

ChatGPT and End-user Programming



Introduction


GPT-4 DEMO GPT-4 use cases

[GPT-3 Demo](#) [YouTube channel](#) [What's GPT-4?](#) [Get listed](#)

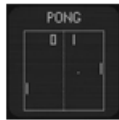
Collections

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Categories


[...](#)



Games
GPT-4 Doom



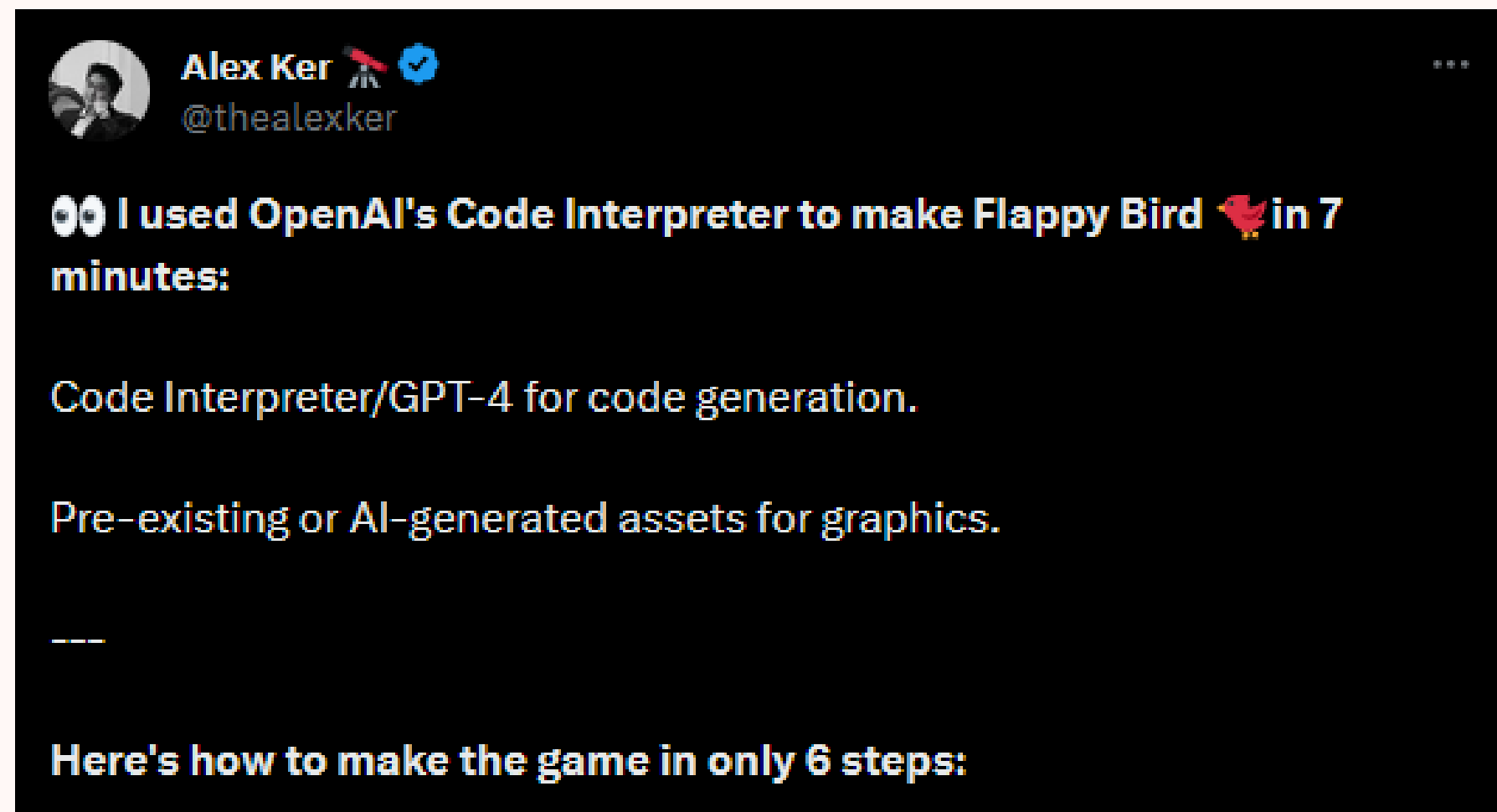
Games
GPT-4 Pong



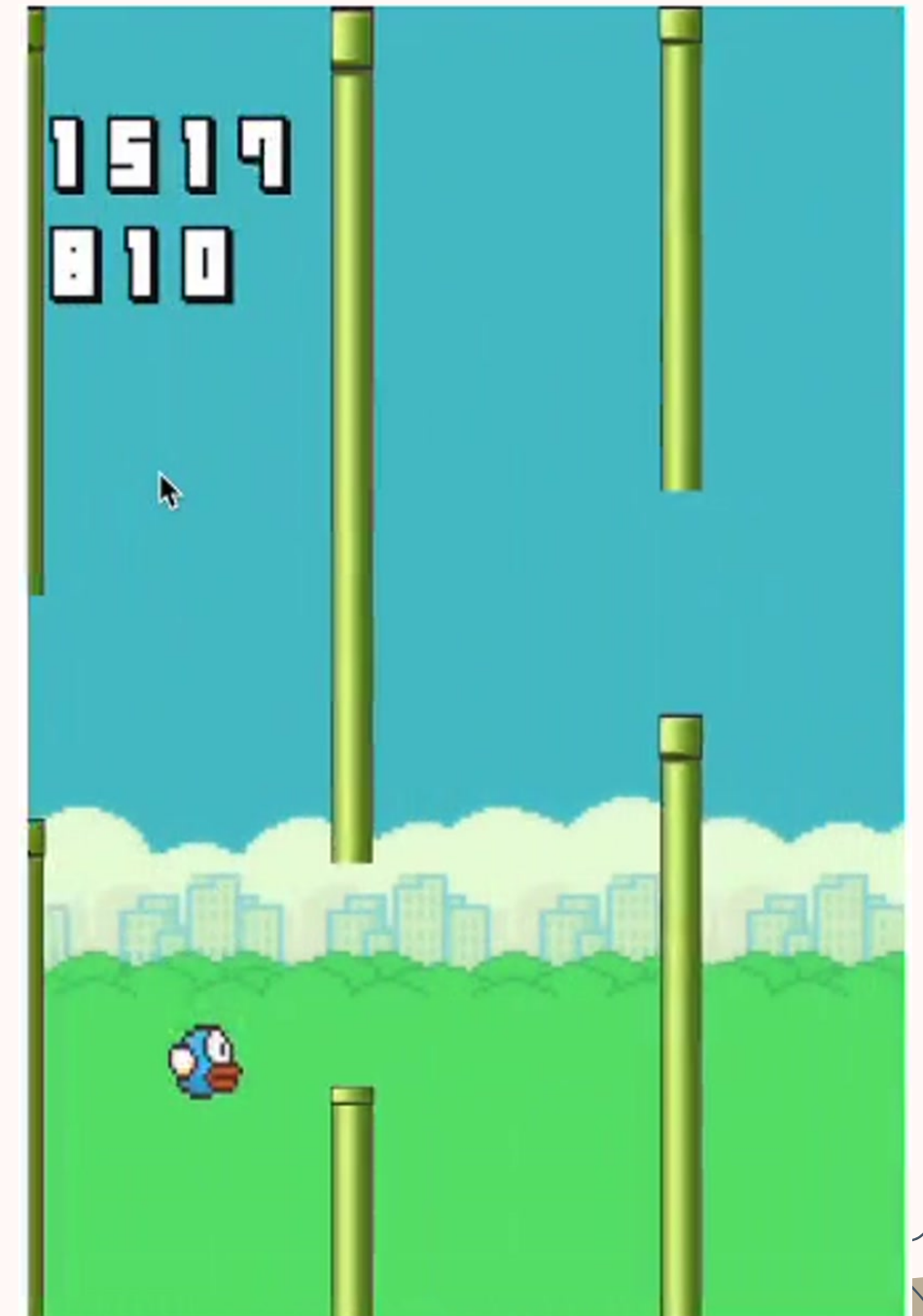
Games
GPT-4 Snake Game

<https://gpt4demo.com/category/games>

Introduction



<https://twitter.com/thealexker/status/1678801892858556417?t=Mx6DtPIAeCtoHEX2TIF0mA&s=19>



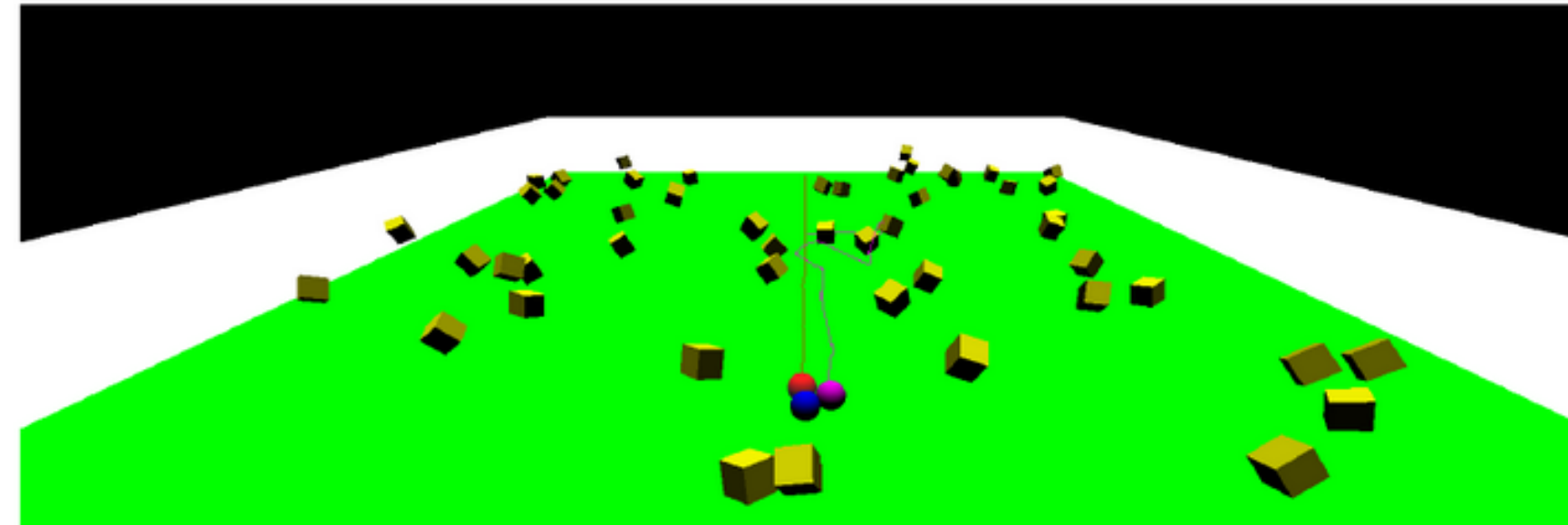
Introduction

GPT-4

Prompt:

Can you write a 3D game in HTML with Javascript, I want:

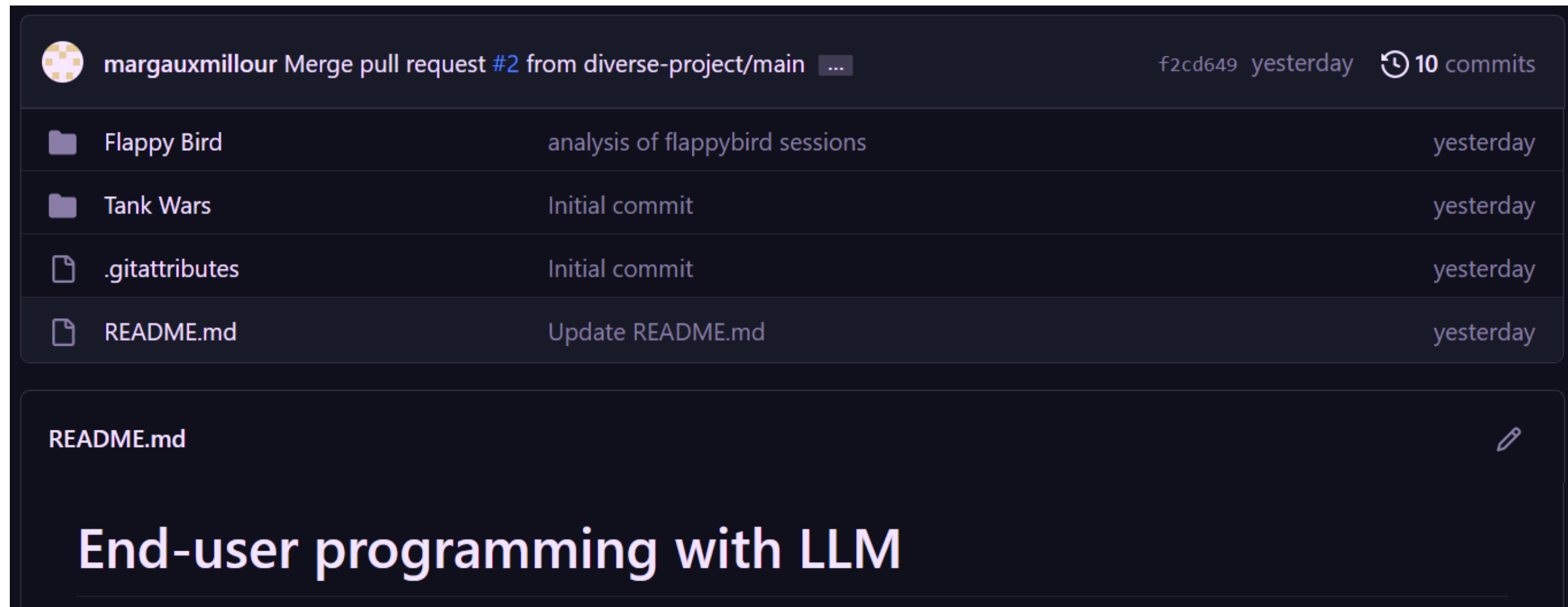
- There are three avatars, each is a sphere.
- The player controls its avatar using arrow keys to move.
- The enemy avatar is trying to catch the player.
- The defender avatar is trying to block the enemy.
- There are also random obstacles as cubes spawned randomly at the beginning and moving randomly. The avatars cannot cross those cubes.
- The player moves on a 2D plane surrounded by walls that he cannot cross. The wall should cover the boundary of the entire plane.
- Add physics to the environment using cannon.
- If the enemy catches the player, the game is over.
- Plot the trajectories of all the three avatars.



Episode 1: the player avatar (blue) stands still. The enemy (red) rushes straight towards the player, while the defender (magenta) attempts to 'body block' the enemy (see its curved trajectory in magenta).

https://www.researchgate.net/publication/369449949_Sparks_of_Artificial_General_Intelligence_Early_experiments_with_GPT-4

Structure of the repository



The screenshot displays a GitHub pull request interface. At the top, it shows a merge pull request #2 from diverse-project/main, submitted by margauxmillour yesterday, with 10 commits. Below this, a table lists the files and folders included in the pull request:

File/Folder	Commit Message	Time
Flappy Bird	analysis of flappybird sessions	yesterday
Tank Wars	Initial commit	yesterday
.gitattributes	Initial commit	yesterday
README.md	Update README.md	yesterday

Below the table, the content of the README.md file is shown. It features the title "End-user programming with LLM" in a large, bold font.

README.md

End-user programming with LLM

Structure of the repository

- › Flappy Bird
 - › GPT-3.5
 - › 1st method
 - › 1st session
 - › code
 - › prompt
 - › observations
 - › video
 - › ...
- › ...
- › GTP-4
 - › ...

- › Tank Wars
 - › GPT-3.5
 - › code
 - › prompt
 - › observations
 - › video
 - › GTP-4
 - › ...

5 methods

Giving ChatGPT an example of finished code doing what we want (in our case a complete Flappy Bird game written in Python), and asking it to return a prompt.

Providing a list of characteristics (this time written by a human).

A short prompt.

A short description of the main features.

A list of prompts (without having to look at the code in between the requests).

Observation and synthesis

The top corners of the slide feature decorative wavy lines in shades of brown and tan, framing the title.

prompt



playable game



Observation and synthesis

prompt



playable game



Observation and synthesis

prompt 1



playable game

prompt 2



slightly different game

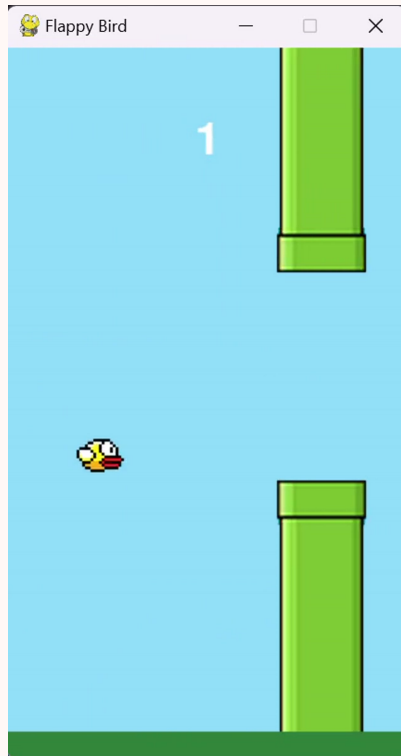
prompt 3



slightly different game

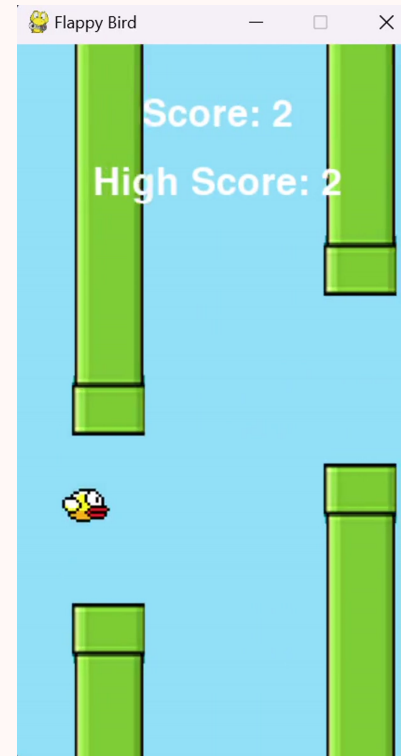
Observation and synthesis

prompt 1



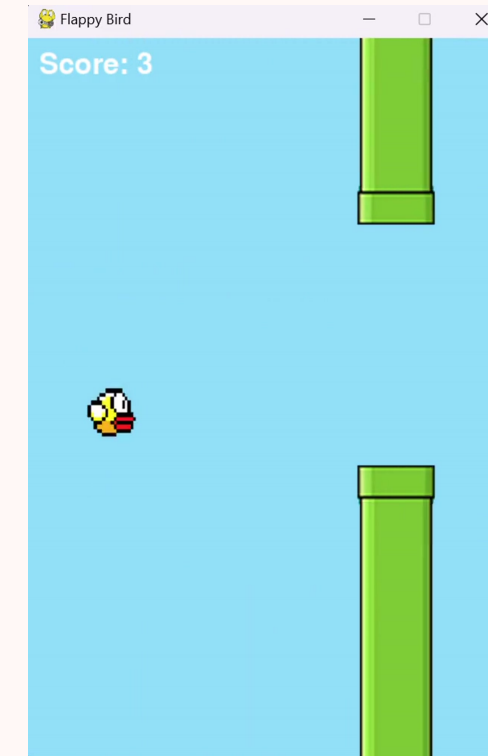
playable game

prompt 2



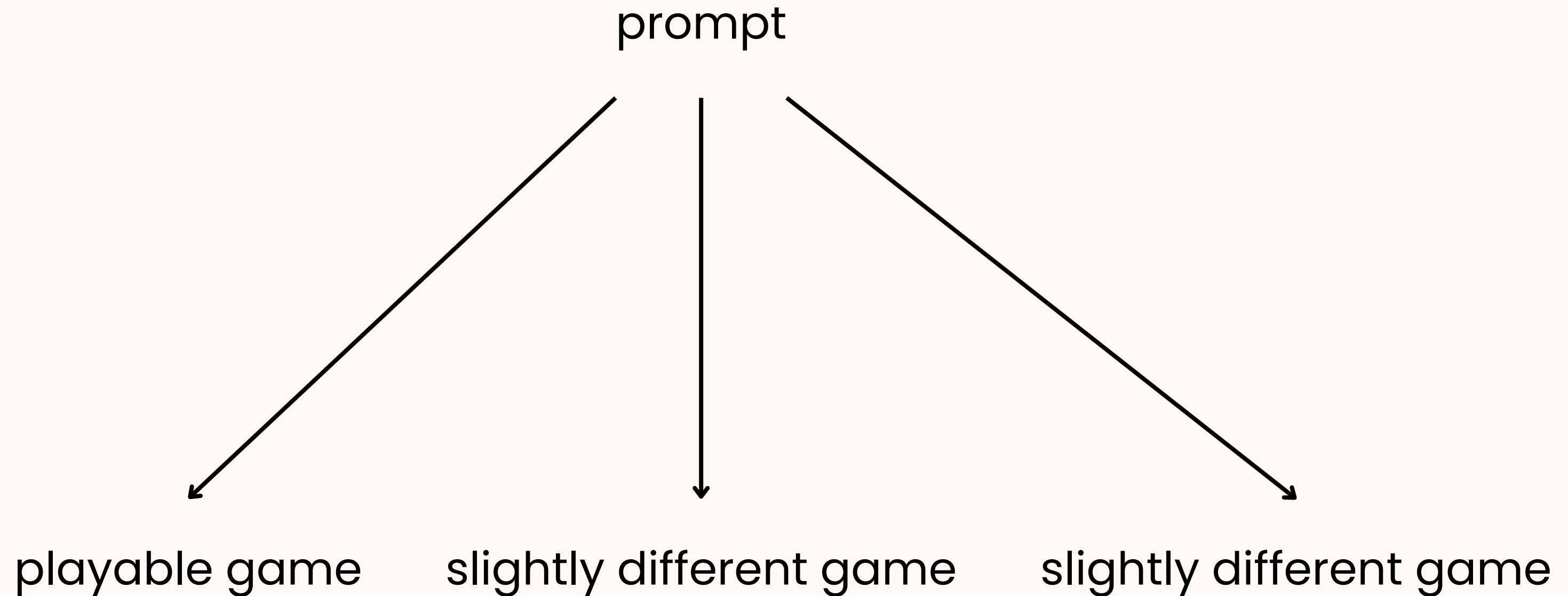
slightly different game

prompt 3

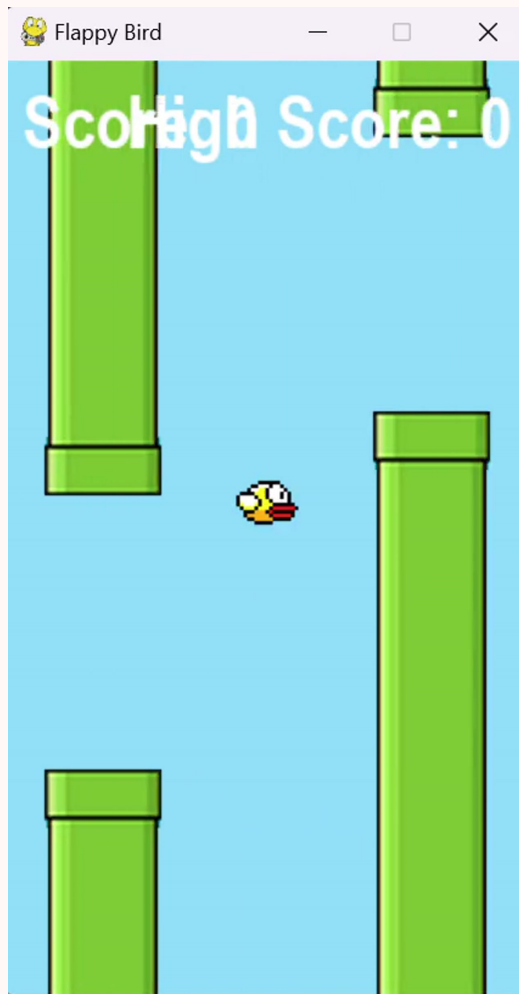


slightly different game

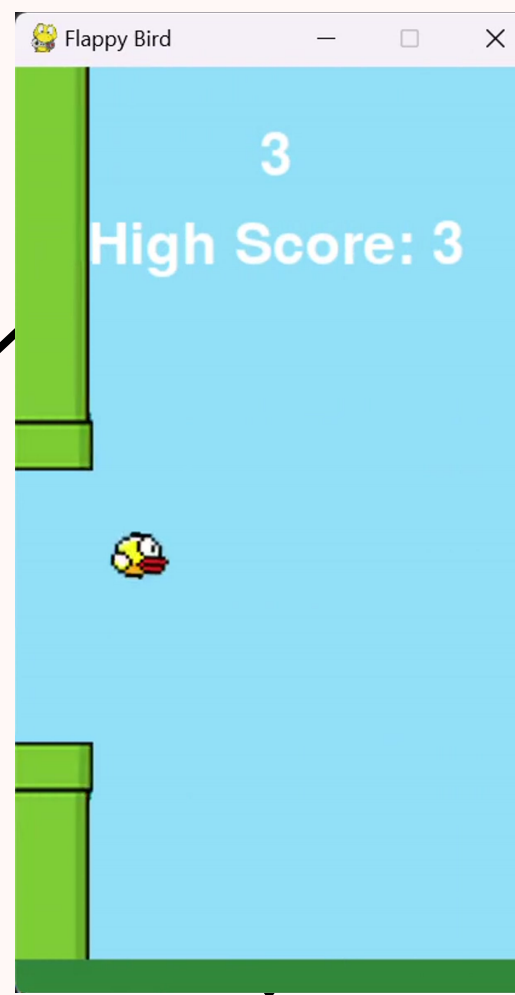
Observation and synthesis



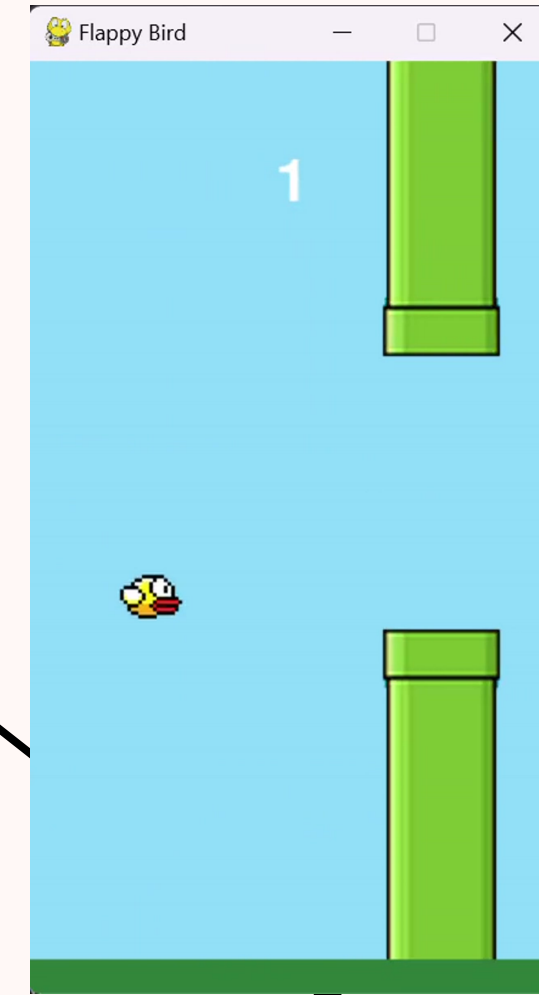
Observation and synthesis



playable game



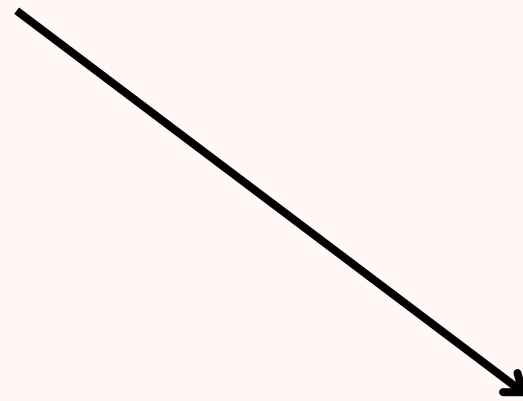
slightly different game



slightly different game

Observation and synthesis

prompt

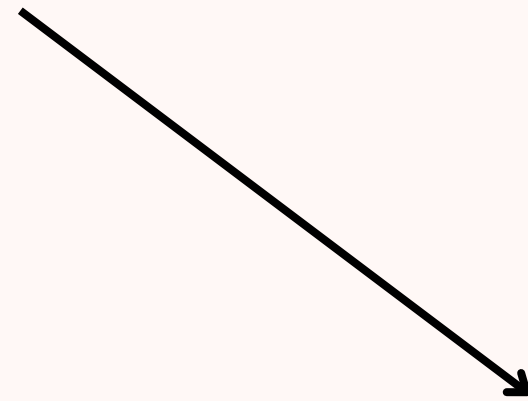


dead "end state"

playable game

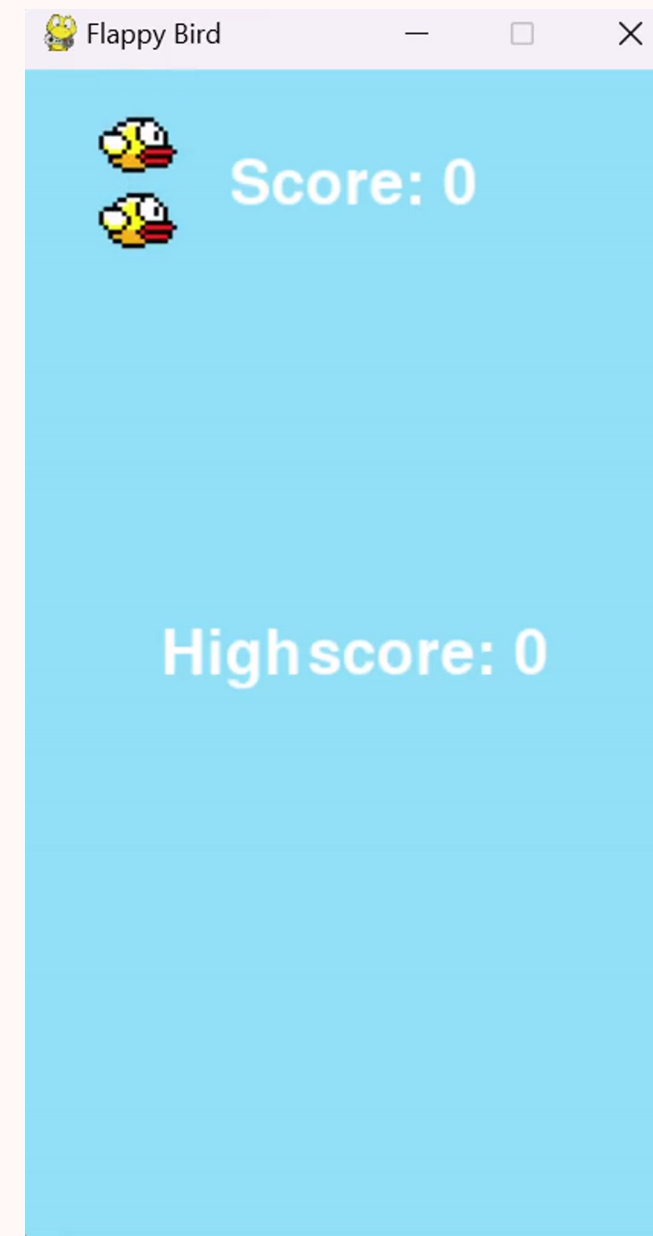
Observation and synthesis

prompt



dead "end state"

playable game



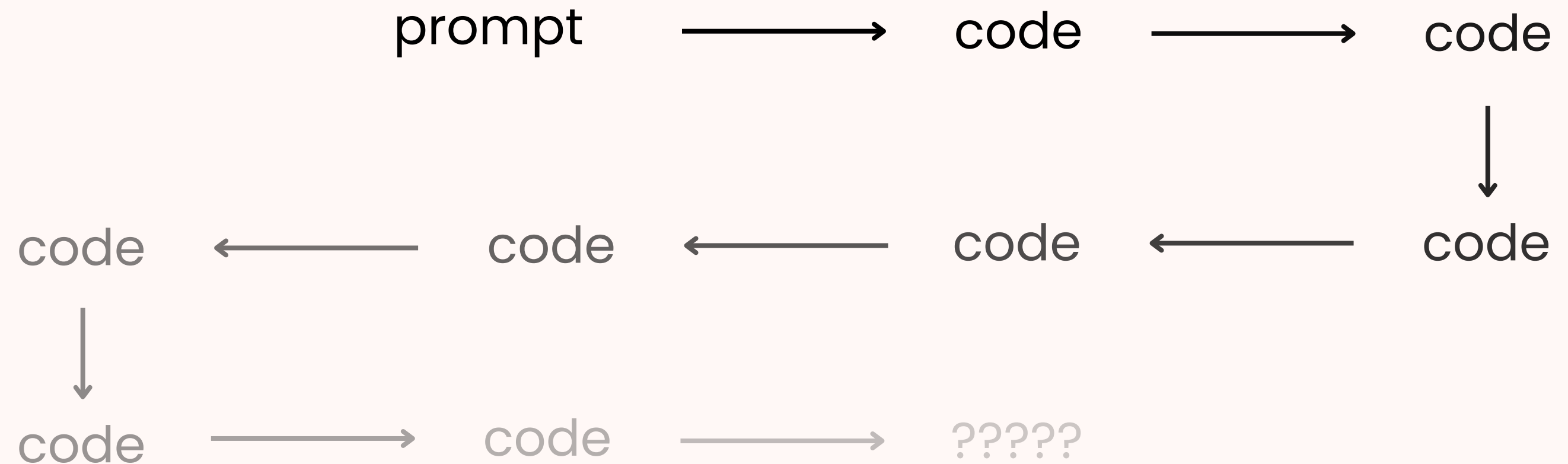
ChatGPT



randomly
giving me
something full
of errors

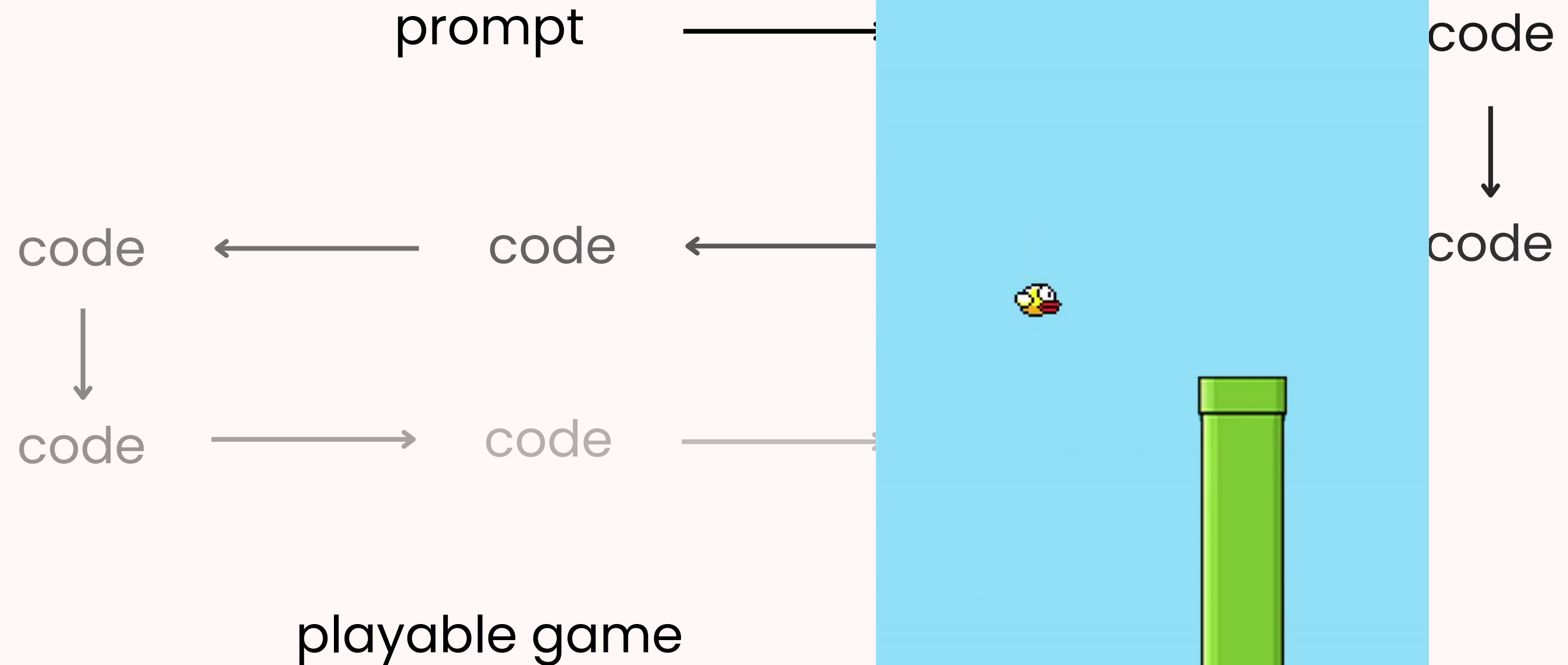
always giving
me the same
compilable
code

Observation and synthesis



playable game

Observation and synthesis



Observation and synthesis

The top corners of the slide feature decorative wavy lines in shades of brown and tan, framing the title.

prompt



playable game + new features

The bottom corners of the slide are decorated with stylized leaf patterns and wavy lines in various shades of brown, tan, and beige.

Observation and synthesis

prompt



playable game + new features



we can't see it on a PDF, but the pipes are moving up and down

Observation and synthesis

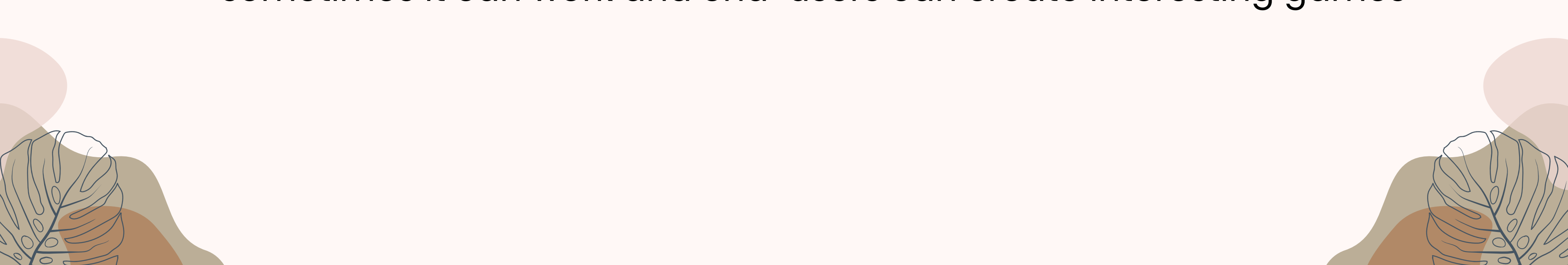
examples of issues that needed to be fixed:

- clock (controls the number of frames per second)
- gap placement between the pipes
- collision detection
- breaking of older functionality
- missing a bit of diversity

Observation and synthesis



positive aspects of using ChatGPT:

- inspiration, funny variants
 - discovering new features
 - good starting point for developers
 - sometimes it can work and end-users can create interesting games
- 

Conclusion and perspectives

directions to consider

- change the targeted programming language and/or the framework
- find a super prompt or a language (who says a domain-specific language?) that leads to more determinism and control of ChatGPT
- improve the usability and the integration of ChatGPT outputs into development environment.