GAME DEVELOPMENT

CSC 3150
Instructor: Dr. Edward Kim
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