CS354R: Game Technology

Design
Fall 2017
What is Game Design?

- Use of interaction and aesthetic principles to create a compelling interactive experience
- Interdisciplinary area of study and practice
  - HCI
  - Design
  - Art
  - Business/Economics
- Few “pure” design positions in game development
  - Scripting often required
  - Understanding system limitations helps
  - Nobody likes the “idea” guy :)

MDA Framework

- Game design is a nebulous, ill-defined space
  - “Game” is a broad term
  - “Design” is a broad term
  - Game design varies wildly depending on intended audience, monetization strategies, budget etc
- Mechanics-Dynamics-Aesthetics (MDA) framework created to:
  - Encapsulate all forms of gaming
  - Analyze design aspects in context of game’s intentions
  - Provide a common language for design discussions
MDA Design Considerations

- Mechanics
  - In-game actions
  - Control mappings
  - Responsiveness
- Dynamics
  - Intended experience
  - Emergent strategies
  - Engagement
- Aesthetics
  - Look and feel
  - Emotive experience
  - Player expectations
Mechanics

• Particular components of a game
  • Data representation of systems
  • Algorithmic representation of play
• Define the rules of play and response to player input
  • Controls
  • Win-lose conditions
  • Intermediate systems
Mechanical Considerations

- In-game actions
  - What does the player actually do?
  - What is the novelty?
  - What is the player expectation?
- Control mappings
  - Are the player actions ergonomic?
  - Do the controls follow conventions of genre?
  - Are controls remappable? (the answer should be yes :P)
- Responsiveness
  - How do the controls respond?
  - How do the interactions feel?
Case Study: Devil May Cry

https://www.youtube.com/watch?v=L8mf-NV2fgw&t=64s
https://www.youtube.com/watch?v=xdOPZFu-GU0&t=63s
Dynamics

- Run-time behavior of mechanics based on player input
  - Holistic system encapsulating mechanics
  - Creates novelty within play
- Interactions and experience of given play through
  - Scope of player choices
  - Breadth of player strategies
Dynamical Considerations

- Intended experience
  - How should the player interact with the world?
  - How do its systems create interest?
  - What is the scaling in terms of difficulty?

- Emergent strategies
  - How does player choice change game outcome?
  - What are the timings and flow?

- Engagement
  - What engages the player?
  - How does player attention ebb and flow?
  - What is player expectation in terms of play cycle?
Case Study: Star Craft

https://www.youtube.com/watch?v=7nAgHxykgLw
https://www.youtube.com/watch?v=Kbwk2vwXNyU
Aesthetics

- Intended emotional response to the game
  - Visuals
  - Audio
  - Overall “feel” during play
- Sets tone of game
- Creates “fun” in game
  - Exploration
  - Narrative
  - Challenge
  - Fellowship
  - etc…
Aesthetic Considerations

• Look and feel
  • What is the framework for the emotional response?
  • How does this change over the course of the game?
• Emotive experience
  • What emotional spectrum makes the game’s “fun”?
  • What is the range of expected player emotion?
  • How does the game create emotional investment?
• Player expectations
  • How does the game meet expectations?
  • How does the game break expectations?
Case Study: Ico

https://www.youtube.com/watch?v=kSRlIlwXDBB4
Case Study: Spec Ops: The Line

https://www.youtube.com/watch?v=-b7TaLjdXMc&t=6s
Games as Design

- Games are inherently a designed experience
- Good design is generally invisible
- There is no such thing as “wrong” user interactions
  - Empathy for players promotes better design
- Every interaction should contribute to the overall experience
- Games should be made with a purpose
  - Why are you making a game?
  - Why should someone play your game?
- Consider game design decisions holistically and critically
  - Play-testing and user studies invaluable in feedback loop
References

• MDA Framework <http://www.cs.northwestern.edu/~hunicke/pubs/MDA.pdf>

• Hideo Kojima’s GDC 2009 Keynote <https://www.youtube.com/watch?v=7Pq1Jyr6ffU>