Movement and Intro to Maps

What are maps?

- Maps are a Mechanic that adds:
  - Context
  - Realism/Worldbuilding
  - Boundaries
  - **Dynamics**
  - **Experiences**

What do maps do?

- Maps ask (and answer) questions:
  - Where am I?
  - What is my goal?
  - Where do I want to go?
  - How do I get there?
  - Why do I want to get there?
  - What should I do along the way?

A New Stat

- With the introduction of a new statistic called MOVE, combat changes radically.
- MOVE is the distance a character can move each turn (in arbitrary, defined units).
- This means we need a map upon which to move.
- While this will normally mean a 2D map, we'll start with a 1D map.

The 1D Map

- A 1D map just means you are tracking the relative distance between the two characters.
- Characters can only move towards or away from their opponent.
- While an actual game will rarely do this, using a 1D map is very useful for analysis of a combat system.

1/2D?

- Many games with movement don't even have full 1D movement:
  - Side-scrollers that move only forward
  - Top down arcade style games
  - **Dynamics**: no ability to go backwards – 'use it or lose it'
  - These can create an **Experience** feeling of being 'rushed'

2+ D?

- Some games are useful to think of as 1D, 2D, or 3D depending on context:
  - Pool
  - Soccer
  - FPS maps with height vs not

2- D?

- Many "open" maps drop a dimension at some point:
  - 3d shooters that have areas with no "up"
  - 2d maps with chokepoints
  - 1d maps with walls

Melee Combat on a 1D Map

- If the two combatants only have melee attacks, the map still matters.
- A character with a higher MOVE can run away from one with a lower MOVE. Without boundaries on the map, a faster player can evade combat entirely.
- If the characters start at a distance (or distance is created during the fight), this can give characters a chance to use other abilities (healing, buffs, etc.).

How does a game handle movement?

- "real time" movement
- Turn based
- Action Points
- The depth of the system should match how important movement is to the system (Pac-Man, Robo-Rally, Monopoly)

Adding Movement to Other Actions

- Some actions can combine their effect with movement.
- This can be done with attacks (Charge), defenses (Evade), or anything else if it makes sense.
- Movement can also be triggered by events (critical hits/defenses, for example).
- **Dynamics**!

Maps create space

- Maps are a mechanic, and like any mechanic, lead to new Dynamics and Experiences.
- Map+Mob Placement
- Map+loot
- Map+player sightlines

Melee combat issues from maps

- Disengaging – how does someone in combat leave it?
- Weapon 'length' (Range light)
- Multiple enemies
- When combat happens

Analysis of a 1D Map

- A 1D map is just a width, combined with rules for what happens at the edges (blocked, instant loss if you leave, etc.).
- It can still have terrain and obstacles that affect movement (move cost) and combat (modifiers, damaging terrain).

Analysis of a 1D Map cont.

- Writing a simulation (or even just doing simulated fights by hand) is much easier with a 1D map. (No path-finding, AI is simpler, etc.)
- Focus on the player experience and the intensity curve.
- What creates spikes in intensity in a 1d map?

MDE effects of 1D maps

- Easily understood - "where do I go?"
- 1D doesn't mean straight – lots of ways to vary sight/engagement distance to create interesting dynamics with different mobs
- Can be dull – players can feel "Led Around."

2D Maps

- 2D maps come in a variety of base types.
  - **Tiled (squares):** best for indoor environments, angled movement can be tricky.
  - **Hexes:** good for outdoor environments, makes rules easier, but only has six directions.
  - **Regions:** good compromise between tiled and free-form, requires more judgment to make, feels less "tactical".
  - **Free-form:** works for anything, easy to make, but can make rules more difficult to write/enforce.
  - Very different **dynamics** arise from each of these!

2D Movement

- Exact movement rules depend on the base type of the map.
- Rules for turning can be done as a turn rate, maximum turn angle, use of movement points, etc.
- Rules for flanking can get complicated (partial flanking, two attackers, etc.)
- Rules for moving backwards, sideways, diagonally, etc. are additional issues.

Map Topology

- Maps come in a variety of topologies.
  - **Linear:** just point A to point B, even if the path is convoluted (or pseudo-3D).
  - **Loop:** point A to point A.
  - **Branching:** point A to point B, but with two or more paths to get there (could be a loop as well).
  - **Hub:** spokes coming off of a central hub.
  - **Maze:** only one (or few) paths through, with lots of dead-ends.
  - **Free-form:** no definable topology.
  - Again, think about the **Dynamics** and **Aesthetics** that arise from these different options. How does your map help tell your story?

Who is your map for?

- The three 'levels' of gamer.

Who is your map for Cont.

- Tutorial
  - Linear
  - Cannot fail
  - Little/no side content
  - Teach one thing at a time
- Core content
  - Rewards exploration/experimentation
  - Challenging – Has a good intensity curve and works with the intensity curve of the game
- Optional content
  - More challenging/higher fail rate
  - Still needs to fit the overall intensity curve

Who is your map for Cont.

- Who is playing on your map?
- How many pairs of eyeballs are you moving?
- Are those eyeballs on the same team or adversaries?
- How do you display information (top down view, fog of war, first person)

Maps need content!

- No map is complete without details:
  - **Enemies:** grunts, elites, mini-bosses, and bosses.
  - **Obstacles:** walls, blocking terrain (movement, sight, or both), cover, doors/gates, traps, etc.
  - **Collectibles:** items, chests, keys, power-ups, MacGuffins (such as flags), etc.
  - **Points of Interest:** spawn points, exit points, event trigger points, teleport pads, ammo depots, etc.
  - **Markings:** title, labels, key, and scale.
  - **Story**: Teach your players about your world (Portal)

Maps need content cont.

- For each possible item/mob/effect on the map, think about:
  - WHY is it there? What effect is it intended to have on the PLAYER?
  - **Mechanics**: Does the item/mob create new mechanics for the player (e.g. limited use item)
  - **Dynamics**: How does WHERE an item/mob is interact with the map to create interesting effects?
  - **Experience**: Does the item/mob "make sense" within the game story? Does it lead to exploration or surprise?

Maps need content cont.

- Know how to reward your players
  - No dead ends without reason
  - Easy access to low level toys
  - Higher value toys should be harder to get
  - Think about WHERE your toys are, and what that does to their value – Sniper rifles with no line of fire, Rocket launchers in confined spaces.

Due in Lab

- Bring 1 of each map type (1D, 2D grid, 2D region, 2D freeform)
- Include full lists of what is on each map – you should be able to hand this off to a programmer.

Homework

- Develop each of the maps from lab. Have MDE and/or Intensity reasons for everything on them.
- You need enough combat system to answer the MDE/IC questions.

All maps must have a title, labels, key, a scale, and a "why this is correct" document.

Questions?