Lecture 3:

Paper Prototyping
Updates

• Assignment 2 is due **TONIGHT** at 11:59pm

• Project pitches on Thursday
  • Described as “Assignment 3”
Today

- Paper prototyping
  - Will do this in class next Tuesday

- Group meeting time
Game Design is Hard
So we need to test
Full game requires a lot of effort
STILL requires a lot of effort
Paper prototype!
Purpose of Paper Prototyping

- Evaluate *some part* of the design
  - Not necessarily the whole design
  - Investigate *central* design questions
- Simulate enough of the game to decide if it will work
- Identify key problems quickly
Paper prototyping is sometimes easy
Less clear in other cases…
What about…

Paper Prototyping
What about…
games are a series of interesting decisions
Should be able to simulate decisions
What are the decisions?

[Image of a game level with Mario]
What are the decisions?

Paper Prototyping
What are the decisions?
Avoid Overly Aggressive Gandhi

'Very well, we will mobilize our armies for WAR! You will pay for your foolish pride!'
Modeling Gameplay

- Key is *discretization*

- Identify game variables and break them into decision-significant pieces
  - Space
  - Time
  - Money
  - Health
Discretizing Space
Discretizing Space

Prototyping
Discretizing Space
Discretizing Space

Prototyping
Discretizing Time

- Turns!
  - Represent a unit of action
  - When done, game “at rest”
- Turns can be multistep
  - Multiple actions in a turn
  - Environmental interactions
- Turns can alternate
  - between other players
  - with a gamemaster
  - not at all (one player?)
Turns are the difference
But you could introduce turns
Possible Starcraft Turn

1. Fire Planning Phase
   • Choose units to attack

2. Firing Phase
   • Units fire one-by-one
   • Subtract hitpoints

3. Move Phase
   • Units move

4. Upkeep Phase
   • Units recharge / heal

5. Build Phase
   • Units build, finish, etc.

6. Mining Phase
   • We need more minerals

Gameplay Modeling
Simulating Reaction Time

- Allow opponent to **interrupt**
  - Action that reacts to yours
  - Played after you act, but before action takes an effect
  - Core mechanic in *Magic:TG*

- Make play **asynchronous**
  - Players still have turns
  - But take turns as fast as can
  - Conflicts resolved via speed
  - Often need a referee for aid
Discretizing Resources

Jetpack expends oxygen (=health)
Discretizing Resources
Questions to explore

- Does the game “work”?
- Is it fun?
- Can someone learn how to play?
- Is the interface usable?
- Can the design scale to include multiple levels?
Easy
Medium

Paper Prototyping
Hard

Paper Prototyping
Show difficulty curve

Easy

Medium

Hard
Details are on the website

- Listed as “Assignment 4”
- Bring prototype to class next Tuesday
Rest of class: structured group time

• Come up with your designs!

• Put your ideas into a Google doc that’s on the website
Things to discuss

- What type of game?
- What is the “hook” – why will anyone play it?
- What does the player do?
- How will the player interact with the game?
- How will the game get more difficult?
- What are the key issues that need to be explored?