Today’s lecture

- History of Games
  - Evolved & Designed Games
  - Before Computer Games
  - History of Computer Games
  - Computer Games today & tomorrow
Playing is older than games

• Playing done in many animal species
  • Training
  • Passing knowledge
  • Determining social rank
• Possible between species
Evolved & Designed Games

- Evolved Games
  - Games that have no documented original design
  - Many anonymous designers
  - Variant rule sets
  - Rule sets maintained through organizations or manufacturers

- Designed Games
  - Identified designer
  - Often commercial intent
  - Original rule set
Example evolved games - Bowling

- Egyptian Tombs
  - 5200 BC or 500 BC

- Monasteries
  - Metaphorical teaching tools in monasteries and church where the pins represented heathens

- Medieval Europe
  - Use in English courts gave rise to the concept of king-pin

- United States
  - Banned in the 19th century due to betting
  - Nine-Pin Bowling changed into today’s Tin-Pin Bowling

Sources:
Example designed Games - Basketball

- James A. Naismith, 1891
  - A Canadian!

- Design criteria
  - enjoyable by average people
  - skill rather than strength or weight
  - ball easy to handle, difficult to conceal
  - no tackling
Differences and Similarities Games

- **Differences**
  - Gradual improvement - Original idea
  - Improvised Gameplay - Intended Gameplay

- **Similarities**
  - Same general structures
  - Can be analyzed same way to look at gameplay
  - Claims to be in one category can be wrong
First Games
First Games?
- First suspect: Sport

- Ritualized forms of other activities
  - Running
  - Wrestling
  - Archery

- Gameplay features
  - Produce a measure of physical skill by competition against other person
First Games?
- Second suspect: “Dice” Games

- Randomizers
  - Objects used for divination

- Evidence
  - Staves found in Tutankhamen’s tomb (~1323 BC) together with gameboard
  - Similar staves found in the royal tombs at Ur together with another gameboard
  - Mentioned in the Rig Veda (~1500 BC)

- Gameplay features
  - Produce a random outcome within well-defined limits and clear states

Source:
Parlett, David, The Oxford History of Board Games, Oxford University Press, 1999
First Organized Games

- Funerals
  - Gladiators
- Religious festivals
- Olympic Games, 776 BC
  - Judges
  - Truces between countries,
  - Participants’ status as religious pilgrims
- Gladiator Games
  - Celebrate battles at funeral
  - Changed when Julius Caesar organized one in honor of his dead daughter
Dice Games

• Inventors
  • Lydians of Asia according to Herodotus

• Predecessors
  • Binary Lots
  • Astragals
    • Depicted ~800 BC

• Gameplay features
  • Provide variety of ranges for randomizers and tie results to abstract measures – numbers
  • Meta game – betting on outcome
    • Will of the gods - not taxed!
Board Games

- Origins
  - traced to keeping track of player’s scores in dice games

- Gameplay features
  - Introduced game token to maintain game state
  - Linked series of actions to randomized values to manipulate game state
Racing games

• Interpreting movement on board as physical movement
  • Ludo (from Pachisi, ~700 BC)
  • Backgammon (from Senet & Mehen, 2650+ BC)

• Gameplay features
  • Introduction of the concept of a game world
  • Introduction of several game tokens controlled by one player introduced choice
  • Capturing other tokens meant that effects of changing one part of the game state by have additional effects – abstract events
Perfect Information Games
- players know all moves that have taken place

- Removal of randomness from board games
  - Chess (referred ~600 AD)
  - Go (from Wei-qi, 2000 BC)

- Gameplay features
  - 2D game world
  - Focus on mental skills
  - Actions defined by tokens
    - Context-dependent actions
    - Functionally different tokens
  - Possible to predict opponent
  - Additional goals based on space control, space filling, connection, and collection
Imperfect Information

- Making part of the game state unknown to players
  - Stratego
  - Battleship
  - Blind Chess | Kriegspiel

- Gameplay features
  - Hidden game state
  - Heterogeneous information availability
  - Need of umpire for gameplay to commerce
Skill Games

• Board games where movement is determined by successful action or performance
  • Scrabble
  • Trivial Pursuit
  • Pictionary
  • Balderdash
  • Apples to Apples

• Gameplay features
  • Introduction of variety of skills – social, artistic
Tabletop or Miniature

- Origins in forms of chess
- Similar to board games but use graphically depicted miniatures
  - Warhammer
  - Warhammer 40K
- Gameplay features
  - Continuous game world
  - Players own game tokens they use
  - Requires players to do extra-game activities
Card Games

- Background intertwined with Dominoes & Mah-Jong tiles
  - Modern variants probably Persian origin
  - Brought to Europe by Arabs 13th century
  - Specialized decks quite late
- Gameplay features
  - Random but fixed distribution
Collectable Card Games

- Combines card games with idol cards
  - Magic: the gathering
  - Illuminati: new world order
- Gameplay features
  - Cards have self-contained rules within a rule framework
  - Physical rarity affects value of game token
  - Time-limited functionality of cards
Roleplaying Games

- Expansion from miniature games
  - Dungeons & Dragons, 1974
  - The Basic Roleplaying System
  - GURPS

- Gameplay features
  - Unclear winning conditions
  - Unclear end conditions
    - campaigns
    - Game master
    - Unequal power structure
    - Open-ended rule set
    - Mediates the Game World

- Character development
- Roleplaying
- Novel narrative structure – adventure modules

- D&D 3rd edition introduced Open Gaming License and id20 Trademark License
- D&D 4th edition includes online support
Arose from roleplaying games, improvisational theatre and re-enactment societies

Earlier similar activities
- re-enactments of battles between Osiris and Set in ancient Egypt
- psychoanalytic methods in the 1920s

Gameplay features
- Players represent their characters
- Players physically act out what they do in the game
Origin of Video Games
Novelty Games

- Machines that provide gameplay or let players test skills
- Gameplay features
  - Coin-op
  - Machine controls game flow
- Penny Arcades
Pinball

- Reaction to games being banned due to being used for gambling
- Gameplay features
  - Flippers
  - Electro-mechanical game system
Ralph Baer - 1951

- Asked to Build the best television set in the world.
- Built in several prototypes between 1966-1968
- Hand controller and light gun
  - Use of sensor
- Magnavox signed an agreement in 1971 and the first video game system got released in May 1972: Odyssey
A.S. Douglas - 1952

- Part of Ph.D. thesis in Human-Computer Interaction
  - Tic-Tac-Toe
  - Play by dialing numbers
  - Computer opponent
- Emulator
  - http://www.dcs.warwick.ac.uk/~edsac
Tennis for Two - 1958

- William Higinbotham
- Demonstrate system
  - Analog computer
  - Real-time game
*Spacewar! - 1962*

- Stephen "Slug" Russell, MIT
- DEC PDP-1 assembler in 1962
- Demonstrate the Type 30 Precision CRT Display
  - "It should demonstrate as many of the computer's resources as possible, and tax those resources to the limit;"
  - Within a consistent framework, it should be interesting, which means every run should be different;
  - It should involve the onlooker in a pleasurable and active way -- in short, it should be a game."
Nolan Bushnell decided to commercialize Spacewar

• Stand-alone machine
Nolan Bushell - 1972

- Atari
  - syzygy
- Pong
  - Arcade version, 1972
  - TV-console, 1975
- Difficulties getting bank loans due to association with pinball and mafia
Pong vs. Pong?

• In 1972, Magnavox sued Atari
  • Patents on electronic games & electronic ping-pong
• Settled out of court
  • $700,000 paid-up license
  • Other later companies had to pay royalties
Coin-eaters

- 1974 to 1975
  - 57 games are released.
- 1976
  - 53 videogames by 15 companies
- First controversy
  - Death Race 2000
Vector Graphics

- Space Wars, 1977
- Cinematronics
- pong clone maker
- Speed Freak, 1977
• Space Invaders, 1978
Improvements & Variants

- Atari Football, Atari, 1978
  - Screen down
- Asteroids, Atari, 1978
  - Initials and High Score
- Galaxian, Namco, 1979
  - 8-bit color
- Stratovox, Taito, 1980
  - Speech sound
Platform Games

- Pac-Man, Namco, 1981
  - Moru Iwatani

- Donkey Kong, Nintendo, 1981
  - Shigeru Miyamoto
  - Introduced Mario & Donkey Kong
Home Computers

- Commodore
  - Commodore PET, 1977
  - VIC 20, 1980
  - Commodore 64, 1982
  - Commodore Amiga, 1985
  - Amiga 500, 1987
  - Amiga 2000, 1987
- Sinclair
  - ZX80, 1980
  - ZX81, 1981
  - ZX Spectrum, 1982
Crash of Arcade Games

- Transition Cycles
  - 6-8 years
- Atari Hubris
  - E.T. games buried?
- Oversupply
  - 50+ companies
- Home Consoles
- Lack of Faith
  - Video games fad
- Exception exist
  - Paperboy, Atari, 1984
  - Gauntlet, 1985
Nintendo Entertainment System

• 1985

• Helped revive the industry in the 80’s
The Console Wars

- First well known competition.
  - Early 1990's
- 4th generation
  - 16-bit systems
- Saga Genesis (40 million) vs. Super Nintendo (50 million)
Current Generations

- 32 bit - 1995
  - PlayStation
  - Saga Saturn
  - Nintendo 64 (not 32 bit)
- Sixth Generation - 1999
  - Dreamcast (last Saga console)
  - Playstation 2
  - xBox
  - GameCube
- Seventh Generation - 2005
  - xBox 360
  - PlayStation 3
  - Wii
Handheld Games

• Platforms

  • Game’n’Watch, 1980
  • Gameboy, 1989
  • Gameboy Advance, 2001?
  • N-Gage, 2003
  • Gameboy DS, 2005
  • PSP, 2005
Genres
Platform Games

- Zelda Series
- Mario Series

- Both examples of franchises
- Usually given as examples of good learnability
Strategy

- Sprung from board games
  - Traditional Strategy
  - Civilization, 1990
    - Civilization IV, 2006
    - Victoria, 2003
  - Real-time Strategy
    - Dune 2: The Building of a Dynasty, 1992
    - Age of Empires, 1997
  - StarCraft

CMPT 106
First-Person Shooters

- id Software
  - Wolfenstein 3D, 1992
  - **Doom, 1993**
  - Quake, 1996
  - Themes sprung from role-playing games...
- Valve Software
  - **Half-Life, 1998**
  - Counter-Strike,
- Bungie
  - Halo, 2001
- Often most criticized
  - Graphical violence
  - Columbine
- Deus Ex
FPS online

- FPS usually support deathmatch modes

- Online

- Class-based systems

- Examples of games dedicated to online play
  - Team Fortress Classic, 1999
  - Counter-Strike, 1999
  - Battlefield 1942, 2002
Massively Multiplayer Online Games

- Typically based upon role-playing games
- Ultima Online, Origin Systems, 1997
- Everquest, Sony, 2000
- Puzzle Pirates, Three Rings, 2001
- Sims Online, Maxis, 2003
- World of Warcraft
Sport Games

- FIFA 200X, Electronic Arts, 200X-1
- Madden NFL 200X, EA Sports, 200X-1
- Tiger Woods PGA Tour, 200X-1
- Annual version
- Tightly tied to real-world statistics
Racing

- Grand Theft Auto 3, Rockstar Games, 2001

- Midtown Madness 3, Digital Illusions, 2003
Pervasive Games