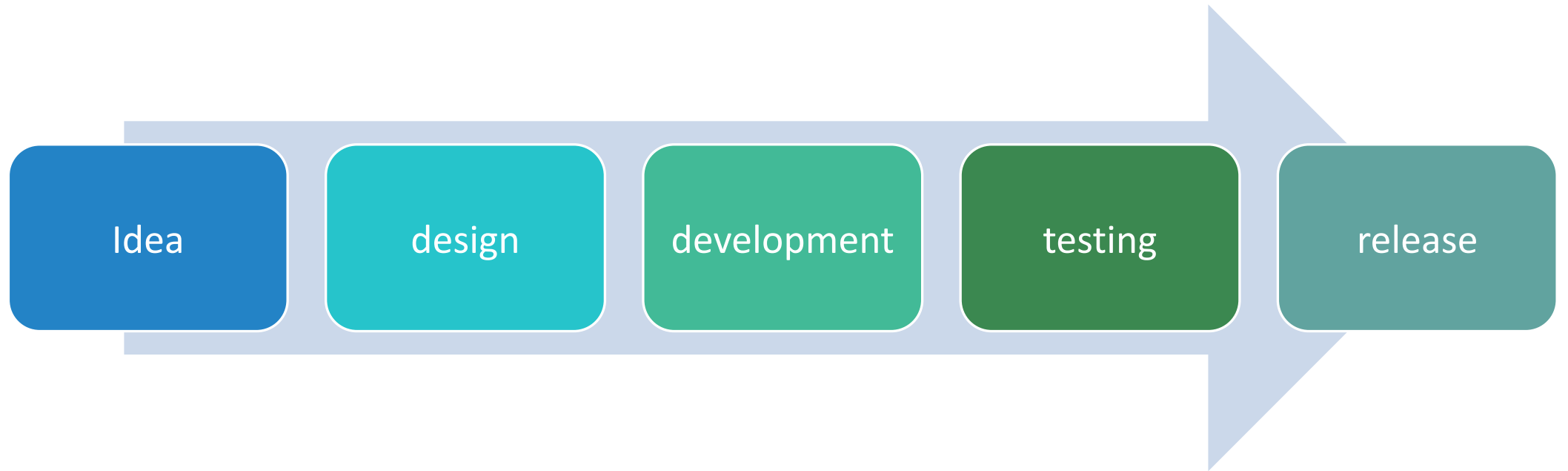# Game Design

MECHANICS, DYNAMICS, AESTHETICS, AND GAME DESIGN DOCUMENTS (GDD).
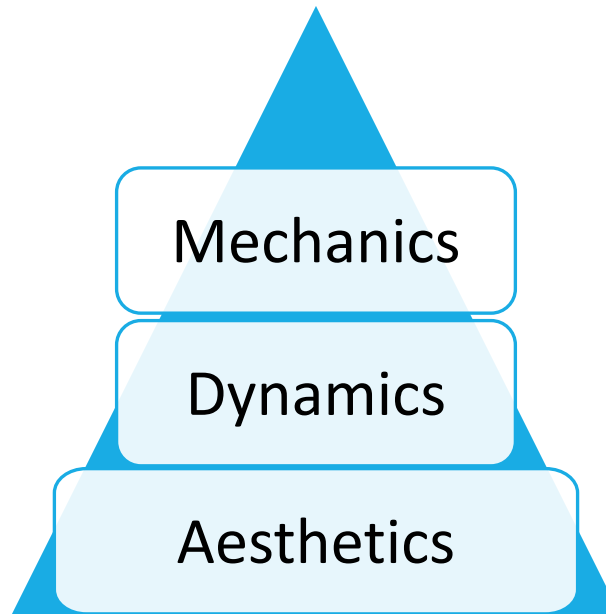
What is Game Design?
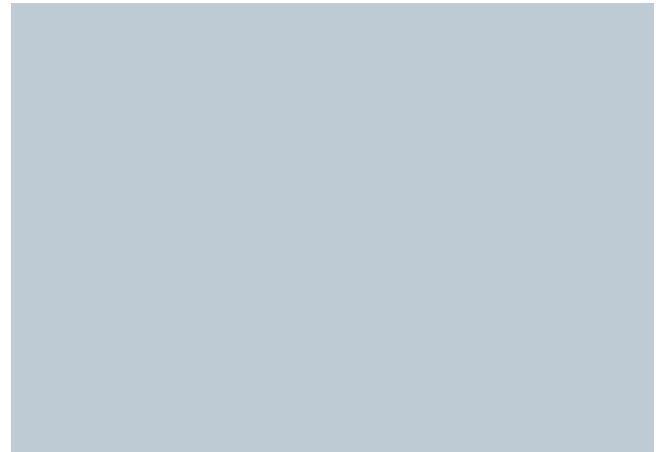
Game design is the art of creating rules, mechanics, and experiences for players.

| Idea | design | development | testing | release |

The Three Pillars of Game Design

The MDA Framework

Mechanics

Dynamics

Aesthetics
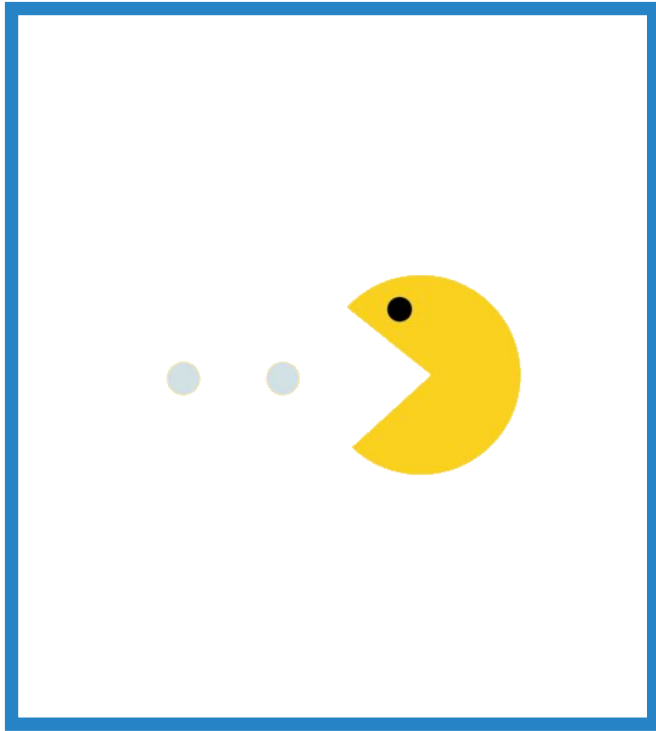
What Are Game Mechanics?

Definition:

Rules and systems that define how the game works.
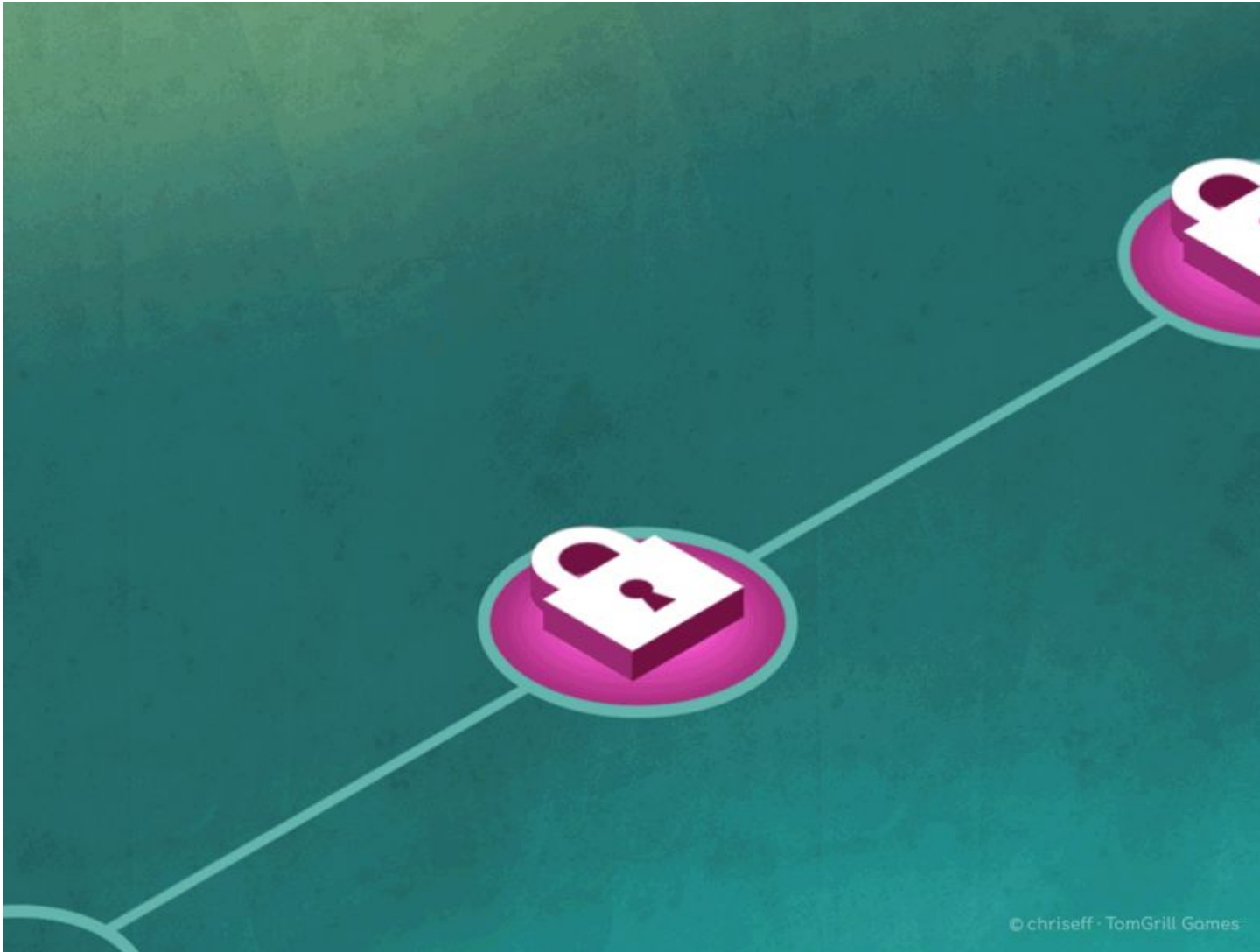
Examples: Jumping, shooting, scoring, health systems.

Types of Game Mechanics

Core Mechanics:

❑ Essential actions

❑(e.g., jumping in Mario).

Types of Game Mechanics

Progression Mechanics:

❑ Unlocking levels or abilities.

Types of Game Mechanics
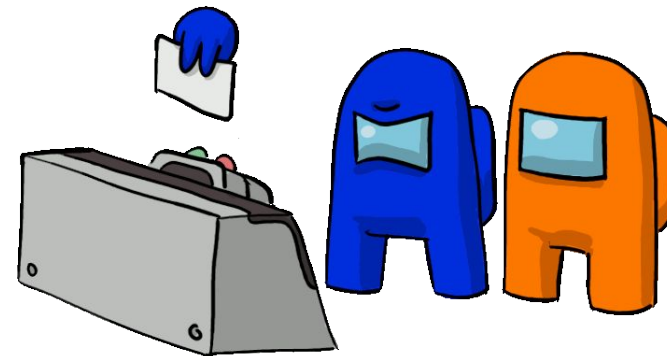
Feedback Mechanics: Rewards or penalties

(e.g., points, power-ups).

What Are Game Dynamics?

Definition: How mechanics interact and create player experiences.

Examples: Emergent gameplay, player strategies, and challenges.

Mechanics vs. Dynamics

Mechanics: Rules (e.g., "You can jump").

Dynamics: How players use those rules (e.g., "Players chain jumps to reach high platforms").

What Are Game Aesthetics?

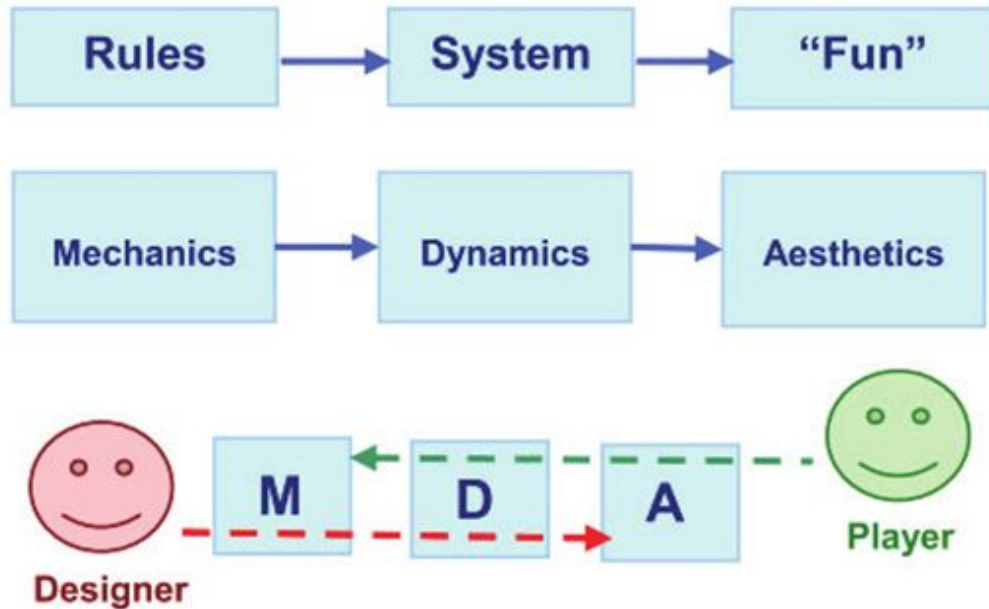**Definition:** The emotional responses and experiences players feel.

Examples: Fun, excitement, tension, curiosity.

The 8 Types of Fun (Aesthetics)

MDA Framework in Action

How mechanics, dynamics, and aesthetics work together in a game like Mario.

Why is Game Design Important?

"A delayed game is eventually good, but a rushed game is forever bad"

Shigeru Miyamoto

(Creator of Mario, Zelda)

GAME DESIGN DOCUMENT

CORE CONCEPT

The core concept of your game is a simple statement that describes what the player will get to do and what playing the game will be like.

MAIN FEATURES

Whatever is important to your game goes here. Story, graphics, an unconventional style of play. This is where you give your concept more detail and could include:

- Story
- Visual style
- Interesting mechanics
- Unique selling points
- Design pillars

TARGET PLATFORM / AUDIENCE

- This section describes who the game is for.
- Bullets can often be clearer than paragraphs,
- Full sentences sometimes use too many words.

TIMELINE / DEVELOPMENT MILESTONES

When will the game be finished? What are the project's milestones? And who will be working on it?

- Target release date
- Development milestones
- Phases of work and the people involved

gamedevbeginner

What is a Game Design Document (GDD)?

 A blueprint for the game that outlines its design, mechanics, and features.

Purpose of a GDD

Communicates vision   guides development   and ensures consistency.

Key Sections of a GDD
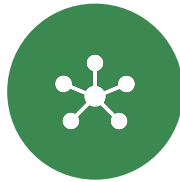
Game Overview Se[ction]

GENRE

TARGET AUDIENCE

PLATFORM

AND CORE CONCEPT.

2. Section I – Game Overview

2.1. Game Concept

There is a queue of birds of different colours, with different skills, to the slingshot. By pulling the slingshot a player charges it and shoots the bird into a primitive structure of blocks from several materials to kill green pigs, who stole their eggs, and collect scores for completing levels.

2.2. Feature Set

- Slingshot with aiming route.
- Multiple birds with unique skills and material penetration.
- Different blocks of some material with specific durability that collide with birds and each other, and break.
- Simple static enemies – pigs, that should be killed to end a level.
- Score system with different values for birds, blocks, and pigs
- Special skills system (pay to use?)
- Collectible chests

2.3. Genre

Puzzle, casual, strategy shooter.

2.4. Game Flow Summary

Starting the game an introduction with company logo appears, after which there is a main menu with play, settings list box, and a list box with several 'share me' buttons in social media. After clicking the play button, a next multi-paged menu with a table of levels will appear either blocked or able to play. At the beginning of some levels there is a 'static' cut scene that explains a little bit of plot. Under each level the quantity of stars collected is specified. Player can click any level he has unlocked and play though it. At any time, he can restart the level, pause it or go back to main menu. The level progress is saved only when it is completed. Settings list box is also available during the level. At any time player can exit or stop the game by default phone's buttons. When game is fully stopped the flow starts from the very beginning.

2.5. Look and Feel

The game looks childish and at the same time extraordinary lovely. Such simple drawing only make the sensations of the game feel stronger. The sounds and music in combination with good-

Mechanics Section

3.2. Mechanics

3.2.1. Physics

To all objects that are situated on the level simple physical simulation is applied with the gravity tending to the bottom of the scene. Whenever objects are collided the one that moved with force shares the momentum between other objects and pushes them away. In some levels and a black bird can explode, causing all objects in range to destroy or fly away in direction opposite to the centre of explosion.

3.2.2. Movement

3.2.2.1. General Movement

The only movement is available is the one starting simulation of trajectory of a projectile (bird) from a slingshot. Player sets the force and direction of the flight by dragging bird in the slingshot back/forward or up/down respectively.

3.2.2.2. Other Movement

At some levels there are moving platforms or enemies from one point to another, but it all applies to the general simulation model.

3.2.3. Objects

3.2.3.1. Picking Up Objects

As soon as bird collides with an object that can be picked up or interact with, the interaction happens.

3.2.4 Actions

3.2.4.1. Activating Skills

When the bird is shot and before it hits any object on the level, player can tap anywhere on the screen to activate the birds unique skill.

What to Include:

Core gameplay, controls, progression, and feedback systems.

Story and Narrative Section

Plot, characters, world-building, and dialogue.

4. Section III – Story, Setting and Character

4.1. Story and Narrative

4.1.1. Plot

4.1.1.1. Prologue

The plot of the game takes place on Piggy Island. The Flock happily lives together taking care of their Eggs.

4.1.1.2. Poached Eggs

Suddenly, King Pig and his minions steal the eggs. They attempt to cook and eat eggs. The birds injure Corporal Pig, Foreman Pig, and finally King Pig.

4.1.1.3. Mighty Hoax

In the second part of the plot, King Pig once again stole the eggs, but rather than simply fleeing, he placed cardboard cutout eggs in the birds' nest. The birds weren't fooled by this trick, and once again released their vengeance on the pigs for stealing the eggs the second time. There was also a cardboard cutout King Pig used to distract the birds. however, King Pig was behind it. In the end, the birds didn't defeat him. Instead, they just destroyed the cardboard cutouts.

4.1.1.4. Danger Above

The birds finally found out about the trick and the real King escaped to the jungle, a city, and the clouds. It turned out they flew out with balloons, stealing the eggs. The birds freed Hal, along their journey, befriended him, then he joined their flock. They get the eggs back.

4.1.1.5. The Big Setup

After the birds went back to the ground, King Pig and his minions kidnapped (or birdnapped) the entire flock to prevent the birds from defeating them and stole the eggs. Terence noticed this and decided to exact revenge on the pigs for kidnapping the other birds. In the meantime, the pigs attempted to reconstruct their forts. Quite anxious, Terence went to destroy the fortresses. He then sees Hal kidnapped again and

Art and Visual Style Section

Art direction, color palette, and visual themes.
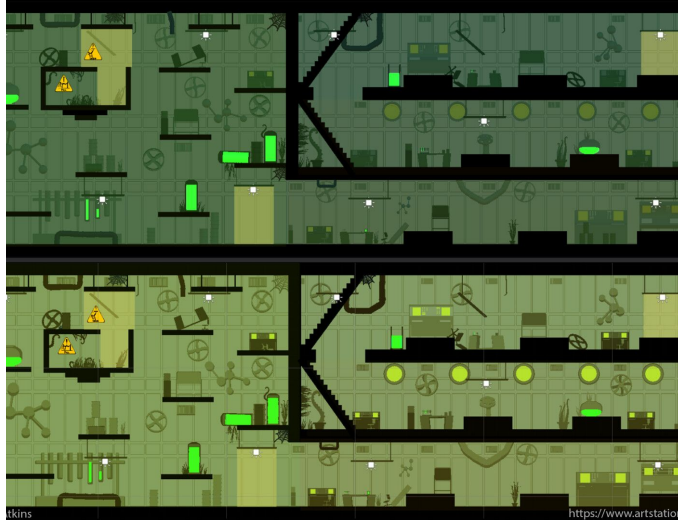
Levels and Environments Section

Level design, maps, and environmental storytelling.

5. Section IV – Levels

5.1. Episodes

There are a total of over 700 levels in Angry Birds, including Golden Eggs. These levels are grouped into episodes. In different episodes, the pigs try to find new ways to escape with the eggs.

5.1.1. Tutorial:

A warm-up episode where the player is introduced to the birds and the power-ups, which are unlimited for use. It contains 15 levels.

5.2.1. Level 1

- The level consists of a simple wooden structure with 1 enemy in the middle.
- Player has 3 red birds to shoot.
- Level begins with a cut scene that shows that pigs have stolen the eggs.
- 1 shoot is needed to complete the level.
- The goal is to show the player that he should destroy blocks to kill pigs to win.

5.2.2. Level 2

- The level consists of a 4 stone piles with wooden platforms and enemies on each.
- Player has 5 red birds to complete the level.
- 1 shot are needed to complete the level.
- The goal is to show player that there are some other ways to complete the level.

5.2.3. Level 3

- Level consists of a static 'hill' that has an undestroyable ball on it. Beneath the hill there are 2 pigs and a simple structure behind them.
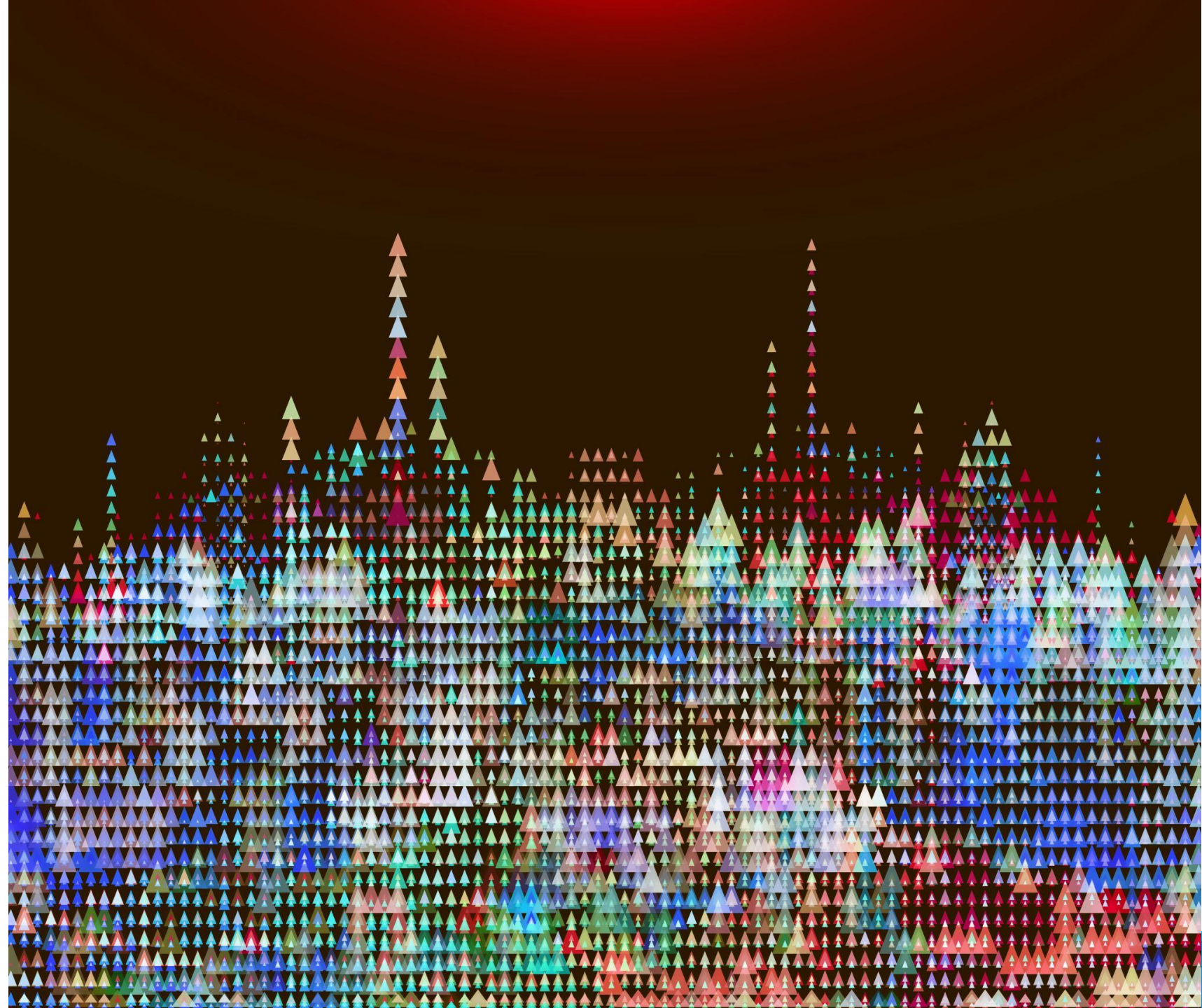- Player has 4 red birds to complete the level.

UI and UX Section

Menus, HUD, controls, and accessibility features.
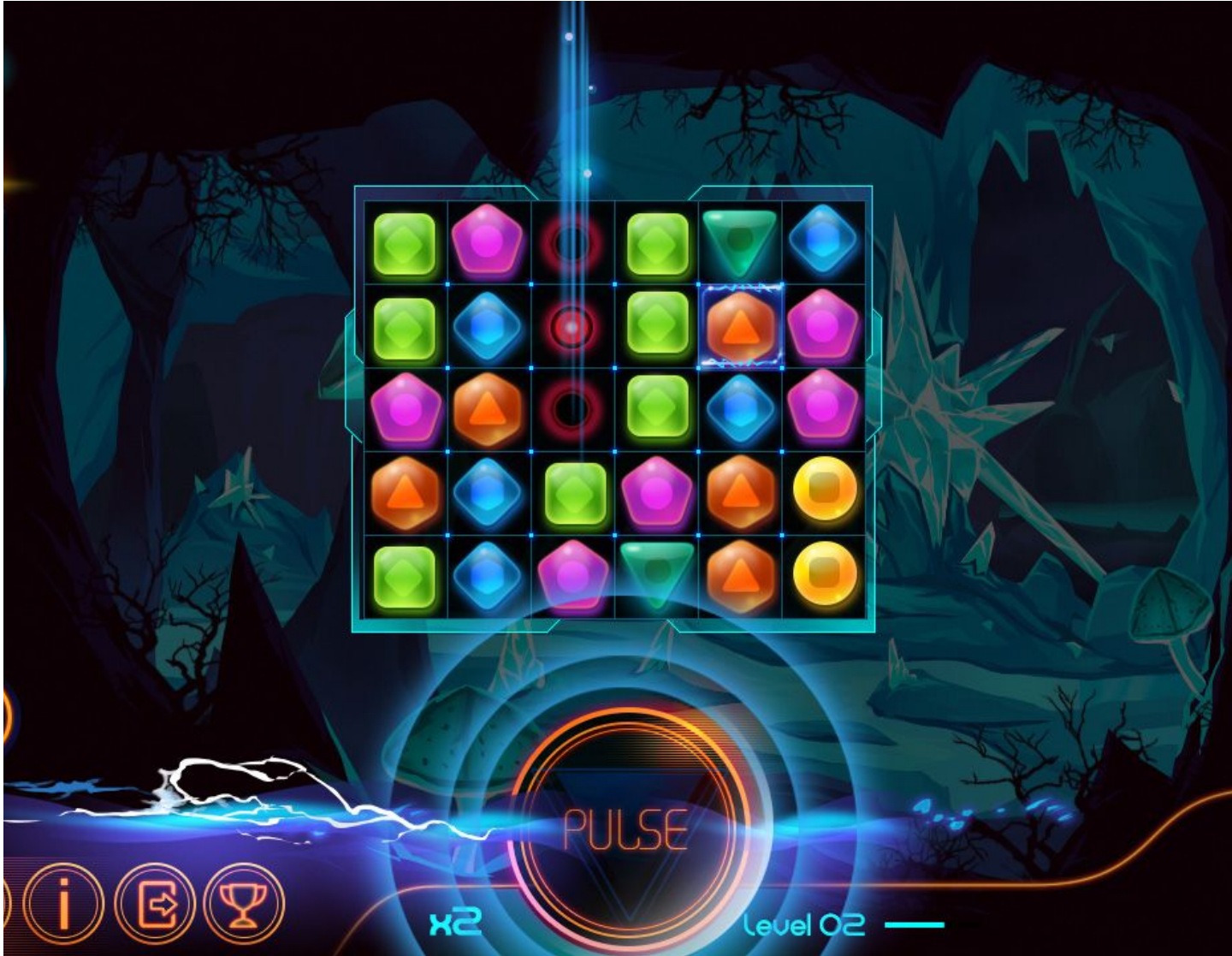
Audio and Music Section

Sound effects, background music, and voice acting.

Writing a GDD: Tips and Best Practices

Be concise, use visuals, and update regularly.

Case Study: GDD of a Popular Game

Example: Analyze the GDD of a well-known game (e.g., Minecraft or Angry Birds).

Assignment 1: Design Your Own Game

Task: Students brainstorm a game idea and outline its mechanics, dynamics, and aesthetics.

Game Design Document Template.pdf

The mechanics, dynamics and Aesthetics of PUBG game

https://medium.com/game-design-fundamentals/mechanics-dynamics-aesthetics-pubg-86b808ea88e7