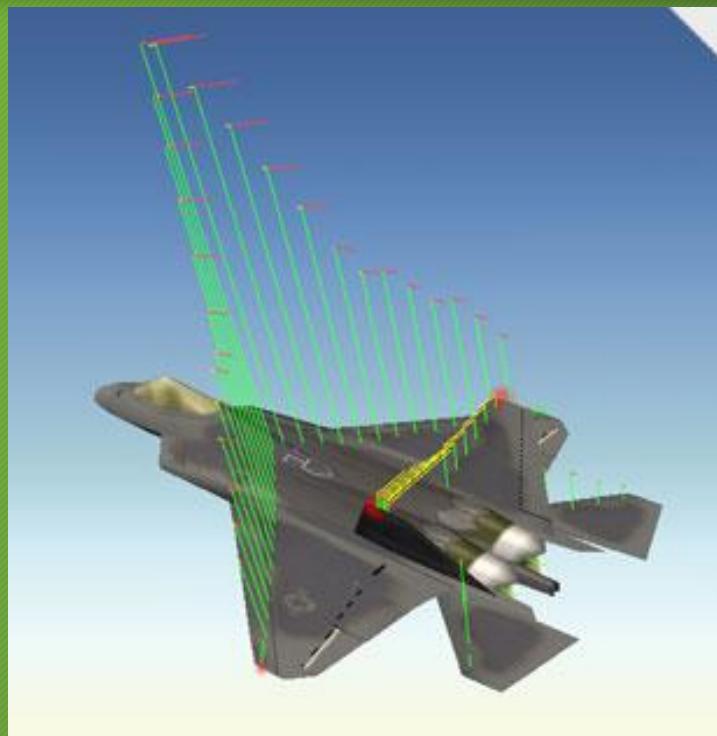
Microsoft Flight Simulator

Simulations: Hard-Core vs. Casual

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- After deciding on your target audience, tune the reality of your game accordingly.
- For the hard-core ...
 - No detail is too small to get right.
 - The physics model must be accurate.
 - Everything must be as close to real life as possible.
- For the casual gamer ...
 - They want to get in and go with minimal fuss.
 - They want simplifications, in controls and elsewhere.
 - They should be able to have some measure of immediate success; total mastery should require knowing the finer points of the game.

Simulations: Hard-Core vs. Casual



Screen shot from X-Plane, showing lift and drag vectors calculated in real time. This game has a devoted community of flight enthusiasts and developers who are striving to make it the most realistic flight simulator ever. In fact, flight characteristics are calculated in real time from aircraft design data.

Simulations: Hard-Core vs. Casual

61



Screen shot from Microsoft Flight Simulator. Real world weather data can be downloaded from the Internet in real-time, and your position and heading can be used to render accurate star maps, giving a very realistic feel to the game. Nice touches for both the casual and the hard core.

Simulations: Interface

62

- The more functionality a game has, the more complex the interface becomes.
- Even for hard-core simulations, the interface should be kept as simple as possible, however.
 - It may have a lot of controls and options, but the interface should still look clean.
 - If the interface is cluttered, the game will become difficult to use.

Simulations: Interface

63



Picture of Microsoft Flight Simulator on 9 computers and 13 monitors. Wideview software was used to split the game image. Such a nice interface that the player even needed a seatbelt to be strapped in place!

Simulations: Interface

64



Picture of the Real Virtual Car. Not to be outdone, racing fans have built a racing simulator in a Renault Megane, complete with steering wheel, pedals, a gear shifter, and gauges that work!

Sports Games

65

- People that play sports games tend to be fans of the sport.
- They are usually well versed in the rules of the game, its history, and the athletes currently involved in the sport.
- It is important to give a good portrayal of the sport in your game, because they will notice it and will not be pleased otherwise.

Sports Games

66



NHL 11



Kinect Sports



Skate 3



Madden NFL 11

Sports Games: Know the Game

67

- It is critically important to get the rules and traditions of the sport done right.
 - Consult the official rule book when designing the game, and use it frequently.
 - Check the history books and follow them.
- Knowing the rules does not mean you cannot let the players change them!
 - The player should be able to customize the rules or turn off rules that they do not want applied in their own games.

Sports Games: The Meta-Game

68

- A sport is not just played on the field or in the arena ... it is also played from the bench and in the front office.
 - Coaching decisions.
 - Management decisions.
 - Owner decisions.
- It would be nice to have all of these features in a game.
 - If they are not included, make sure that the user knows this from the box.

Sports Games: The Meta-Game

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Screen shot from Madden NFL 11. This Madden series of football games has long had a good collection of meta-game features.

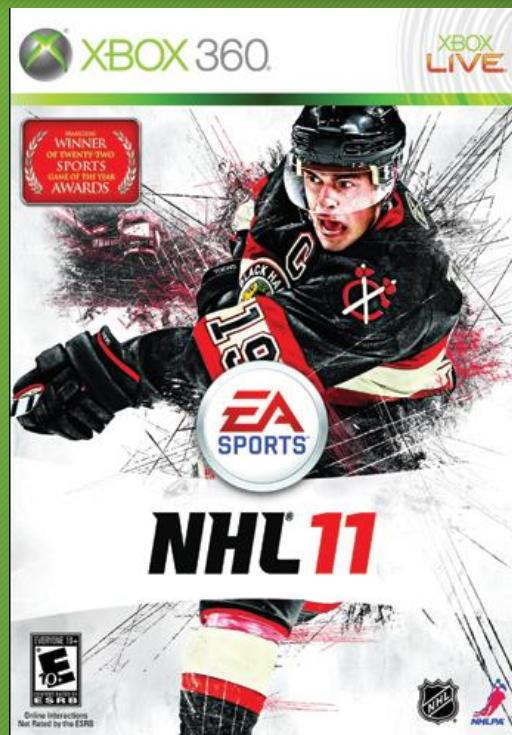
Sports Games: Licenses

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- The whole genre is filled with licensing issues. You need written permission to use:
 - Different stadiums, tracks, arenas, and other venues
 - Team names, logos, uniform design, ...
 - Player names, likenesses, signature moves, ...
- Basically, anything that can be construed as taken from real life will likely need to be licensed in some way.
- Remember that licenses cost money and must be cleared by both budget and legal staff.

Sports Games: Licenses

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Box art from NHL 11. The circled part in the corner are the official logos for the NHL league and players' association. Without approval from these two organizations, your hockey game will not get far!

Sports Games: The Look

72

- Sports games lead all other genres in the realistic depiction of human motion.
 - Be ready to incorporate motion capture into your design, schedule, and budget.
- Managing the camera is also complex.
 - Sometimes focus must be on a single part of the game area, but at others it must encompass the entire field of play.
 - No matter what, the player must be able to see all of the action needed at the time!
- Also consider special visuals to enhance your game including environment conditions, sweat, hair motion, player attitude, and so on.

Sports Games: Features and Interface

73

- Keep the interface simple and well tuned to the sport being played.
- Allow players to update statistics, rosters, and perhaps import their own data into the game.
- Include real-word ambience in the game.
 - This includes stadium and arena music, spectator noise and activities, and so on.
 - If you capture these rituals, you will also entertain and captivate the player.

Sports Games: Features and Interface

74



Screen shot from FIFA 11. The fan noises, singing, and other stadium ambience makes you feel like you are part of a real soccer game, and not just a video game.

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Fighting Games

75

- Fighting games are simple and direct, yet they can be very engaging.
 - The goal is create quick bursts of swift and intense action, followed by more of the same.
- The characters and their moves must be well balanced.
 - If one is unstoppable, everyone will play him.
 - If another is too weak, no one will.
 - Either is evidence of poor game design.
- It is also important to manage the damage inflicted by the characters on each other.
 - Fights should neither be too short nor too long.

Fighting Games

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Mortal Kombat



Tekken 6



Super Street Fighter IV



Dead or Alive 4

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Fighting Games: Visuals

77

- Visuals in fighting games are important.
 - The focus is tight (on the two fighters, and the portion of the arena they are fighting in), so they better look good!
 - Each character must have a unique look and distinctive moves that are interesting to watch.
 - The animations must be smooth and fluid.
- Pay attention to weapons and special audio and graphical effects.
 - They can add a lot of impact to the game.

Fighting Games: Moves

78

- The player should start with a set of easy-to-learn moves.
 - Punches, kicks, and blocks.
 - Walking, running, ducking, and jumping.
- Each character should also have special moves that are learned over time and through practice.
 - Individual moves or combinations.
 - Finishing moves and signature moves.

Fighting Games: Moves

79



Screen shot from Mortal Kombat Deadly Alliance. Yup. That looks like a fatality to me!

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Fighting Games: The Right Difficulty

80

- It is very important to get the right level of difficulty into a fighting game.
 - On their first attempt, just about any player should be able to defeat the first opponent (or at least come very close) .
 - At the same time, they should not be able to get very far until they hone their skills and timing and master more complex moves.
- If a game is too hard, players will be discouraged from playing it.
- If it is too easy, there is no challenge or replay value, and they won't want to play it either.

Fighting Games: The Right Difficulty

81



Screen shot from Kakuto Chojin. This fighting game for the Xbox is ridiculously easy. On your first try, you can beat every opponent without losing a single match.

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Fighting Games: The Right Difficulty

82



Screen shot of Tao Feng: Fist of the Lotus. On the other end of the spectrum, this game is often criticized as being way too difficult. Even seasoned players can have a lot of trouble getting past the first opponent.

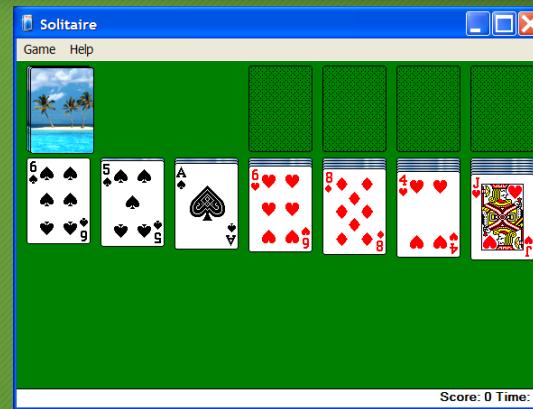
- These tend not to be very deep games.
- Casual games are often played in short bursts.
 - On a lunch hour, or break for example.
 - The player wants to get in, have quick fun, and get out as easily as possible.
- A simple and clean interface is important.
 - They do not want to be encumbered to play.
- If the game is an adaptation of a real-world game, it should be faithful to those rules, allowing for player customizations as well.
- Licensing may also be an issue.

Casual Games

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Diner Dash



Solitaire



Masters of Mystery: Blood of Betrayal



Bejeweled

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Casual Games: Tips

85

- Do not make the game too difficult.
 - No casual game has failed because it is too easy, but plenty have failed because they were too hard.
- Do not assume that the player knows anything about their computer or has the latest hardware.
 - Keep requirements low, avoid 3D if possible, and avoid extra software requirements, plugins and so on.

Casual Games: Tips

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Screen shot from Heavy Weapon. This casual game was probably too hard for new players...

Casual Games: More Tips

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- Selling a casual game can be tricky ...
 - Portals help raise visibility and awareness that you cannot get on your own.
 - Price carefully ... if it is too expensive, it won't sell, but if it is too cheap, people will assume it is garbage.
 - You might want to use a “try-then-buy” approach, or some other upselling technique to get your game out there first, and then generate sales.

Casual Games: More Tips

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- Be careful in selecting your theme ... most casual players prefer non-violent games.
- Give the player lots of rewards for playing (points, bonuses, etc.). It gives the player incentive to play, and can make the game seem easier.
- When giving feedback, do so in a positive way and not a negative one!

Casual Games: More Tips

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- Avoid giving the player lots of text to read through to play.
- Remember that the player is likely playing the game to relax, and is not looking for stress, frustration and a huge challenge.
- The less interested and experienced a person is with games, the more you should listen to their comments about your game.

- You must design a compelling activity that is fun for the player, without forcing a lot of direction on them.
- Some important tips:
 - Give the player a huge variety of interesting building blocks to use, especially if it is a world-building game.
 - Make it easy for the player to keep track of everything in the game. Design a simple interface, and let the player zoom in for detail, or out for the big picture.

Sandbox Games

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The Sims 3



Spore



Zoo Tycoon 2



Minecraft

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Sandbox Games: More Tips

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- More tips:
 - The interface should allow the player to easily jump around the game world.
 - The graphics should allow the user to easily distinguish between units and convey status information.
 - The heart of the game is a complex set of interrelated rules and subsystems that determine how the computer reacts to the player.
 - Give the player instant feedback on all activities.
 - Occasional disasters can be a good thing.
 - If the game is real-time, let the player vary the speed of events in the game.

Sandbox Games: More Tips

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Screen shots from Minecraft. It imposes very little direction on you, allowing people to do all sorts of interesting things with the game ...

- The goal of these games is to teach a specific body of knowledge to the player.
 - You must know what this is at the start and build the game around it, and not the other way around!
- Some tips:
 - Have clear goals for the player.
 - Consult curriculum documents in designing the content of the game.
 - Targeting the game is important, including the background knowledge of the player and their level of maturity.

Educational Games

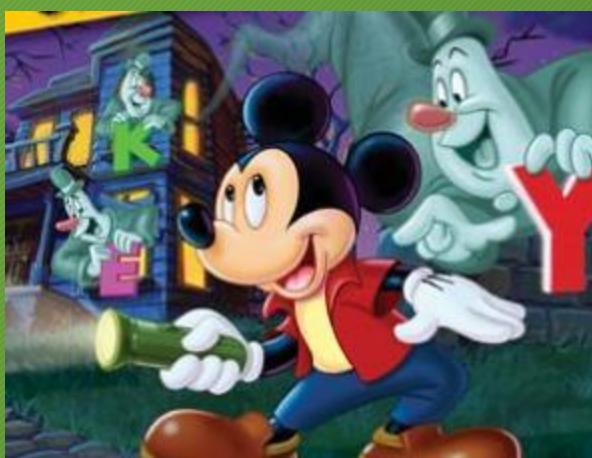
95



Reader Rabbit



Carmen Sandiego



Disney Learning Adventure

Educational Games: More Tips

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- More tips:
 - Interactivity is vital to children. Everything they do should have a visible reaction.
 - The interface must be simple and clean. Keep in mind that young players may not have the motor skills for precise maneuvers in the game.
 - Engage emotions and wrap educational content into goal-oriented behavior.
 - Reward and encourage the player often.
 - Do not shy away from conflict, but steer clear of violence and violent behavior.
 - Be sure to avoid inappropriate content ... remember that parents will be purchasing this!

Educational Games: More Tips

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Screen shot from Typing of the Dead. Based on House of the Dead II, this game can serve as a nice typing tutor. Definitely not for children though! An interesting concept, and a surprisingly fun game.

- The challenge is not in designing a single brain teaser, but in creating a puzzle or set of puzzles that appeals to a wide audience.
 - Start with the kind of puzzle you like, but remember that people have different tastes.
- Your goal is to not make the player feel stupid.
 - Your goal is to provide a challenge, and to help the player overcome the challenge.
- Make sure to provide a range of difficulties in the puzzle or puzzles to be solved, including some simple ones and some incredibly difficult ones for the expert player as well.

Puzzle Games

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Angry Birds



Trials HD



Portal 2



The Incredible Machine

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Online Games

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- Almost any kind of game can also be online if it allows network play.
 - Consult the design issues for other genres as necessary.
- How will money be made from the game?
 - Selling game units?
 - Selling subscriptions to the game?
 - Pay per play or per hour?
 - Advertisements? (More likely on web-based games)

Online Games

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FarmVille



City of Heroes



EVE Online



Ultima Online



World of Warcraft

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Online Games: Stick to the Rules

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- It is important to ensure that everyone in an online game sticks to the game rules.
 - This not only includes the players, but the provider of the game service.
- Violating the game rules has several negative effects on the game:
 - It breaks the immersive experience being developed and nurtured in the game.
 - It removes faith that players had in the game to behave according to expectations.
 - It just is not fair. Plain and simple.

Online Games: Stick to the Rules

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Screen shot from Everquest of the first ever killing of Kerafym, also known as The Sleeper, a beast supposed to be unkillable. (Actually it just had over 100 billion hit points.) A small army of 200 players took nearly 4 hours to defeat it. Their first attempt was unfairly thwarted by Sony, who wanted the creature alive for the storyline. Sony relented, and let them finish the job, but not before they shattered the players' faith in the system following the rules.

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Online Games: Stick to the Rules

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Screen shots from Ultima Online. One of the mainstay characters throughout the chain of Ultima games is Lord British. A common activity in each game is to attempt to kill Lord British, as it usually offers humorous or unanticipated rewards. In Ultima Online, he was supposed to be unkillable. A thief in the crowd stole a fire field spell scroll from a fellow player and promptly incinerated Lord British, because a bug in the game broke the rules. In another rule breaking immediately after, demons were summoned by the game provider into the castle and promptly slaughtered everyone, including the innocent.

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Online Games: Network Services

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- Would like it to seem as if all players are playing on the local system.
 - Must reduce lag or latency effects.
 - If it affects gameplay, it is an issue. If not, you may be able to ignore it.
- The game must also allow drop-outs and drop-ins as much as possible.
- You must also consider the other services offered with the game.
 - Updates, new content, player matching, community services, multiple distributed services, and so on.

That's it for the genres

- There are a lot more computer game genres like
 - Rush
 - Tower defense
 - Train Simulation
 - Any combination of the genres mentioned in this lecture!
- But you I think you got an overall understanding of different genres and their attributes.