CS/INFO 4154:

Analytics-driven Game Design

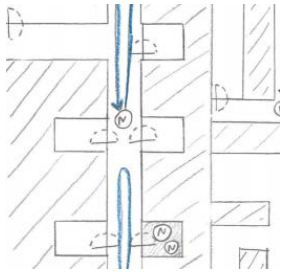
Lecture 4:

Learnability and User Interfaces

The story so far…

Game Mechanics

Brainstorming



Paper Prototyping

Nuts and Bolts

Learnability and User Interfaces
Level Design and Progressions
Architecture and Organization
Artificial Intelligence
Procedural Content Generation
Art and Design

Analytics

Internet Telemetry
Data Analysis
Data Visualization
Large-scale Experimentation
A/B Testing
Multivariate Testing

Game design document

- Converge on one idea
- Plan for the development cycle
- Identify unknowns in the design
- Due **Tuesday, September 15th, 11:59pm**

Throwaway Prototype

- No pressure
- “Hello World!” of your game
- Doesn’t need to be playable
- Doesn’t need to be integrated
- Pick *some piece* of your game and build it
  - Avatar moves/jumps on flat land
  - Hexagonal grid with nothing on it
  - Background artwork
- In class on **Tuesday, September 22nd**

Pong / Asset Creation Graded

- 2 = complete
- 1 = partially complete
- 0 = no submission / didn’t work at all
- Resubmit by **Thursday, September 17th, 11:59pm**

Late Policy

- Some things cannot be turned in late
  - Releases
  - Presentations
- Other things: **-25% per day and a guilt trip**
  - Game Design Document
  - Revised Plans
  - Peer Evaluations

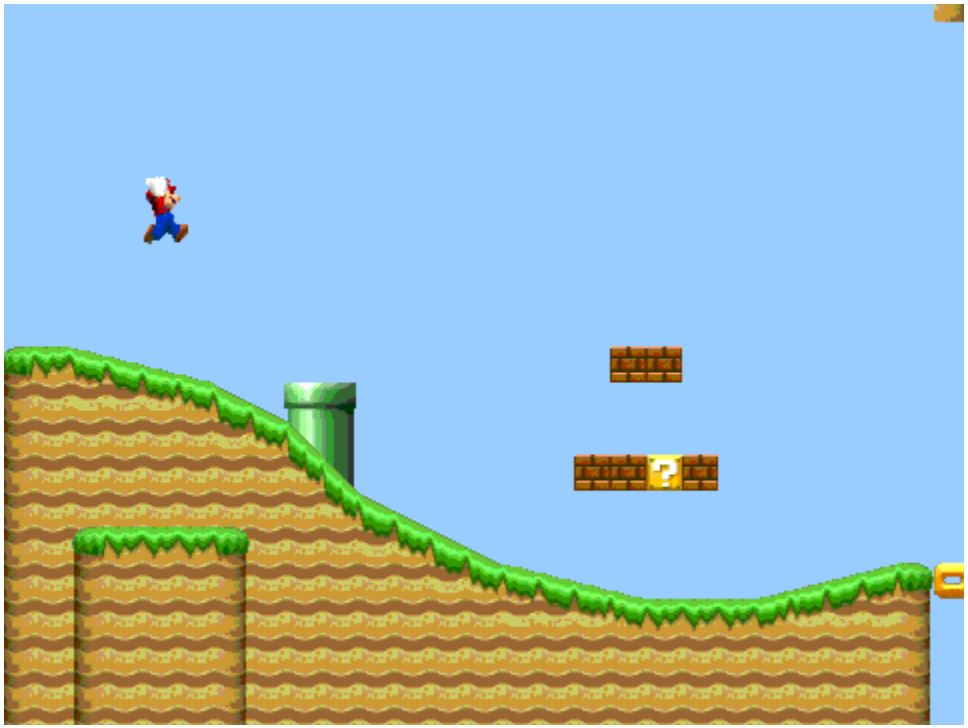
The goal: happy players


Weapons
Club 3 8 1 100
Goblin Shaman Staff 188 10 100
Iron Arrow 1 0.1 1
Rusty Iron Bow 10 8 1 100
Rusty Iron Dagger 5 3 1 100
Rusty Iron War Axe 4 12 1 100
152/200
0
100
NE
E

Learnability

the capability of a software product to enable the user to learn how to use it

How do you learn?



How do you learn?

How do you learn?

How do you learn?

What makes a game learnable?

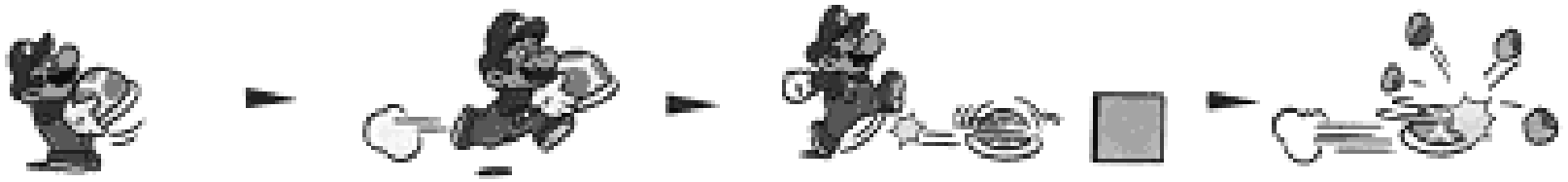
The old days

NES-UM-USA-1

SUPER MARIO BROS. 3™

INSTRUCTION BOOKLET

NEW TECHNIQUES!



Holding a shell

(Holding the B Button)

Running with a shell

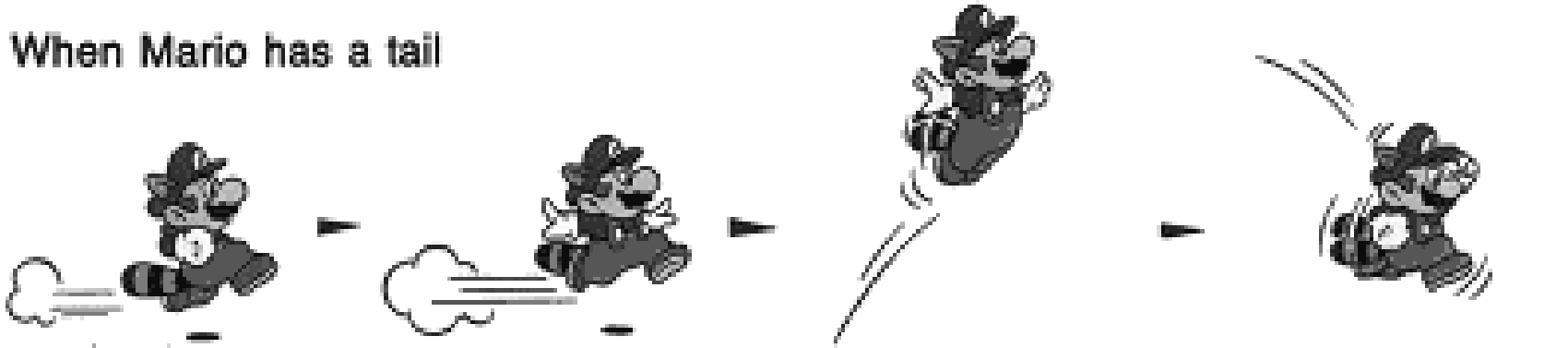
(Holding the B Button)

Kicking the shell

(Releasing the B Button)

Breaking a block

When Mario has a tail



Accelerating

Power Meter going up

More acceleration

Meter full, (P) starting to flash

Take off

Press the A Button repeatedly

Mario can only fly for a short time.


100
150
Menu
Tap on a seed packet to pick it up!
Level 1-1


Level 1:6
Half and Half
Pick up the laser divider.
1/2
1/2
1
1
1/2
MENU
OPTIONS

What is a user interface?

the means by which the user and a computer system interact

What makes a UI “good”?

Critique this UI.

Critique this UI.

Critique this UI

Key Lesson of this Class #1

nobody reads and nobody listens

Key Lesson of this Class #2

people can only keep track of a few things

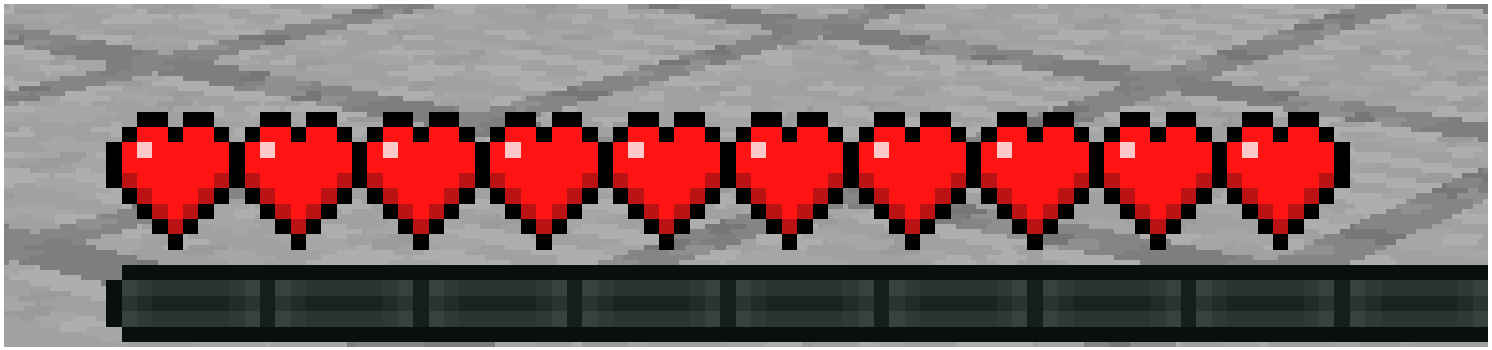
Nielsen’s heuristics for UI design

1. Make system status visible
2. Match the real world
3. Provide control and freedom
4. Be consistent
5. Prevent errors when possible

Nielsen’s heuristics for UI design

6. Facilitate recognition rather than recall
7. Be flexible and efficient
8. Use minimalist design
9. Help users recognize and recover from errors
10. Provide help and documentation

1. Make system status visible



1. Make system status visible

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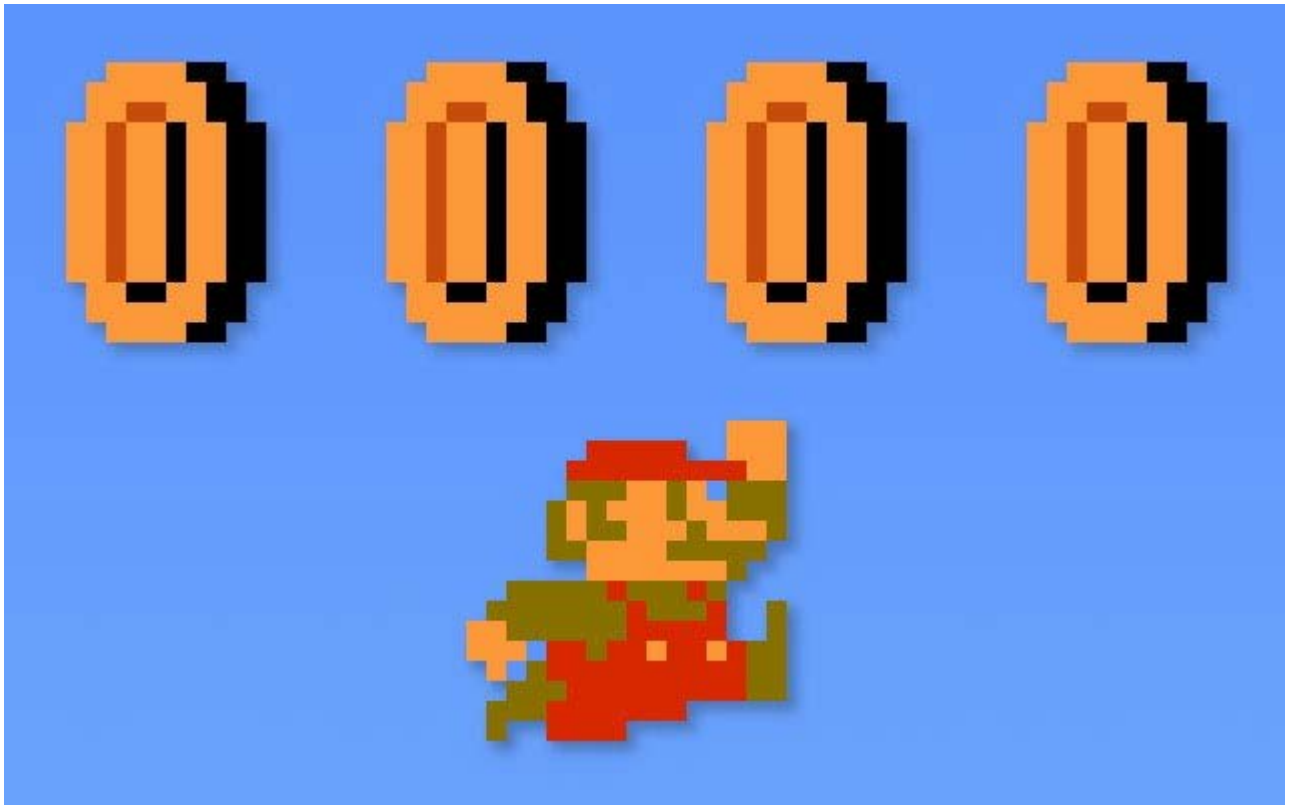
2. Match the real world



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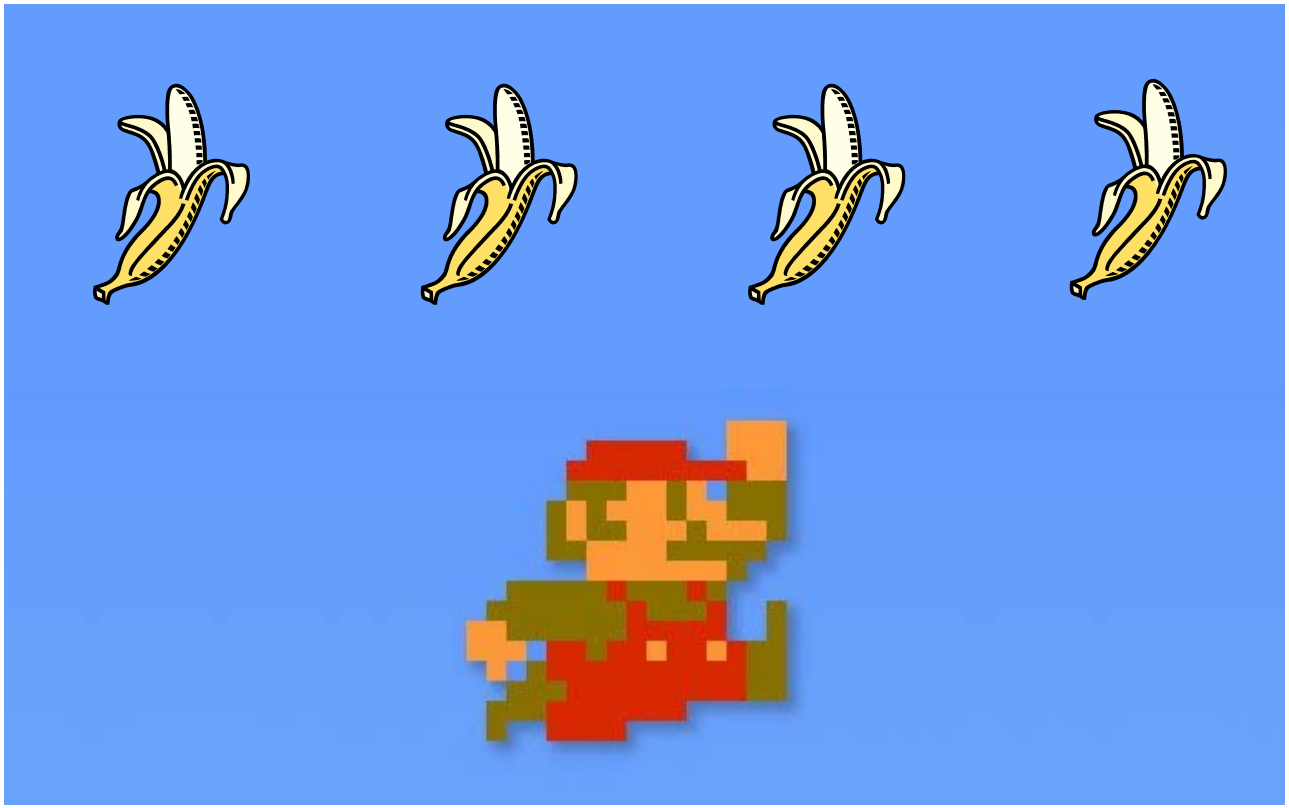

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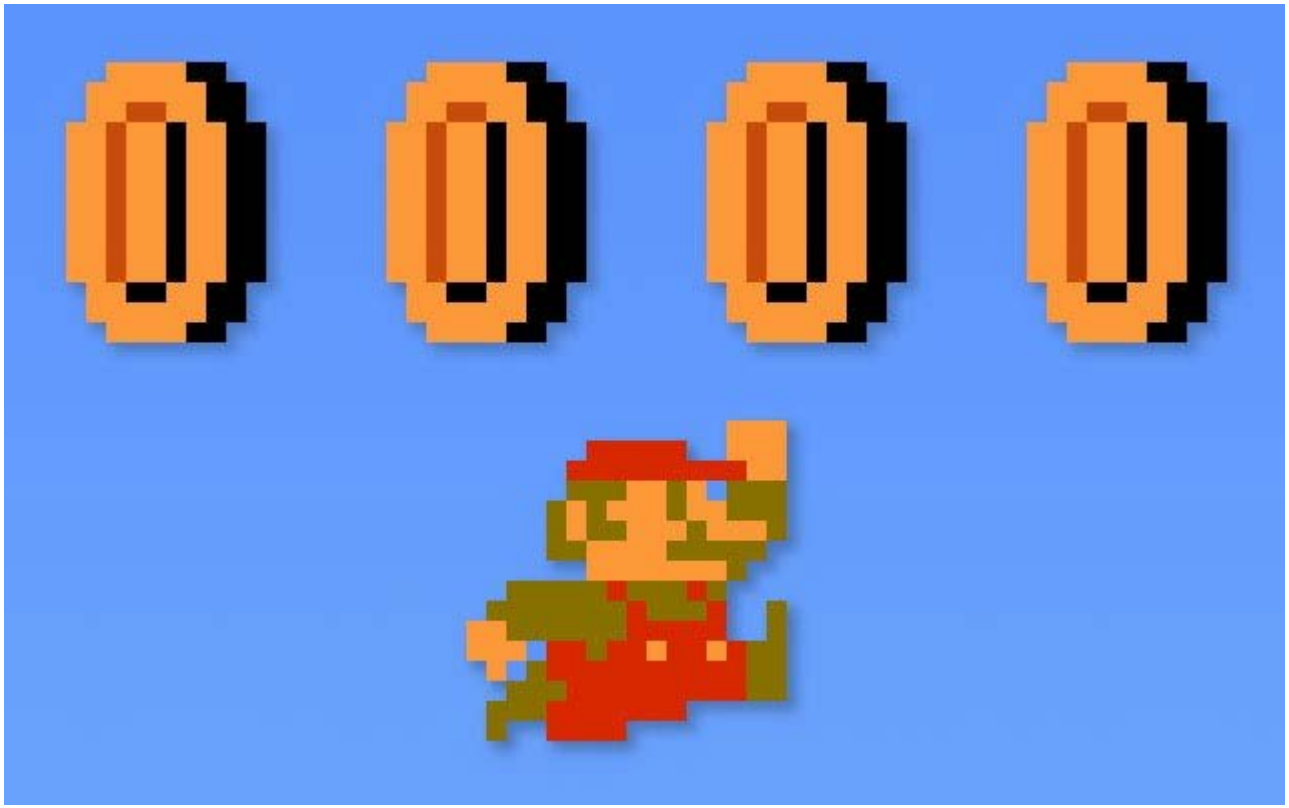

2. Match the real world

6. Recognition rather than recall

- User should ***recognize*** what's going on
- Shouldn't have to ***recall*** a tutorial

6. Use recognition rather than recall

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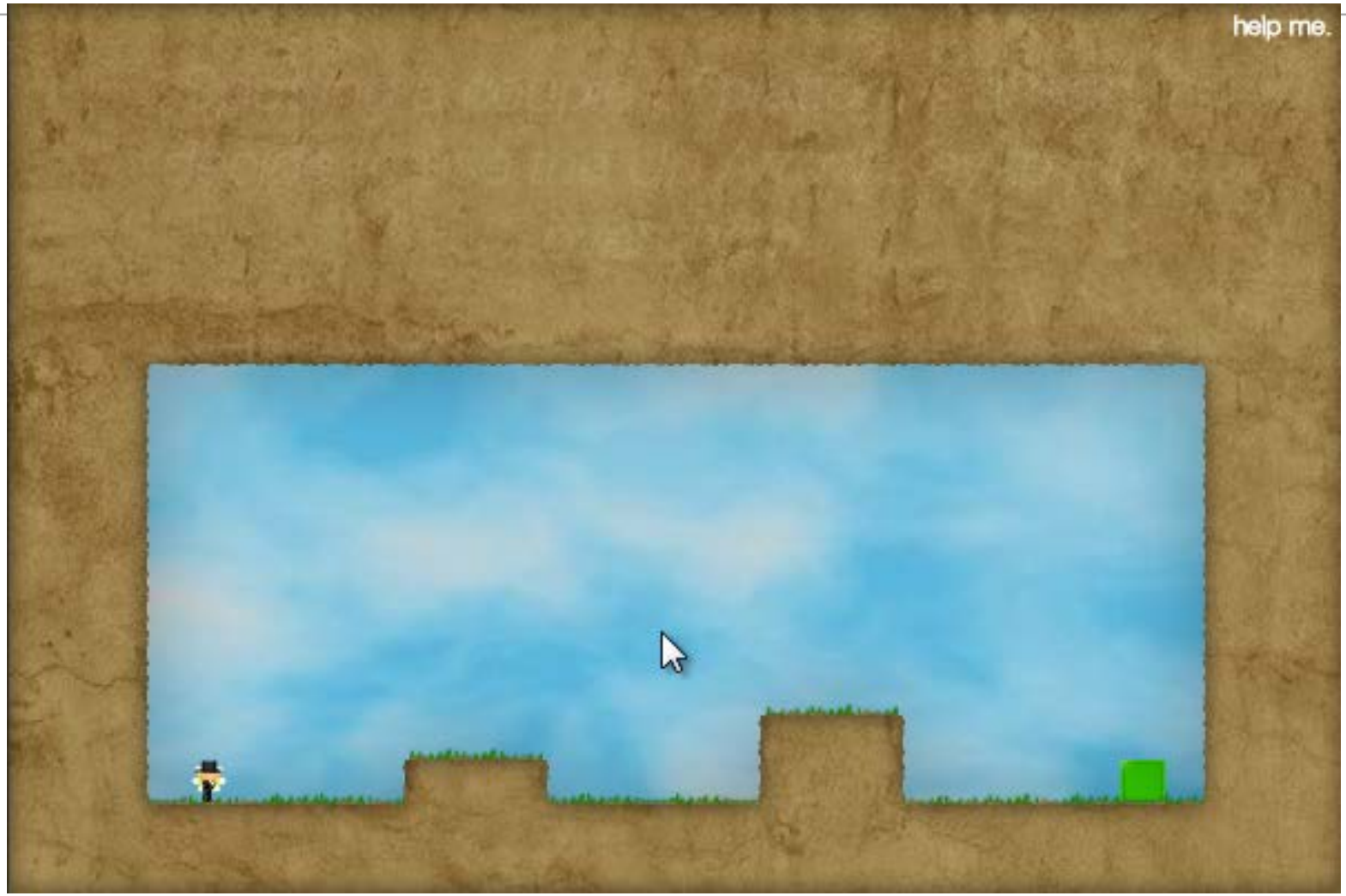
3. Provide control and freedom



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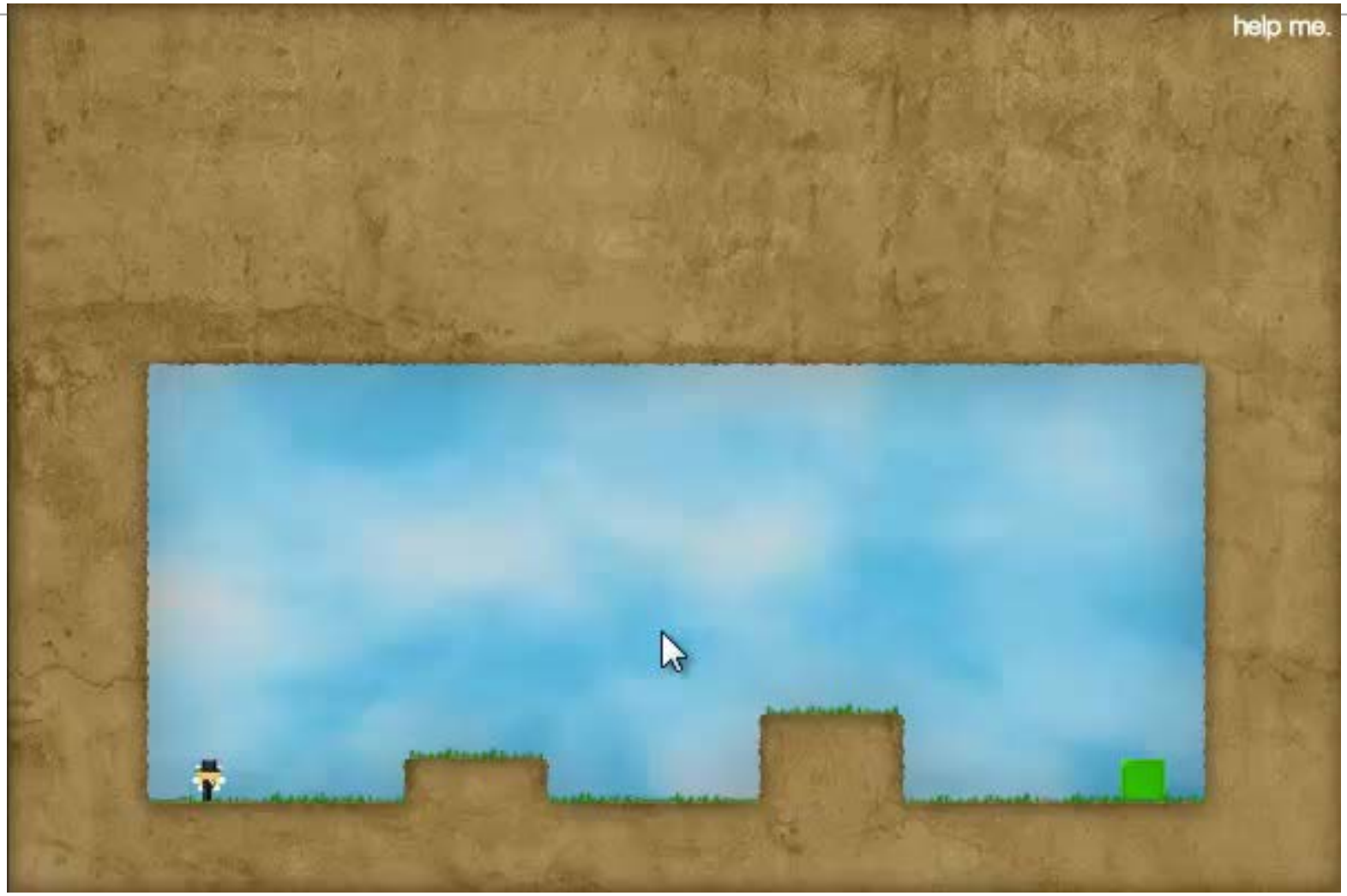

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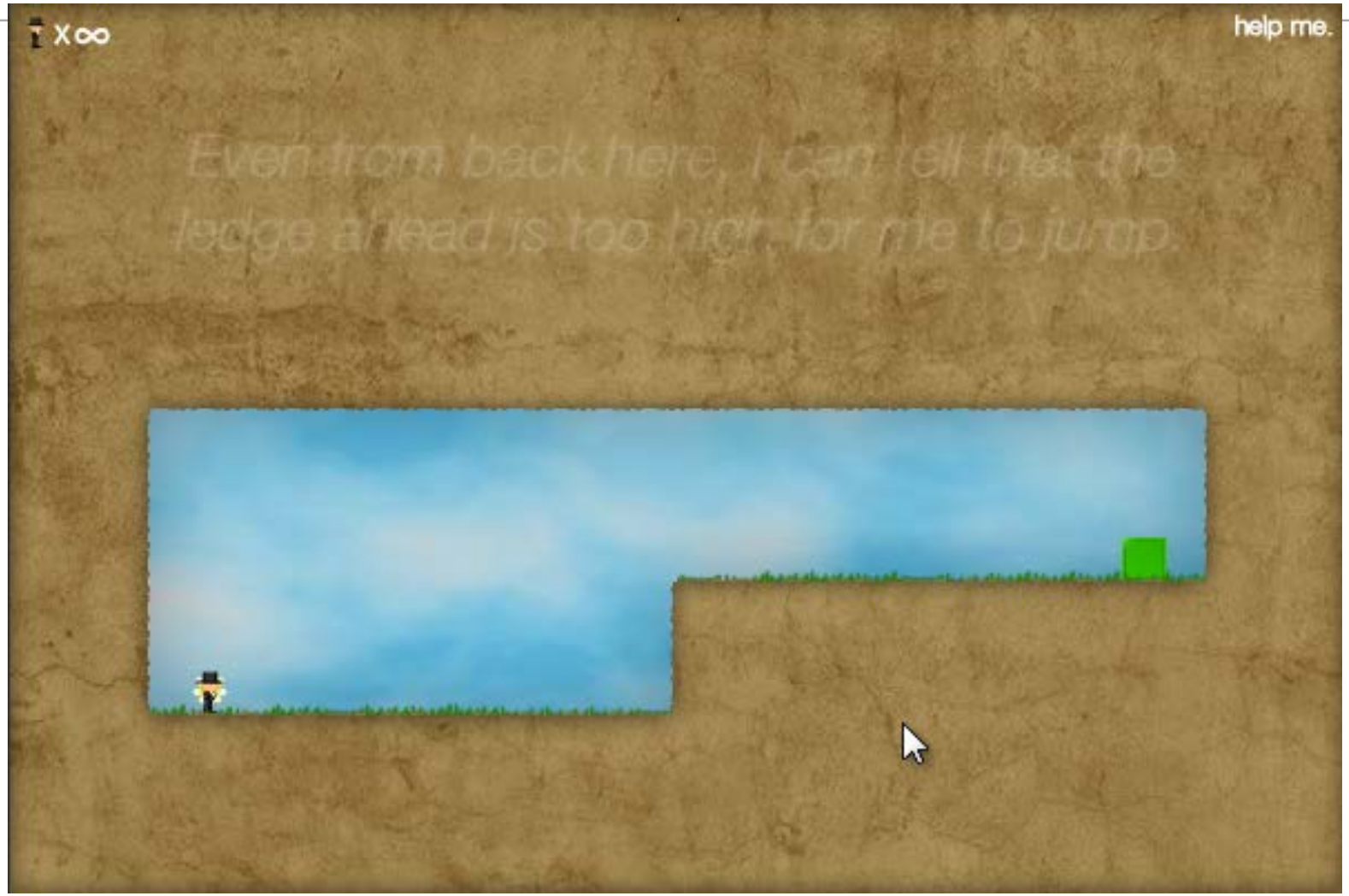

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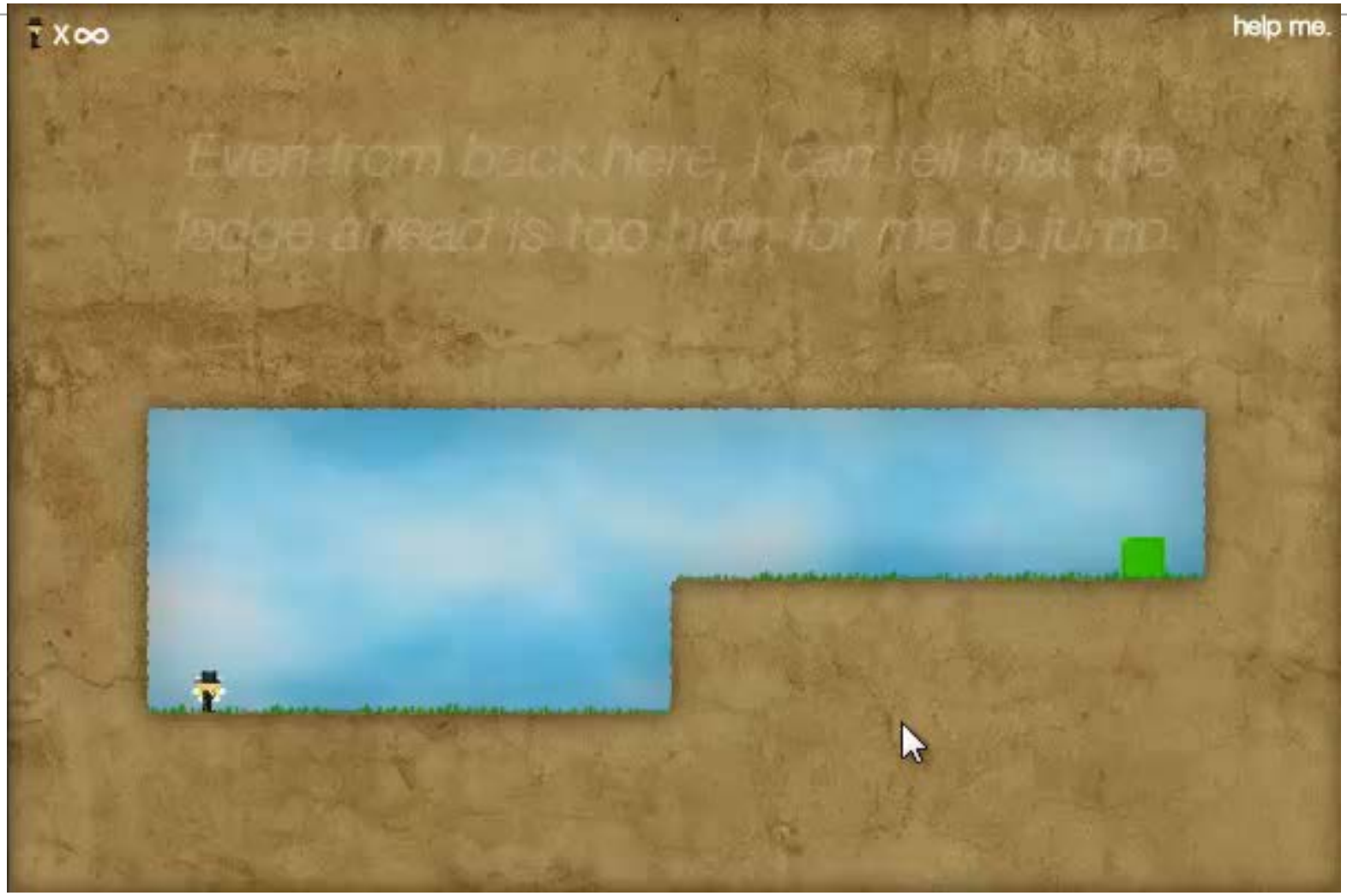

3. Provide control and freedom

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8. Use minimalist design

- Avoid clutter
- Provide ***only*** critical information

8. Use minimalist design

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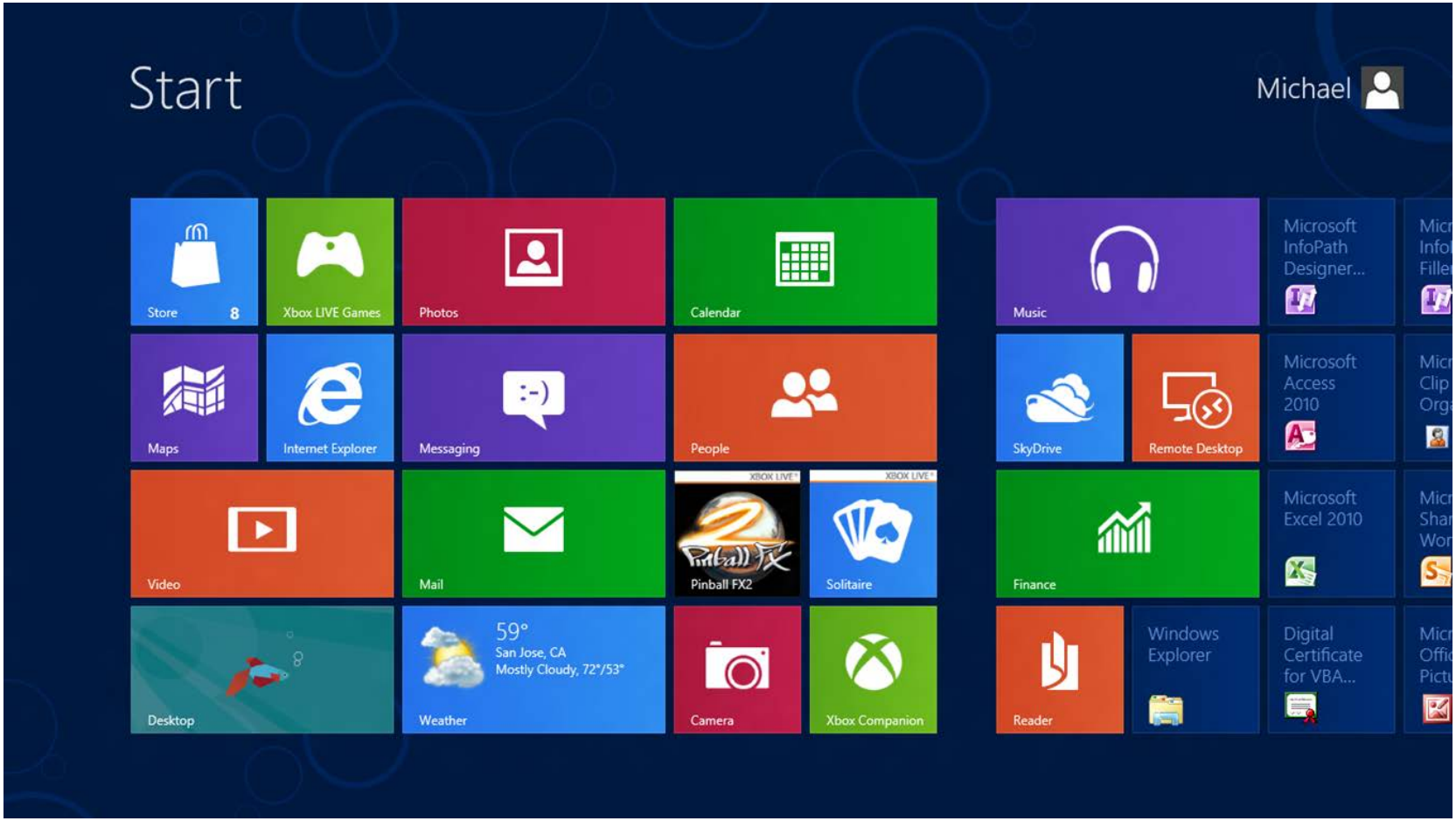
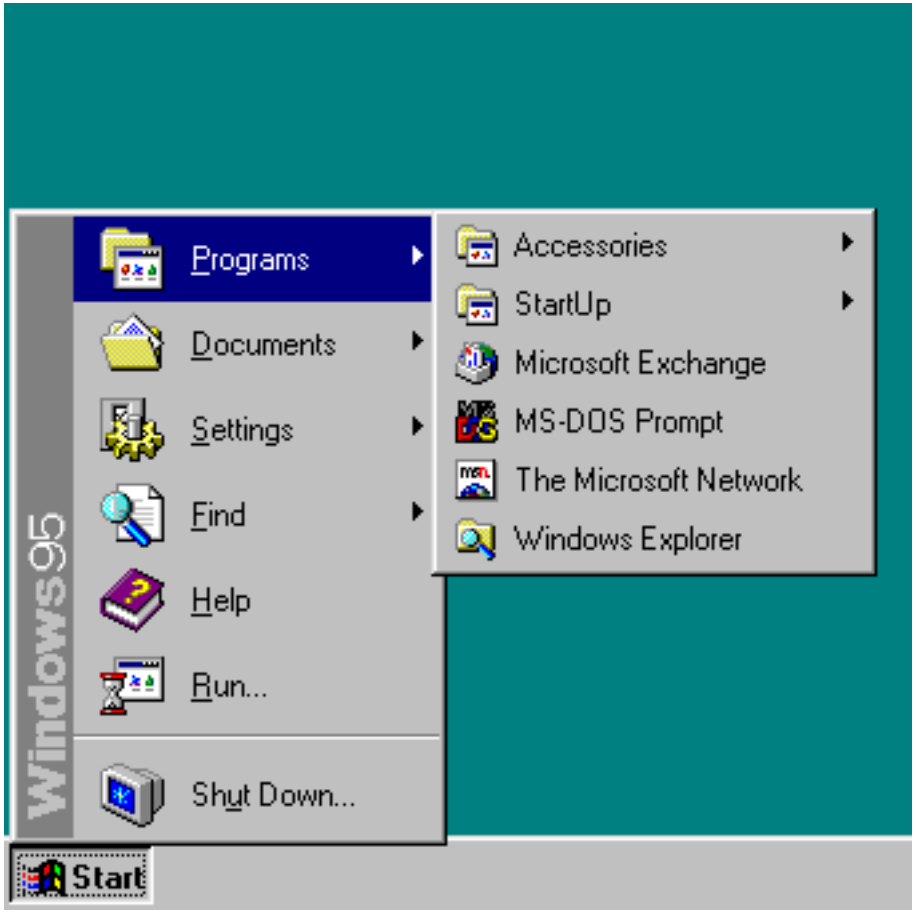


5. Prevent errors



5. Prevent errors

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9. Help users recover from errors

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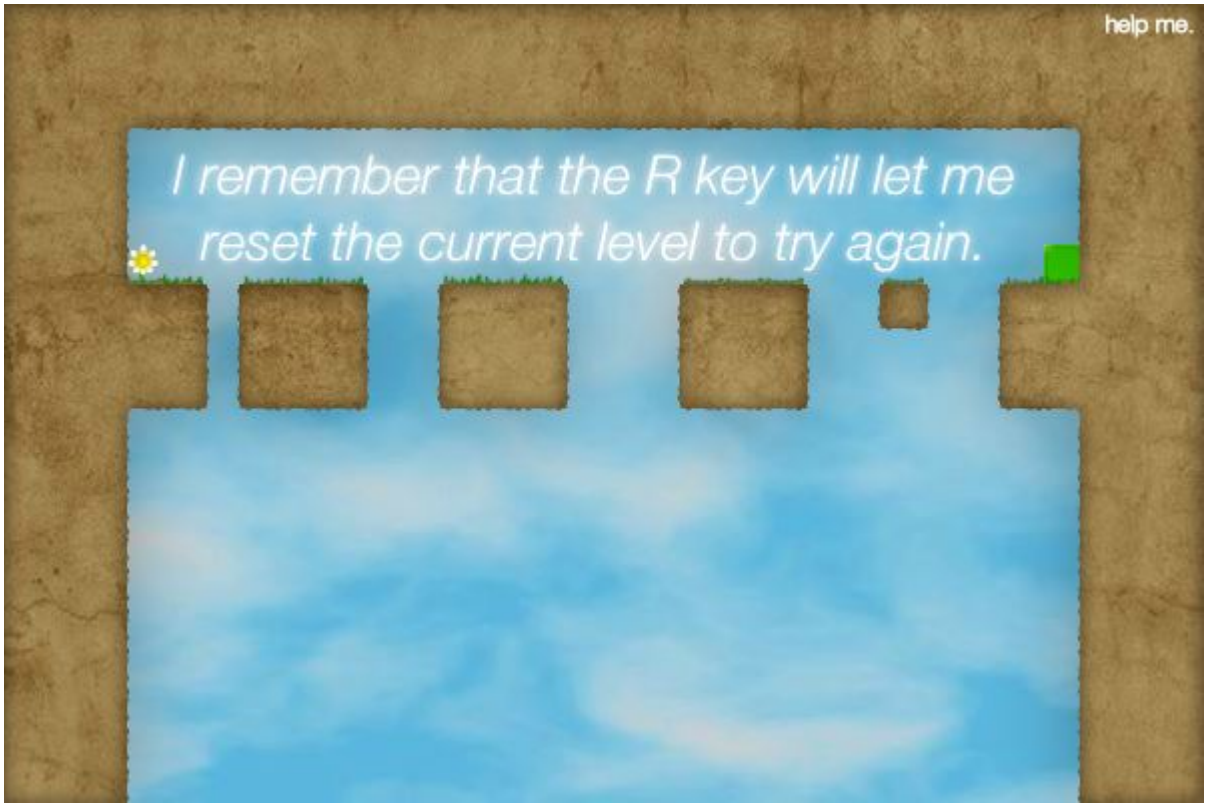
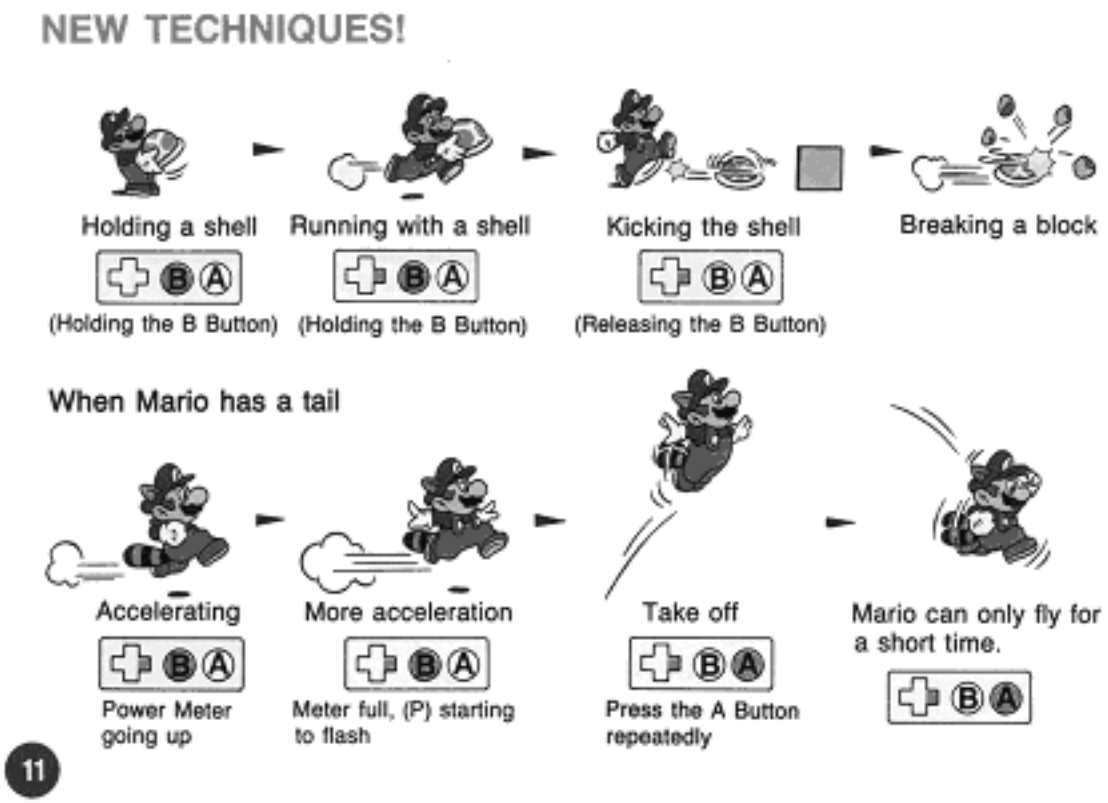


10. Provide help and documentation



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Group Work

- Pick one of your game ideas
- Pick two mechanics in your game
- Brainstorm a plan for how the user will learn these mechanics
- Design a level with a UI (and tutorials?) that will support this learning
- Show to another team