Level Design

CIS 487/587

Bruce R. Maxim

UM-Dearborn

Level

- Originated in shooters and side-scrollers
- Refers to change of area or difficulty
- In some games the user is required to build his or her level after being assigned an arbitrary starting position

Level Designers

- As games grow larger the need to use level designers becomes important
- A level designers works on 1 or 2 levels at the most
- Level designers need to integrate their knowledge of the game engine, art work, and core game play

Level Separation

- Break the game into chunks
- Make difficulty and dramatic tension ramp up from one level to the next
- Some times technical constraints (e.g. number of textures or sprites) dictate the end of the level
- Good designers give players a visual distraction watch will new level loads

Level Order

- Important to game flow
- Try to balance strategic play and action screens throughout the game
- Use dramatic unfolding of the story line

Level Components - 1

- Action
  - Designer needs to know how much is expected and what type of action
  - What enemy AI functions and maps can lead to interesting conflicts?
  - What game field topologies are possible?
  - How can the level be set up to encourage players to develop their own strategy for victory?

Level Components - 2

- Exploration
  - Designers often don't understand that players like to explore game fields
  - Give players surprises to find
  - Make sure a player's struggle to get through a level is rewarded
  - Decide whether or not to punish players for wandering through a level

Level Components - 3

- Puzzle Strategy
  - Adding puzzles to first person shooters is not always a good idea
  - Make puzzle style fit game (e.g. have player shoot through crystal to solve puzzle)
  - Don’t throw in “arbitrary” puzzles

Level Components - 4

- Story Telling
  - Knowing story goals for each level is important
  - Make story goals loose enough for level designer to build best level possible
  - Make sure interactive fiction goals don't stray too far from proposed master plot

Level Components - 5

- Aesthetics
  - Balance complexity of art work with game play
  - If artwork is beyond game engine capabilities use shortcut as compromise (e.g. use lighting or color to indicate steepness of slope or hidden doorways)

Elements of Good Levels - 1

- Player can not get stuck (always gets second chance to exit level)
- Provide subgoals for each level to maintain user interest
- Provide landmarks (essential to navigation, encourages exploration)
- Allow for first time success once in a while (trial and error every where can be tedious)

Elements of Good Levels - 2

- Limited backtracking (better off to have all paths go through a common bottle neck than for backtracking over previously traveled ground)
- Mark navigable paths clearly (roads that can't be traveled are and exits that look untraversable are worse)
- Give users multiple ways to accomplish goals (allow creative use of objects)

Level Design Process - 1

- Preliminary
  - Game state? Near end or just evolving
  - Be prepared to add of remove game elements base on future level development
- Conceptual outline sketched
  - Think about game play and story
  - What sort of player challenges are appropriate?
  - What environment facilitates these challenges?
  - What player rewards?

Level Design Process - 2

- Base architecture created
  - Faster to rough out games (backgrounds and movement) with 2D tiling engine than 3D production engines
- Refine architecture until it is fun
  - Experiment with moving player avitar around to check appearance and navigation
- Determine base game play
  - Once navigation is working, implement game play level elements
  - This may require adding monsters and NPC's

Level Design Process - 3

- Refine game play until it is fun
  - Change level layout to allow creatures to hide if space does not allow it
  - Make sure AI is meeting game goals
- Refine aesthetics
  - Once game play is working make things look nice
- Play testing
  - Have someone other than the level designer look it over and try it out

Level Design Template from Ed Byrne's book

1. Notes

Add notes and concept edits here, if this is to be a "living document" on a server. Make sure each edit has the name and time marked, for instance:

12/12/04 – Added new reference photos for Locations section (EB)

12/06/04 – Created document (EB)

2. Location

Use this section to outline where the level will take place, for example:

2.1 Geographic Location

2.2 Time of Day

2.3 Current Weather

2.4 Architecture or Terrain Style

2.5 Visual Reference

3. Player

This section describes information about the player in the level:

3.1 Player Start Location

3.2 Player Inventory

3.3 Briefing/Starting Information

3.4 Reasons For Being There

4. Objectives

This section contains the vital information about that the player needs to do to win the mission or finish the level successfully.

4.1 Main/Primary Objectives

4.2 Secondary Objectives

4.3 Bonus Objectives

4.4 Hidden Objectives

5. Challenge Hightlights

What are the key challenges and encounters that will happen in the level?

5.1 Combat Encounters

5.2 Stealth Encounters

5.3 Puzzles

5.4 Conversations

5.5 Boss Battles

6. Wow Factor

What are the memorable moments (not represented in the section above) that will stick with the player?

For example:

6.1 Introduction Area

…

6.4 Final Battle Area

7. Map Description

This section allows you to verbally describe key areas of the level, explain complicated sections and generally provide other team members with an vision of the environment.

7.1

7.2

etc.

8. Assets and Requirements

List here anything that you know the level will require in terms of external assets

8.1 Models

8.2 Textures

8.3 Sounds

8.4 Lighting

8.5 Effects

Sketches and References

Any drawings or reference material that would be helpful to the level designers in realizing your vision for the game.