VIDEO GAME DESIGN WORKSHOP

2022 SUMMER - GIUSEPPE TURINI

Kettering
UNIVERSITY

WORKSHOP STRUCTURE

Part 1 (2 hrs): **Introduction to Video Game Design, and In-Class Level Design**

Video Game Design, GDD, Level Design, Introduction to "Tanks!"

In-Class Level Design for "Tanks!"

Part 2 (3 hrs): **Introduction to System Design, and In-Class System/UI Design**

Game Mechanics, Game Engine, Physics and Collision Detection, Scripting

UIs, HUDs, Controls, Feedback, Introduction to Game Development in Unity

In-Class System/UI Design for "Tanks!"

Part 3 (2 hrs): **In-Class Designs Review/Testing, and Game Design History**

In-Class Review/Testing of Level/System/UI Designs

Game Design History

EXTERNAL RESOURCES

Workshop Material:

- Instructor personal website: sites.google.com/view/turinig
- These slides (as PDF file): github.com/turinig/vgdw
- Video game executables (as Windows build): github.com/turinig/vgdw
- Video game project (as Unity project): assetstore.unity.com/tanks-tutorial

External References

- Complete list of references in appendices.

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INTRODUCTION

"Experience is the hardest kind of teacher. It gives you the test first and the lesson afterwards."

OSCAR WILDE.

VIDEO GAME ELEMENTS

Gameplay: The interactive aspects of video game design, including: the player interactions with the game for entertainment/education/training purposes.

Game Mechanics: The game rules dictating how the player acts in the game.

Example: A game mechanic of *"having missions and mission-objectives"* forces the player to adhere to those rules, the associated gameplay consists in *"completing and engaging with those missions and objectives."*

Narrative: The creation of a context for all events happening in a video game.
This makes playing less abstract, and improves immersion.

ESRB RATING

ESRB: The Entertainment Software Rating Board (ESRB) is a panel determining the rating a game receives depending on: gameplay, character actions, blood, profanity, and several other game elements. The final rating could be::

- **EC:** early childhood.
- **E:** for everyone.
- **E10+:** for everyone at least 10 years old.
- **T:** for teenagers.
- **M:** for mature audience.
- **AO:** for adults only.
- **RP:** for *"rating pending"* (a game not rated yet).

VIDEO GAME GENRES

RPG: Role-playing games in which the player plays a certain character in the game world.

FPS: First-person shooters in which the player plays a character in first-person perspective with gameplay focused on combat (ranged and/or melee).

Platformer: Video games in which the player has to jump from platform to platform, avoiding obstacles/traps.

Puzzle: Video games in which the focus is on solving riddles (abstract, mathematical, mysteries, horror, etc.).

VIDEO GAME GENRES (2)

Simulation: Video games in which the focus is on simulating realistic actions (airplane piloting, car racing, etc.).

Party: Video games in which the focus is on multi-player mode: each player facing each other, designed to be played at parties.

VIDEO GAME DESIGN

"The focus of a game designer is designing game play, conceiving and designing rules and structures that result in an experience for players. Thus, game design, as a discipline, requires a focus on games in and of themselves."

KATIE SALEN & ERIC ZIMMERMANN. *"RULES OF PLAY."* 2004.

VIDEO GAME DESIGN AND DESIGNERS

Video Game Design: The design of the content and rules of a video game, including: gameplay, environment, storyline, and characters.
Some subdisciplines are (in no particular order):

- World design, content design, game writing, audio design, etc.
- System (game mechanic) design.
- Level design.
- User interface (UI) design.

Video Game Designer: The video game designer is the visionary of the game and leads the artistic and technical development of the game (as an individual or as part of a design team).
In the past, programmers included designers. Nowadays, for complex video games, designers are separated from programmers.

WORLD DESIGN, AND GAME WRITING

World Design: The creation of a backstory, setting and theme for the video game, including: inventing a universe and/or a map.

Game Writing: The creation of all dialogues, texts and stories included in a video game. It is one of the initial stages in designing a video game, and it also includes: voice acting, picture editing, and music.

CONTENT DESIGN, AND AUDIO DESIGN

Content Design: The creation of all characters, items, puzzles, missions, and any other aspect of the video game that is not strictly necessary for the game play. In other words, the generation of the added complexity to a minimum viable video game prototype.

Audio Design: The creation/integration of all of the sounds in a video game, including:

- Background music (title screens, menus, in-game, etc.).
- Sound effects (environment, actions, UI, etc.).
- Voice acting (non-player characters, cutscenes, etc.).

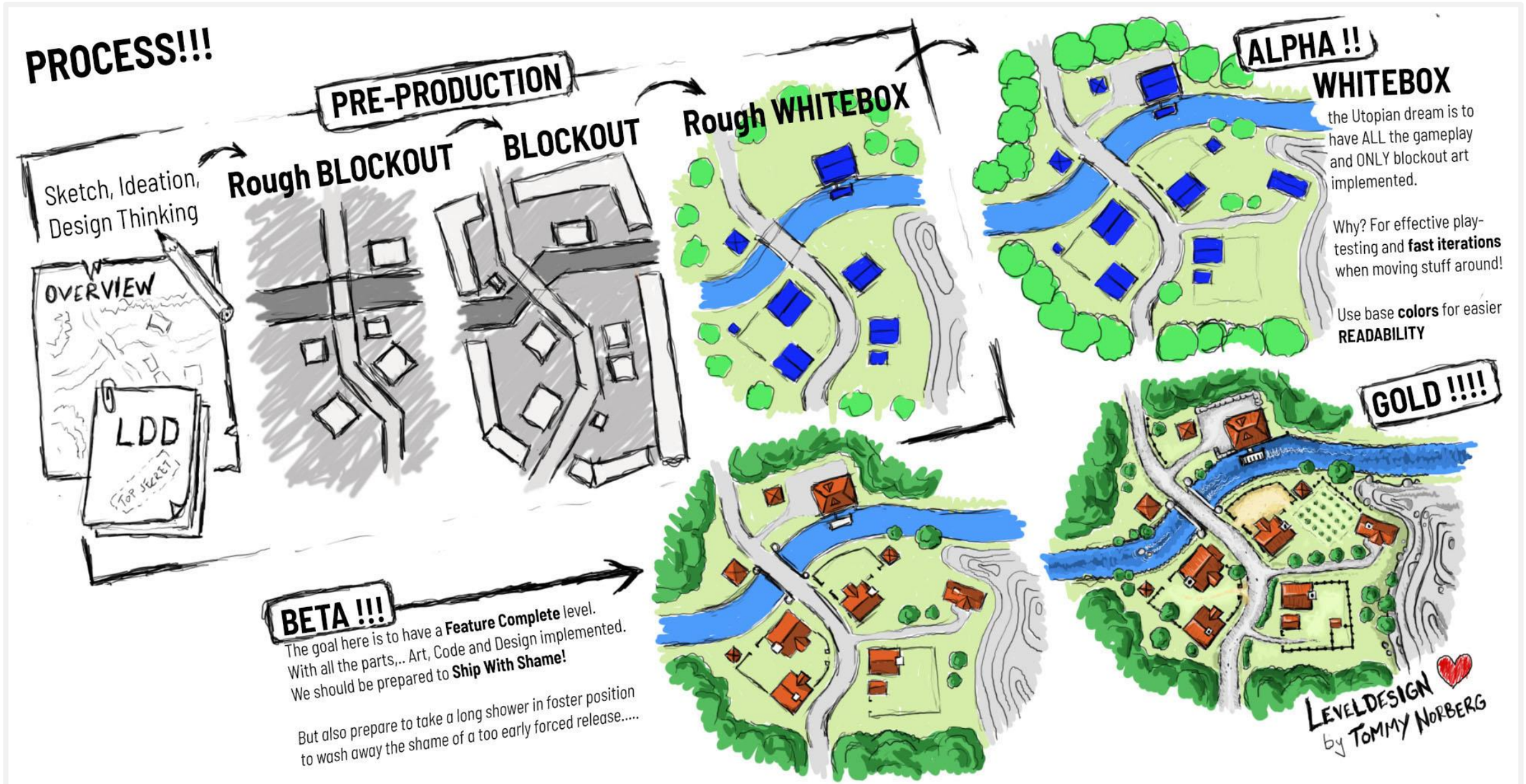
LEVEL DESIGN

The creation of video game levels and their features.

Level design includes multiple different technical fields: illumination, space, framing, color/contrast, etc. All these techniques/elements can be used:

- To draw the player attention.
- To guide/mislead the player.
- To improve immersion, etc.

LEVEL DESIGN: EXAMPLE



SYSTEM DESIGN

Also called Game Mechanics Design, it is the creation of all the game rules and mathematical patterns necessary to simulate a game designed to interact with the player.

It is considered the main contributor to the *"experience"* a player has with a video game.

Example: A complex game mechanics system leads to a more unpredictable gameplay, and results in a more immersive experience for the player.

SYSTEM DESIGN: EXAMPLE

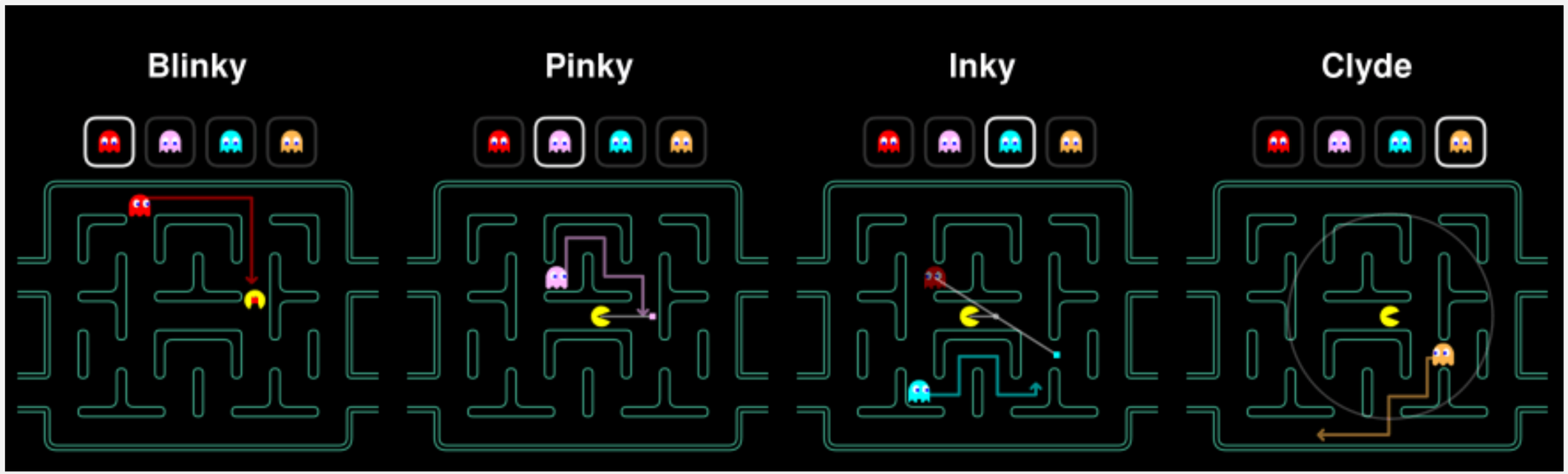


Figure: The patters used by the different *"ghosts"* (enemies) in the video game *"Pac-Man"* when *"chase mode"* is activated.

USER INTERFACE DESIGN

The creation of the user interactions and feedback interface, including:

- **Menus:** settings, in-game, etc.
- **Heads-up displays (HUDs):** life bars, ammo counters, mini-maps, timers, etc.
- **Controls:** mouse-keyboard, point-and-click, joypad, etc.
- **Visual feedback:** damages, power ups, etc.

UI design is also interconnected with system (game mechanics) design.

UI design decides the amount of information provided to the player: finding a good tradeoff between making the video game intuitive/user-friendly but also engaging/challenging.

USER INTERFACE DESIGN: EXAMPLE

Figure: The non-diegetic UI elements in the video game *"Star Wars"*.

GAME DESIGN DOCUMENT

A game design document (GDD) is a *"living"* software design document of a video game.

A GDD is edited by the design/development team and it is used in the video game industry to organize the design/development process.

When a video game is commissioned by a publisher, the GDD is created and it is attached to the agreement between publisher and developer.

Example: See GDDs of some commercial video games (Doom, GTA, Silent Hill 2).

LEVEL DESIGN

https://en.wikipedia.org/wiki/Level_(video_games)

WORK-IN-PROGRESS

SYSTEM DESIGN

https://en.wikipedia.org/wiki/Level_(video_games)

WORK-IN-PROGRESS

USER INTERFACE DESIGN

https://en.wikipedia.org/wiki/Level_(video_games)

WORK-IN-PROGRESS

APPENDICES

Appendices

- Video Game Terminology
- References

VIDEO GAME TERMINOLOGY

Campaign: The main story of the game being played (solo, co-op, multi-players).

Checkpoint: A location in a game level used as a respawn point whenever a player dies (or stops playing), usually representing as a safe point (to avoid losing all progress).

Co-Op: Also called cooperative gameplay, consists in gameplay designed for cooperative multi-player actions.

Cutscene: A cinematic clip in the video game, usually uncovering part of the narrative.

Difficulty: The setting at which the player chooses to play: usually from *"easy"* to *"hard"*.

Game Over: The game status when the player has lost (player dead, time over, etc.).

Hit Points: Also called life points, they represent the player life in-game, or how much damage the player can take before dying in-game.

VIDEO GAME TERMINOLOGY (2)

Mana/Magic Points: They represent how much magical power a player has in-game.

Map/Level: Part of the game world.

NPC: Also called non-player character, this is a character populating the game world for the purpose of giving tips, making the game world more realistic, etc. Usually the player can interact with NPCs, but he cannot control them.

PC: Also called player character, this is a character that can be controlled by a player (the opposite of an NPC).

Sidequest: A quest that is not related to the main quest or campaign of the game. These are usually optional (non-required) quests in which the player receives bonus rewards or skills for completing them.

VIDEO GAME TERMINOLOGY (3)

XP: Also called experience points, they represent the amount of experience gained by the player. They are usually used in leveling-based games, in which the player advances by incrementing his level or skills (gaining better/new abilities, etc.).

REFERENCES

External References

- Complete list of references in appendices.
- Wikipedia – Video Game Design: en.wikipedia.org/wiki/video_game_design
- Wikipedia – GDD: en.wikipedia.org/wiki/game_design_document
- Game Designing – Game Mechanics: www.gamedesigning.org/game-mechanics
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