

## Unity Web Game Developer Test Task

### Goal

The purpose of this test task is to evaluate two key competencies:

#### 1. API Integration

- Demonstrate the ability to fetch structured game data from a remote JSON API.
- Apply it to control in-game logic and visual layout.

#### 2. Animation Handling

- Showcase proficiency in animating both gameplay elements (e.g., keys, chest, grid interactions) and UI components (e.g., screen transitions, progress bars, buttons).

### Gameplay Overview

In this prototype, the player opens a grid of cells to find hidden keys, which are needed to unlock a treasure chest. The main objective is to collect all keys, which are aligned into designated key slots at the top of the screen. Once all keys are collected, a chest unlock animation plays.

### Core Gameplay Loop

#### Cell Interaction

- Player taps on closed cells to open them.
- If a cell contains a key, it animates toward a matching slot at the top of the screen.
- Keys must rotate and fit exactly into their designated slots.

#### Key Slots Display

- A UI panel at the top contains target key slots with defined positions and rotations.
- Collected keys animate into place and align with their assigned rotation.

#### Chest Unlock Sequence

When all keys are collected:

1. Disable player input.
2. Chest scales up and moves to the center.
3. A dark transparent background fades in.
4. Play open animation.
5. Display a “Claim” button below the chest.

#### Claim Button

- Functionality not required — can be a placeholder.

#### Chest Progress Bar

- UI shows total number of chests in the session.
- Current chest is highlighted with a flag.

## Tier System and Grid Configuration

The game uses a JSON seed to deterministically generate grid layouts. Grid size and number of keys depend on the tier:

Tier	Grid Size	Number of Keys
1	4x4	2
2	5x5	3
3	6x6	4
4	7x7	5
5	8x8	6

## JSON Example

```
{
  "seed": 3213,
  "tier": 1,
  "progress": 0,
  "openedCells": [
    { "x": 0, "y": 0 },
    { "x": 1, "y": 0 },
    { "x": 2, "y": 0 }
  ]
}
```

- `seed`: Determines key placement.
- `tier`: Level of difficulty/grid size.
- `progress`: Current chest index (0–5).
- `openedCells`: Cells opened in a previous session (auto-open them on load).

## API Endpoints

- <https://gamepack.github.io/UnityWebTestEndpoints/test1.json>
- <https://gamepack.github.io/UnityWebTestEndpoints/test2.json>
- <https://gamepack.github.io/UnityWebTestEndpoints/test3.json>
- <https://gamepack.github.io/UnityWebTestEndpoints/test4.json>
- <https://gamepack.github.io/UnityWebTestEndpoints/test5.json>

## UI Screens Implementation

### 1. Loading Screen

- Static background.
- Simple progress bar.
- Fade transition to Setting Screen.

### 2. Setting Screen

- Two buttons:
  - Play With Sound
  - Play Without Sound
- Enable/disable audio based on selection.
- Fade transition to Gameplay Screen.

### 3. Gameplay Screen

- Grid-based cell layout.
- Key slots UI at the top.
- Chest and progress bar with current progress indicator.
- Final unlock animation with Claim button.















