GAME DEVELOPMENT

CSC 3150/ CSC 9010

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What is a game?

- A closed formal system that engages players in structured conflict and resolves its uncertainty in an unequal outcome
Formal Elements

- **Players**
  - How many? Teams? Etc..

- **Objectives**
  - How to win the game

- **Procedures**
  - What actions can a player take according to the rules

- **Rules**
  - Define game objects / what is allowable
Formal Elements

- **Resources**
  - Assets that can be used to accomplish a goal

- **Conflict**
  - What prevents you from accomplishing your goal

- **Boundaries**
  - Separates the game from the real world

- **Outcome**
  - Must be uncertain / undetermined
Formal Elements

- **Players**
  - How many? Teams? Etc..
Formal Elements

• **Objectives**
  • How to win the game
  • Capture/Rescue
  • Chase/Race
  • Alignment
  • Forbidden Acts
  • Construction/Exploration
  • Solution
  • Outwit
Formal Elements

- **Procedures**
  - What actions can a player take according to the rules
  - Who/what/when/where/ and how

- **Starting action**: How to put a game into play.

- **Progression of action**: Ongoing procedures after the starting action

- **Special actions**: Available conditional to other elements or game state

- **Resolving actions**: Bring gameplay to a close
Formal Elements

• **Rules**
  - Define game objects / what is allowable
  - Defining objects and concepts
  - Restricting actions
  - Determining effects (if/then)

• *Poker*: A straight is five consecutively ranked cards; a straight flush is five consecutively ranked cards of the same suit.
• *Chess*: A player cannot move her king into check.
• *Go*: A player cannot make a move that recreates a previous state of the board—this means an exact replication of the whole board situation.
• *WarCraft II*: To create knight units, a player must have upgraded to a keep and built a stable.
Formal Elements

• **Resources**
  - Assets that can be used to accomplish a goal
  - Utility/scarcity

• Lives
• Health
• Units
• Currency
• Actions
• Powerups
• Inventory
• Time
Formal Elements

- **Conflict**
  - What prevents you from accomplishing your goal
  - Obstacles
  - Opponents
  - Dilemmas
Formal Elements

• Boundaries
  • Magic circle
Formal Elements

• **Outcome**
  • Must be uncertain / undetermined

• Zero Sum
• Non Zero Sum
Dramatic Elements

• **Challenge**
  • A task that is difficult to accomplish

• **Play**
  • Free movement within a rigid structure

• **Premise**
  • Context for formal elements (backstory)

• **Character**
  • Avatars so you can empathize with the situation

• **Story**
  • Unfolds as the game progresses
Challenge - Theory of Flow

- http://www.youtube.com/watch?v=fXleFJCqsPs
Deaths by Flow
Deaths by Flow (or Addiction?)

- Korean Killed by Starcraft (2005)
Deaths by Flow (or Addiction?)

• 18-Year-Old Killed by an Arcade
Deaths by Flow (or Addiction?)

- 40 Hours of Diablo III Proves Fatal
Deaths by Flow (or Addiction?)

- 12 hour halo session
Deaths by Flow (or Addiction?)

- 650 Hour continuous gaming marathon