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Lecture 3

Design Elements

Reminder: Aspects of a Game

- **Players**: How do humans affect the game?

- **Goals**: What is the player trying to do?

- **Rules**: How can the player achieve the goal?

- **Challenges**: What obstacles block the goal?

Design Elements

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Formal Design Elements

- **Players**: Player Mode Sketches

- **Goals**: Objectives

- **Rules**: Actions and Interactions

- **Challenges**: Obstacles and Opponents

Design Elements

Player Mode Sketches

- Game may have several *player modes*
  - Ways in which player interacts with a game
  - **Example**: Inventory screen vs. combat screen

- You should *storyboard* all of your modes
  - Sketches of each of the major player modes
  - May have action (like movie storyboard)
  - Illustrate how player interacts with game

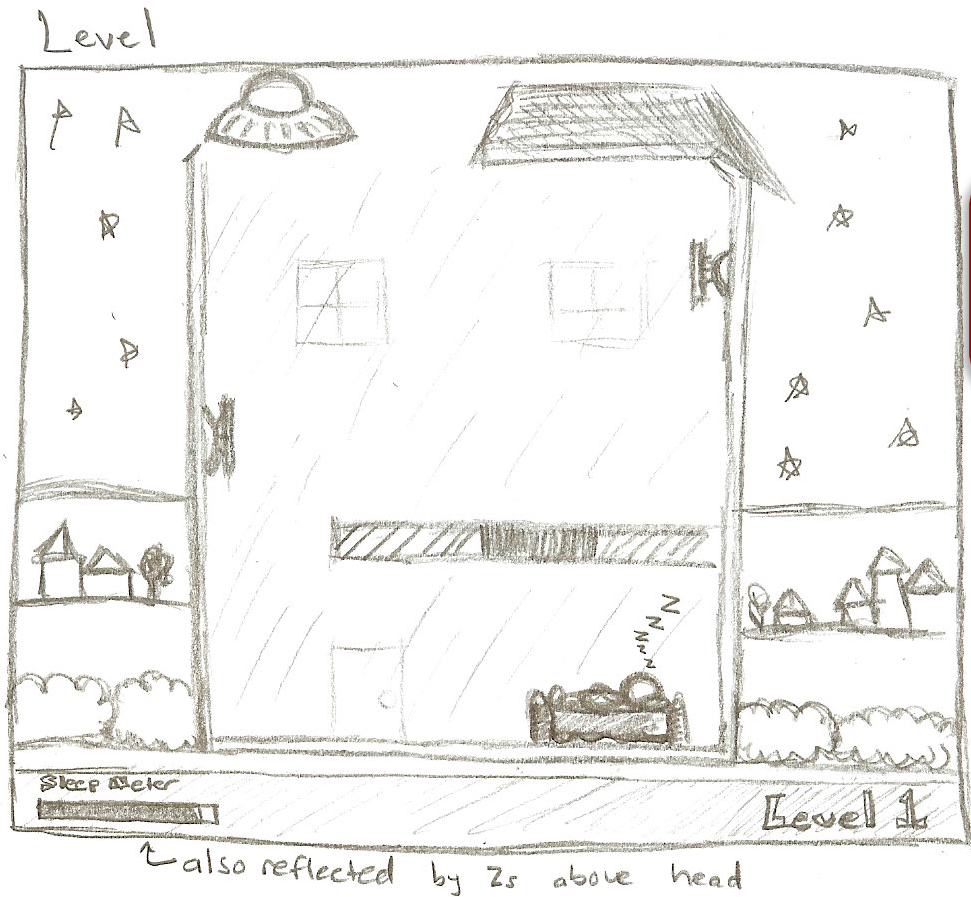Design Elements

Dragon Age: Standard Mode

Design Elements

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Dragon Age: Inventory Mode

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Aside: *Help the Hero*

Design Elements

Lifted: Player Mode Sketch

Indicating Action

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Lifted: Completed Game

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Diagramming Action

Design Elements
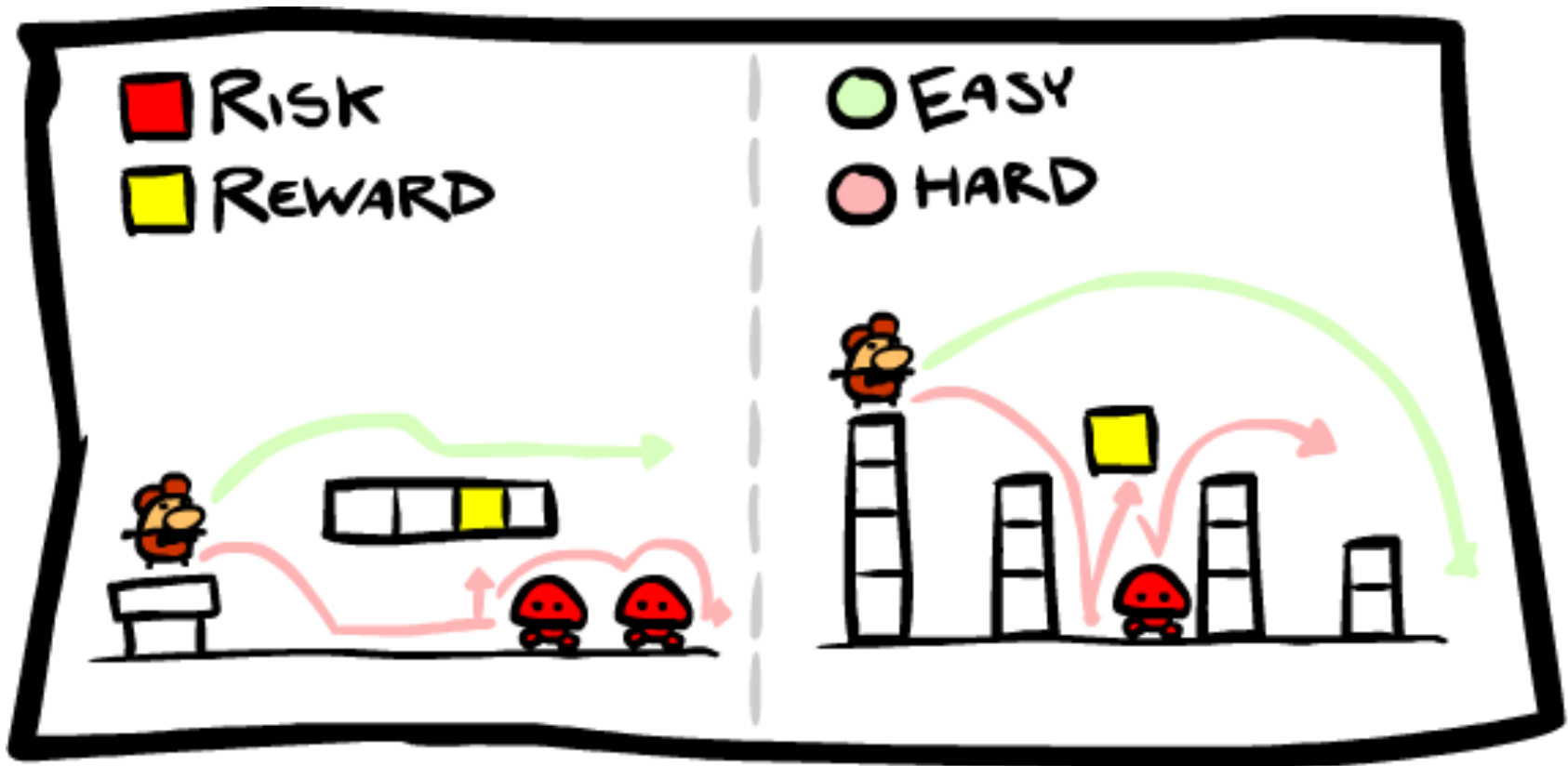
Objectives

- Anything a player might strive for

- May be a primary game objective
  - Progressing the story
  - "Completing" the game

- May be an auxiliary game objective
  - Side missions/quests
  - Unusual achievements

- Sometimes player-directed
  - Reward structure in sandbox games

Design Elements

Objectives

- **Primary** objectives reflect vision
  - Wish fulfillment: I want to _____
  - Help player realize the dream

- **Auxiliary** objectives address player style
  - Achievements for achievers
  - Easter eggs for explorers
  - Online resources for socializers

- **Player-driven** objectives require a different focus
  - Start with a toy, and layer dramatic elements on it

Design Elements

Some Objective Categories

- **Capture**: take or destroy something of value
  - Includes "kill all enemies of type X"

- **Race**: reach a goal within time

- **Chase**: catch or elude an opponent
  - Race with a dynamic goal/destination

- **Rescue/Escape**: Get someone to safety

- **Exploration**: Locate something in game world

Design Elements

Some Objective Categories

- **Capture**: take or destroy something of value
  - Includes "kill all enemies of type X"

- **Race**: reach a goal within tim...

- ...
  - ...e goal/destination

See the text for more ideas

- **Rescue/Escape**: Get someone to safety

- **Exploration**: Locate something in game world

Design Elements

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Actions

- **Verbs** that describe what the player can **do**
  - Walk
  - Run
  - Jump
  - Shoot

- Does not need to be attached to an avatar
  - Build
  - Swap
  - Rotate

Design Elements

Actions

- **Verbs** that describe what the player can **do**
  - Walk   (left or right)
  - Run   (walk, but faster!)
  - Jump   (up; jump/run for left or right)
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  } Action Platformer

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Design Elements

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  - Walk   (left or right)
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  Action Platformer

- Does not need to be attached to an avatar
  - Build   (RTS or simulation)
  - Swap   (Bejeweled clones)
  - Rotate   (Stacking games)

Design Elements

Designing Actions

- Starts with brainstorming the verbs
  - Define the types of verbs
  - Define the scope of the verbs

- **Design Goals**
  - Enough verbs to avoid being too simple
  - But not so much to be confusing (verb bloat)
  - Do the verbs *directly* achieve the goal?

- Each verb maps to a single **input**

Design Elements

Evaluating Your Actions

- How important are they?
  - Do they help achieve goal
  - If not, why are they there?

- **Example**: Platformers
  - **Goal**: reach exit location
  - Killing enemies is *optional*
  - Other actions are *secondary*

- **Goal**: Minimize verbs
  - More verbs lead to **bloat**
  - Leverage **interactions**

Design Elements

The Game State

- Collection of values representing game world
  - Location, physical attributes of each game object
  - Non-spatial values (e.g. health) of these objects
  - Global non-spatial values (e.g. difficulty)

- Actions *modify* the game state

- Not necessary to specify this in early designs
  - Focus on coming up with your actions first
  - Only need enough state to understand **interactions**

Design Elements

Interactions

- Not a *direct* action of player
  - Result of the **game state**
  - Can happen w/o controller

- **Example**: collisions
  - May be bad (take damage)
  - May be good (power-up)

- **Other Examples**:
  - Spatial proximity
  - Line-of-sight
  - Resource acquisition

Design Elements

Game Mechanics

- **Game mechanic**
  - Relationship of **verbs**, **interactions**, and **state**
  - Often call this relationship the "rules"
  - **Gameplay** is manifestation of these rules

- **Example**: Joust
  - Verbs: Flap; go left or right
  - Interaction: Collision with opponent
  - Rule: If hit opponent, lower player dies

Design Elements

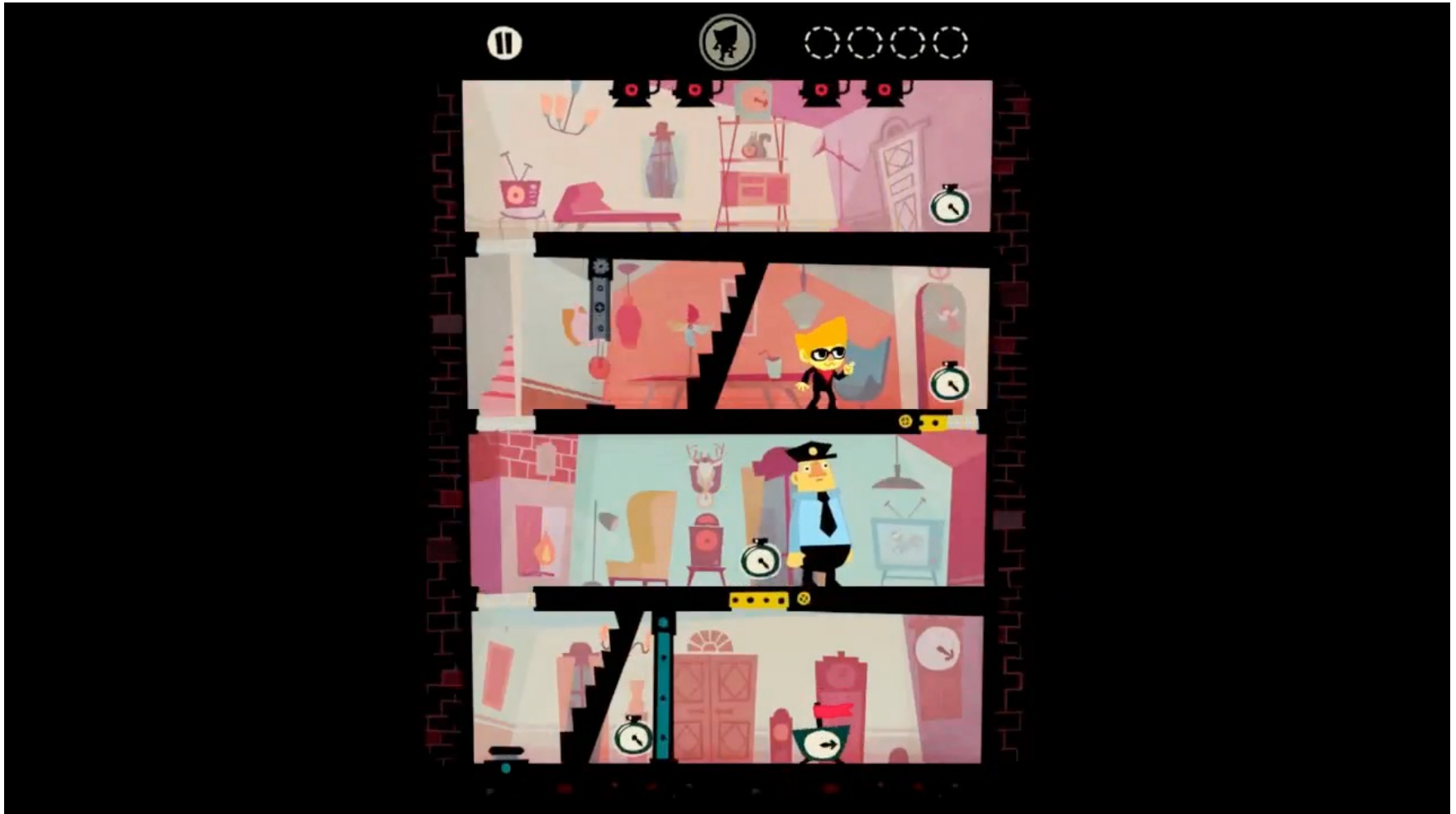# Gameplay Example: *Joust*

Design Elements

Verbs vs Interactions

- **Design Idea**: minimalism
  - Game with very few verbs
  - Mechanics are all interactions
  - Common in mobile, tablet

- **Example**: Sneak Beat Bandit
  - Has only one verb: *move*
  - Rhythm game; move to beat
  - All movement on rails
  - If obstacle in way, turn
  - Line-of-sight mechanics

Design Elements

Beat Sneak Bandit

Design Elements

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Avoid Verb Proxies

- **Proxy**: verb that activates another verb

  - "Use an item"   (what does the item do?)

  - "Shoot"   (what does the weapon do?)

- Make the **outcome** of your verbs clear

  - Fire standard projectile (effects have "travel time")

  - Fire continuous beam   (effects are instantaneous)

- Important questions to ask

  - How does help reach the goal?

  - How is it outcome challenged?

Design Elements

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Avoid Verb Proxies

- **Proxy**: verb that activates another verb
  - "Use an item"   (What does item do?)
  - "Shoot"   (What does weapon do?)

- Make the **outcome** of real verbs clear

  > Behavior is defined
  > by the *interaction*
  > of projectile/beam

  - Fire standard projectile (effects have "travel time")
  - Fire continuous beam (effects are instantaneous)

- Important questions to ask
  - How does help reach the goal?
  - How is it outcome challenged?

Design Elements

Challenges

- **Obstacles**
  - Prevent progress towards goal
  - Have to be "overcome"

- **Opponents**
  - Players or bots with their own goals
  - May or may not need to be overcome

- **Dilemmas**
  - Can only perform one of several actions
  - "Correct" choice not immediately clear

Design Elements

Challenges

- **Obstacles**
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- **Opponents**
  - Players or b...
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See Text for Specific Examples
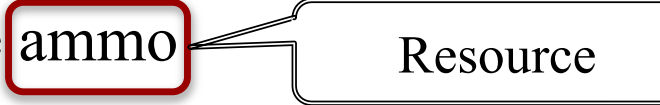
Design Elements

Challenges: Limitations

- You cannot always perform an action
    - Shooting may require ammo
    - Cannot (always) jump in mid air

- **Limitation**: requirement to perform action
    - Boolean test (like an `if-then`)
    - Checked at time of user input

- Only **one** limitation per verb
    - If more than one, split into more verbs
    - Reason double-jump is distinct

Design Elements

Challenges: Limitations

- You cannot always perform an action
  - Shooting may require ammo   Resource
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Challenges: Resources

- Resources are **non-spatial** part of game state
  - Any value not a location or physical attribute
  - May be global or attached to an entity

- Examples
  - **Entity:** ammunition, health points
  - **Global:** enemy spawns, time remaining

- Resources often implement **limitations**

- They also define the **game economy**

Design Elements

Challenges: Resources

- Resources are **non-spatial** part of game state
  - Any value not a location or physical attribute
  - May be global or attached to an entity

- Examples
  - ~~health~~ points
  - ~~enemy~~ spawns, time remaining

Will cover in more detail later.

- Resources often implement **limitations**

- They also define the **game economy**

Design Elements

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Putting It All Together

- Start with your **vision**
  - I want to _____
  - This creates setting and player goals

- Create a (partial) list of the following:
  - **Objectives**
  - **Actions**
  - **Interactions**
  - **Challenges**

Sketch **player modes** to show them in action

Design Elements