Game Mechanics

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MDA framework

Mechanics, Dynamics and Aesthetics (MDA)

**Second order problem**: game designer only creates Mechanics directly
Spawn game mechanics

How do you know if your changes worked?
Important dynamics

- **Positive feedback loop** - when something happens that causes the same thing happen again
- **Negative feedback loop** - when something happens that makes it harder to happen again

<table>
<thead>
<tr>
<th>Positive feedback loop</th>
<th>Negative feedback loop</th>
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</thead>
<tbody>
<tr>
<td>Tend to destabilize the game</td>
<td>Tend to stabilize the game</td>
</tr>
<tr>
<td>Cause the game to end faster</td>
<td>Cause the game to take longer</td>
</tr>
<tr>
<td>Put the emphasis on early game</td>
<td>Put the emphasis on late game</td>
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Both of them can be useful tools!
Emergent gameplay

**Emergent gameplay** - game with simple mechanics but complex dynamics. Eg. Chess.

**Design principle** - instead of designing rules to set what players are allowed to do, design some sort of “meta” rules that will be building blocks for players to design their own rules.
Mechanic 1: Functional space

Game space:

- Discrete or continuous
- Number of dimensions
- Bounded areas connected or disconnected
- Boundaries of the space
- Are there subspaces?
Mechanic 1: Functional space
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Mechanic 2: Objects, Attributes, States

- **Objects** - characters, props, tokens, scoreboards
- **Attributes** - information about an object
- **State** - attribute has a current state
Mechanics 3: Actions

- **Operative actions** - base actions player takes
- **Resultant actions** - meaningful in the larger picture of the game

Kingdom: New Lands
Mechanic 4: Rules

Games should not push players to memorize all the rules

Most important rule - the object of the game

- Goal of chess: “Capture your opponent’s king”
- Good game goals:
  - Concrete
  - Achievable
  - Rewarding
Mechanic 5: Skills

- **Physical skills** - manipulating a game controller
- **Mental skills** - memory, observation, puzzle solving
- **Social skills** - reading an opponent, fooling an opponent, coordinating with teammates
Mechanic 6: Chance

- Probability
- Combinatorics
- Booleans
- Normal Distribution
- Randomness
Group task

Wait for it
Group 1
Group 2
Group 3
Group 4
Group 5
Group task

Design a **one** mechanic spin-off using **one touch** mechanic.
Homework

Watch the presentation: How to Make an Original F2P Game

Design game mechanics for your game:

- What is your game functional space?
- Define possible actions in your game
- Pick the most important object in your game, write down its attributes and states
- Draw a state diagram about this object
- Define the goal of your game and how the result is determined
- Describe which elements in your game are nondeterministic (assume that player input is deterministic)