COSC 419:
Mobile Educational Game Development

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Game Design

- With:
  - A big picture story
  - Game idea
  - Problem for game (player's goal)

- Two main questions:
  - What do you want the players to do
  - What do you want your game to look and feel like?

Character Design

- What the character does
  - Basic abilities
  - Development and progression
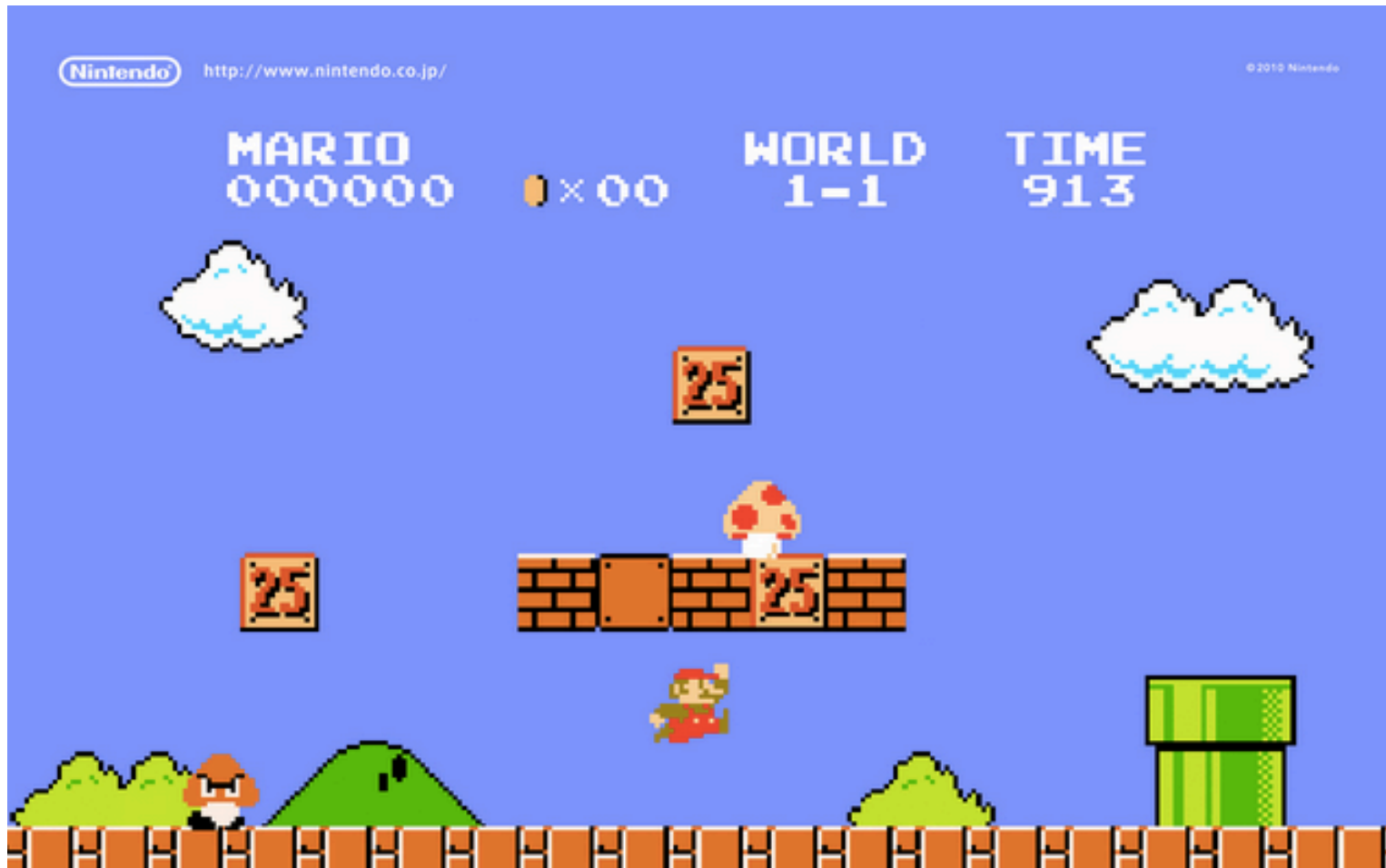

- What the character looks like
  - Recognizability

Dig

- The verb develops over time

Figure 2.4 Jane attempting to dig through clay and through metal.

Jump

Move + Jump

- Relationship between verbs

Figure 2.3 Development of the relationship between horizontal and vertical movement in *Super Mario Bros.*

Shoot Lightning

Character Progression

- Select a main *verb* for basic ability

- "Extend" the verb
  - Give player variety and choice

- Develop through:
  - Level completion
  - Gain special power (temporarily)
  - Interaction with other characters

Avoid Too Many Verbs

```
PUSH    EAT    TALK    MATCH
PULL    HIT    BUY     FISH
OPEN    GET    SELL    ROCK
SHUT    DROP   EXIT    KEY
```

Figure 2.13 Too many verbs makes for a lot of guesswork.

Avoid Orphaned Verbs

- Orphaned verbs – those with no relation to other verbs

- E.g.: each level requires player to *open* a door
  - "open" is orphaned if the level has no other doors or items that can use it (e.g., treasure chests)

- Player will forget to use the verb when required

Character Look and Feel

- Consider plot setting

- List the characters involved

- What is the …:
  - Overall atmosphere?
  - Split between good/bad guys?
  - Interaction among characters?
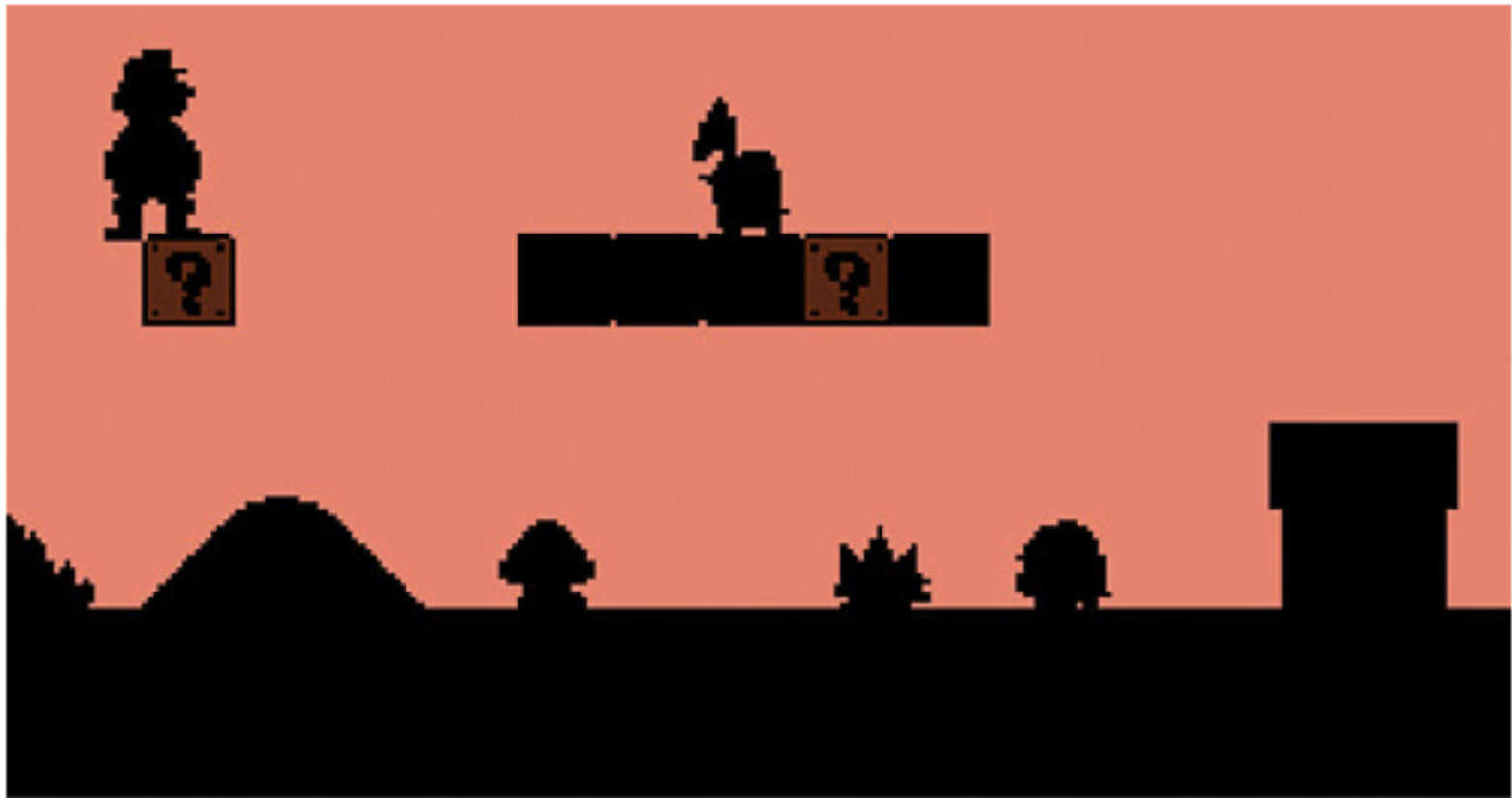 - Distinctive qualities of each character?

Character Design

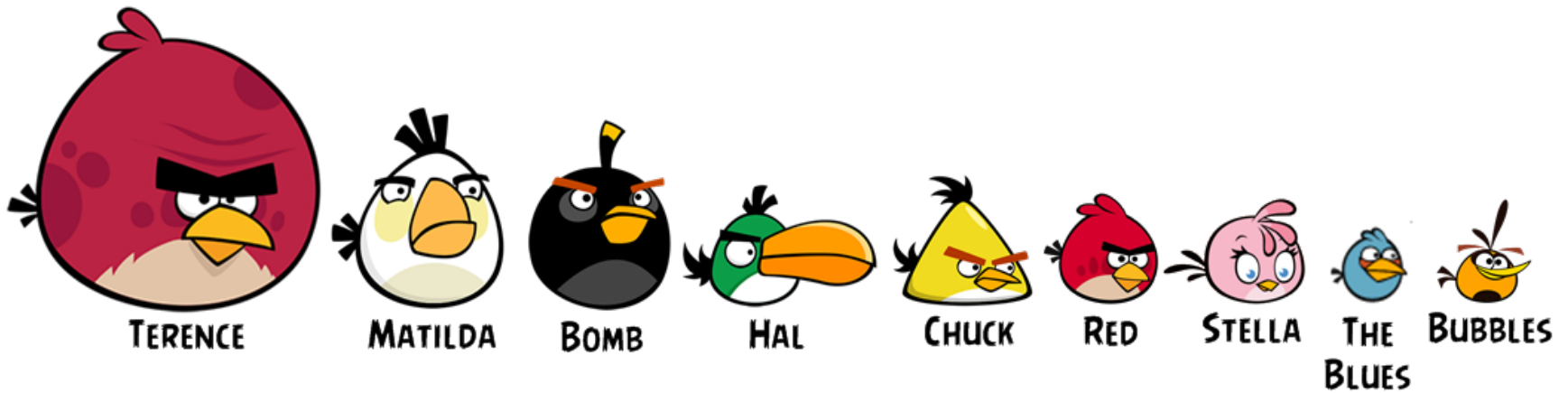**Figure 4.7** Mario characters in silhouette.
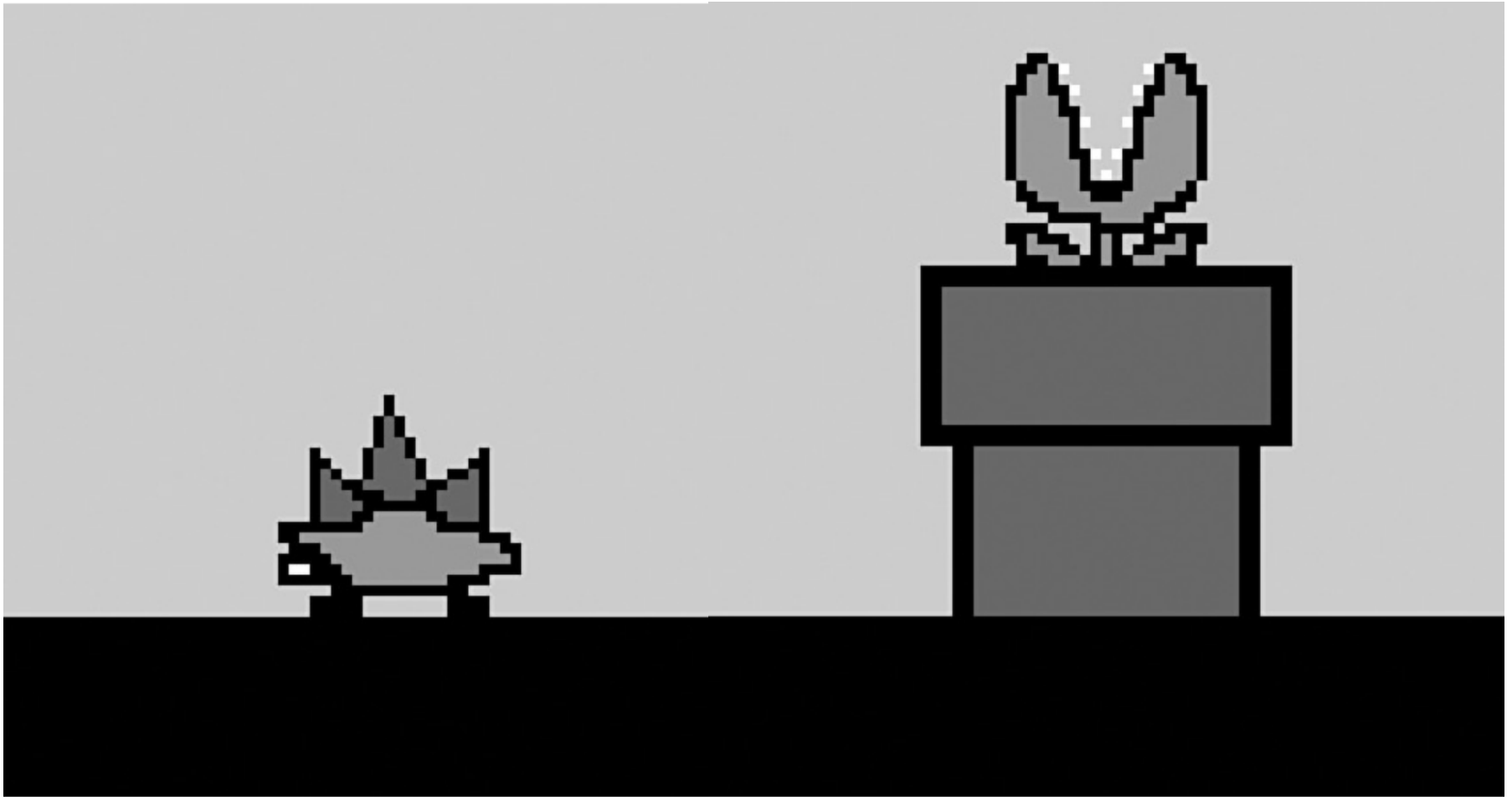
Recognizability


Image taken from wikia.com

Spiny Beetle and the Piranha Plant

Recurring Motifs

- Reinforce game's ongoing visual vocabulary

- Affordance
  - Player encounters distinctive-looking object with certain properties
  - Expectation: Other similar-looking objects should also have those properties

- E.g.: spiny beetle and piranha plant
  - Both have spikes
  - Can't jump on them

Safe to Jump onto?
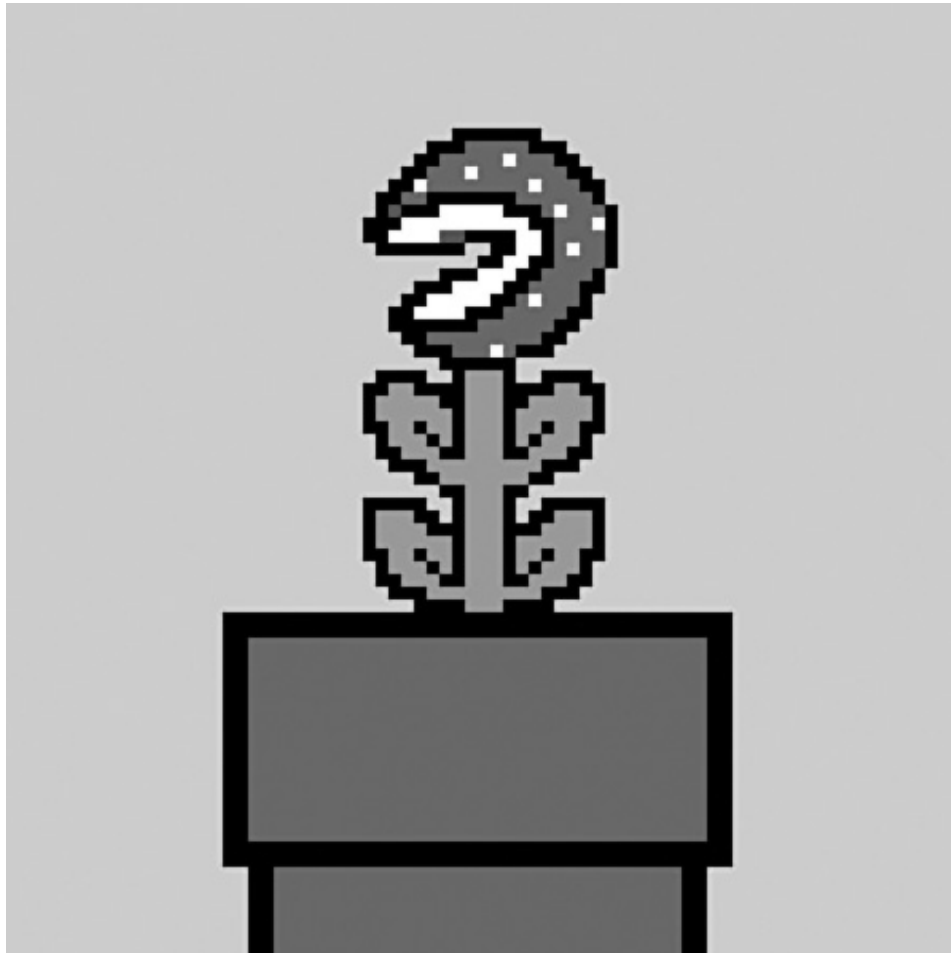
Safe to Jump onto?
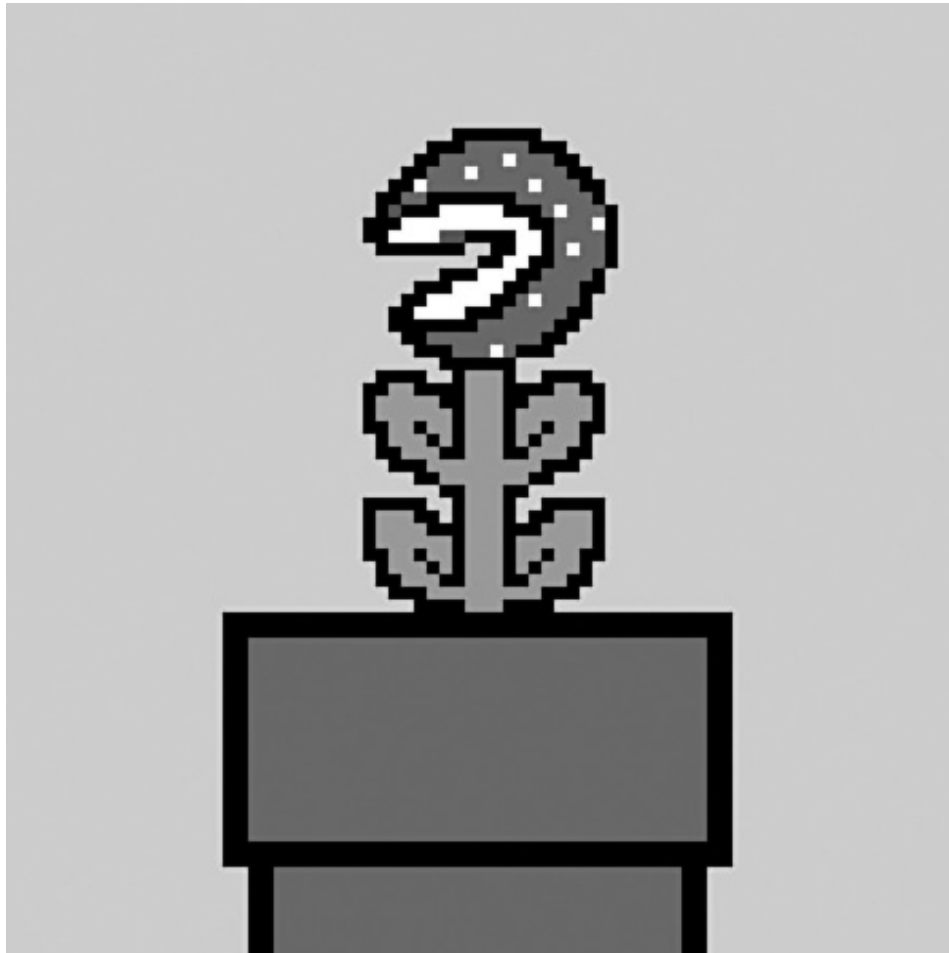
No! Mario dies!

Case of visual mis-communication in design

Common Character Design

- Consider common story

- Categorize the characters

- What is the main character's abilities?

- Interaction with other characters?

- Look and feel of each character?

User Scenarios

- A user scenario is a short description of the game experience
  - Short like an *elevator pitch*
  - Highlights important moments
  - Chance to engage audience

- Written for the player, e.g.:
  - "You have to tread through a slimy tunnel"
  - "He swings a knife at you and barely misses"

Refining the Scenario #1

- Context and impressions

Figure 4.2 Both versions of the hole at the bottom of *Super Crate Box* are deadly, but the one on the right makes that visually obvious.

Refining the Scenario #2

- Engineer memorable moments
  - Small input, big impact

Image taken from wikia.com

Refining the Scenario #2

- Engineer memorable moments
  - Flashy finale

Image taken from imgkid.com

Refining the Scenario #2
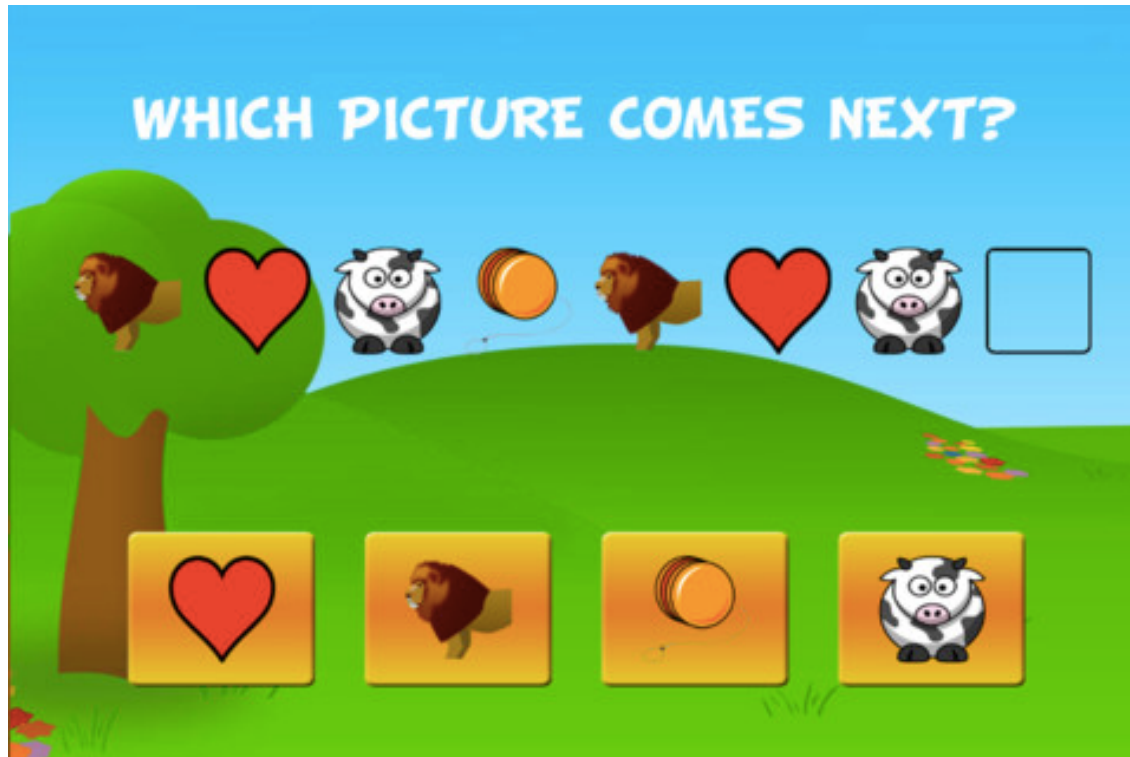
- Engineer memorable moments
  - Puzzlement

Image taken from play.google.com

Refining the Scenario #2

- Engineer memorable moments
  - Reflective choices

Figure 7.13 Making a difficult and memorable choice in *The Walking Dead*.

User-centered design (UCD)

- Design according to the users
  - What do they really need?
  - What are the relevant tasks?
  - What are their abilities?
  - What would they prefer to happen?
  - What is the usage context and environment?
  - Summary: consider their goals, skills, preferences
- Highly iterative!

UCD Characteristics

- Involves users throughout design process
  - Focus groups
  - Questionnaires
  - Interviews
  - Observations
  - Usability testing
  - etc.

Iterative Prototyping

- Uses an iterative design cycle
  - Process is iterative
  - Design is broken up into "chunks"
  - Design a chunk, get **incomplete** prototype, test, get feedback, repeat
  - Series of improvements
  - Continuous user feedback
  - Summary: Design, test, redesign

The Development Cycle
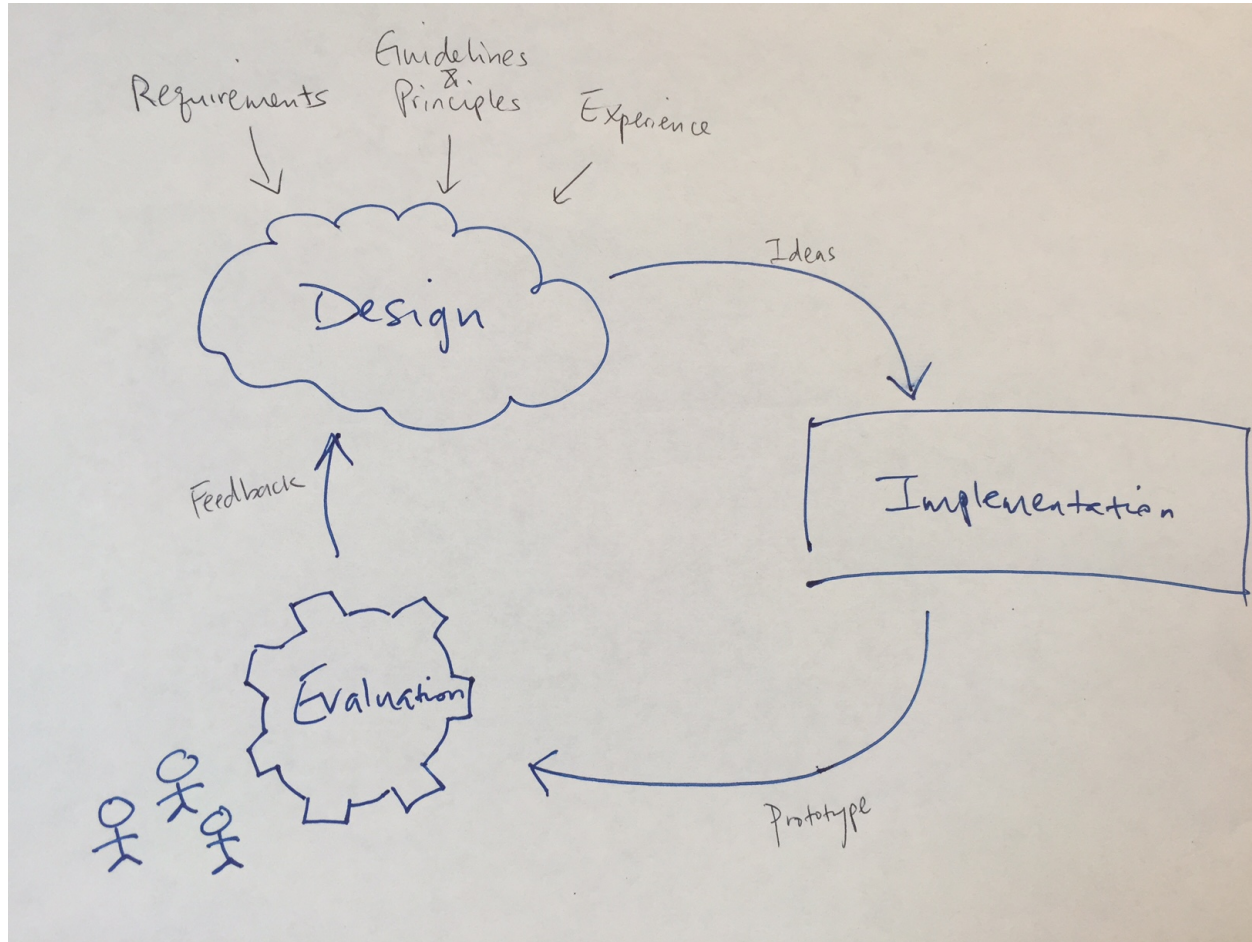
- Each iteration generates a prototype

UCD Methodology

- Early focus on users

- Use iterations

- Test in field environment (ideal)

- Increased adoption rate
  - Increases sense of ownership
  - No longer having software "imposed" on them

- Requires careful management and budgeting
  - Less costly long term

References

- Ch. 2 of A Game Design Vocabulary (Anthropy & Clark 2014)
- Ch. 4 of A Game Design Vocabulary (Anthropy & Clark 2014)