

Tiny Gardens: Game Design Document

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Overview of Product

Summary of Concept

Use physical cards to create an augmented reality (AR) landscape with the ability to customise the layout and sound. Create your own oasis, and find tranquillity in your space.

List of Key Features

- Customisable
- Works as an interactive toy, but has ability to be set as background noise
- Able to run on many different Android devices
- Can be used anywhere (fully offline)

Description of genre

This is a casual game/ toy, with the ability to act as a white noise/ soundscape creation tool.

Number of players

It is intended to be a single player experience, however there is the flexibility for more than one person to place and arrange the cards.

Lead development platform

This project is being developed for Android 7.0 and up.

References

Journey
Flower
My Oasis
Terrarium Game

Competitor Research

AR Perpetual Garden App
Orbu

Target player profile

The core audience for this application are people interested in expression, customisation and asking “what if?” They want to explore options and see what is possible.

<https://quanticfoundry.com/2015/12/15/handy-reference/>

<https://www.interaction-design.org/literature/article/bartle-s-player-types-for-gamification>

Production Schedule

Week 1

Idea generation, mindmaps, research

Week 2

Begin prototype, create basic cards

Week 3

Begin discussion regarding audio

Week 4

Develop more defined documentation

Week 5

Prototype 1 complete, test on device, begin prototype 2

Week 6

Begin asset creation

Week 7

Testing, adding interactions

Week 8

Testing, adding interactions

Week 9

Testing, adding interactions

Week 10

Testing, adding interactions

Week 11

All assets to be complete and implemented

Week 12

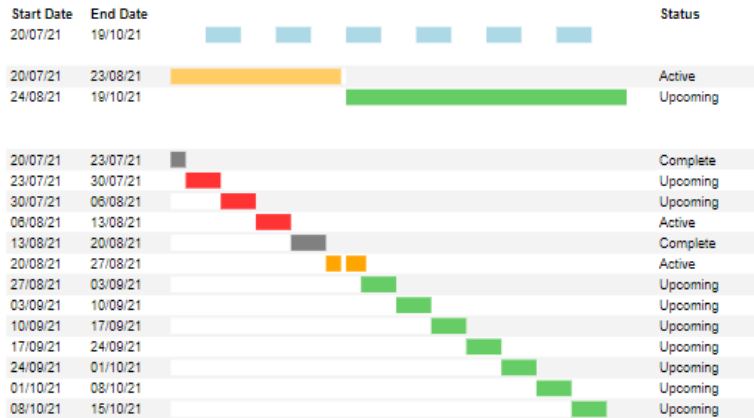
Final physical cards printed

Week 13

Polish, publishing and final documentation

Project Overview

Folio 1
Folio 2
Weekly Posts/ Uploads
Mindmap/ Pitch
Statement of Intention
-
-
Colour, documents and build



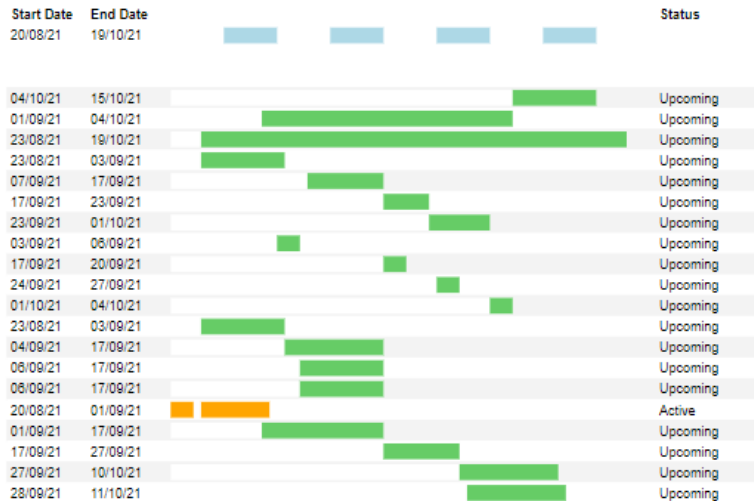
Folio 1

Deliverables
Pitch
Audio pitch doc
PDF including inquiry, rationale, context, methods and outcomes
Game Design Doc
Project Management Doc Merged with GDD
Technical Design Doc Merged with GDD
3D Asset List: Draft
2D Asset List: Draft
Audio Asset List: Draft
Prototype 1: AR Test & Basic card interactions



Folio 2

Deliverables
FINAL BUILD
FINAL CARDS (printed)
PDF including inquiry, rationale, context, methods and outcomes
Test Build: Base Assets
Test Build
Test Build
Test Build
User testing 1
User testing 2
User testing 3
User testing 4
3D Models: Trees
3D Models: Bushes
3D Models: Flowers
3D Model: Groundcover
Audio batch 1
Audio batch 2
Audio batch 3
Audio batch 4: Incl menu audio
UI Assets



Live link: https://docs.google.com/spreadsheets/d/1M5xYUc-Mclhtffm_BtkxypR1Y5wHk47eIOcRsM6N9Ic/edit#gid=814251887

Team Size and Makeup

The team currently consists of two people. One acting as designer, programmer and art, and the other is sound design.

Game Design

Design

Gameplay

Core Loop

Users will select a card from the deck and place it on a level surface. By using the app and scanning the card with the camera on their mobile device, it will create a 3D object on the screen and produce a sound.

Each individual card will have a standard effect that when placed in isolation will trigger. This consists of a 3D model relevant to the image on the card and a corresponding sound.

When cards are placed near each other in a tile pattern, this will trigger various other effects. An example of this would be two Tree cards joining and this triggering birdsong.

Controls

Interaction is managed through manipulating the physical card objects, and pointing the camera at them.

Settings and the onboarding will be done through an on screen user interface (UI).

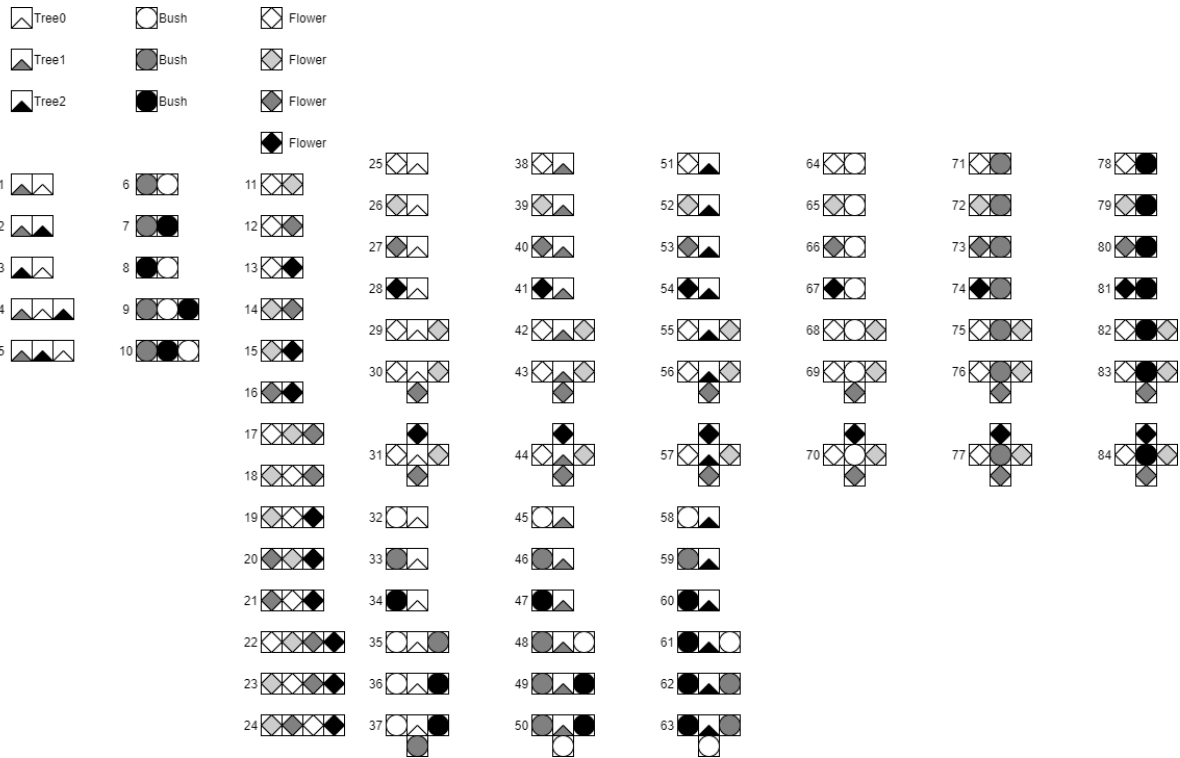
Onboarding

When the app is launched it will;

1. ask you to give it access to your camera
2. launch a screen explaining how to scan the cards
3. provide information about where to access them online

Systems

Finding new ways to mix the cards is a core part of the experience.



1	This is reaction one	26		51		76	
2		27		52		77	
3		28		53		78	
4		29		54		79	
5		30		55		80	
6		31		56		81	
7		32		57		82	
8		33		58		83	
9		34		59		84	
10		35		60		85	
11		36		61		86	
12		37		62		87	
13		38		63		88	
14		39		64		89	
15		40		65		90	
16		41		66		91	
17		42		67		92	
18		43		68		93	
19		44		69		94	

20		45		70		95	
21		46		71		96	
22		47		72		97	
23		48		73		98	
24		49		74			
25		50		75			

Art

Art Direction

It is low poly, bright and has clear, uncluttered UI.

References

Mood Board

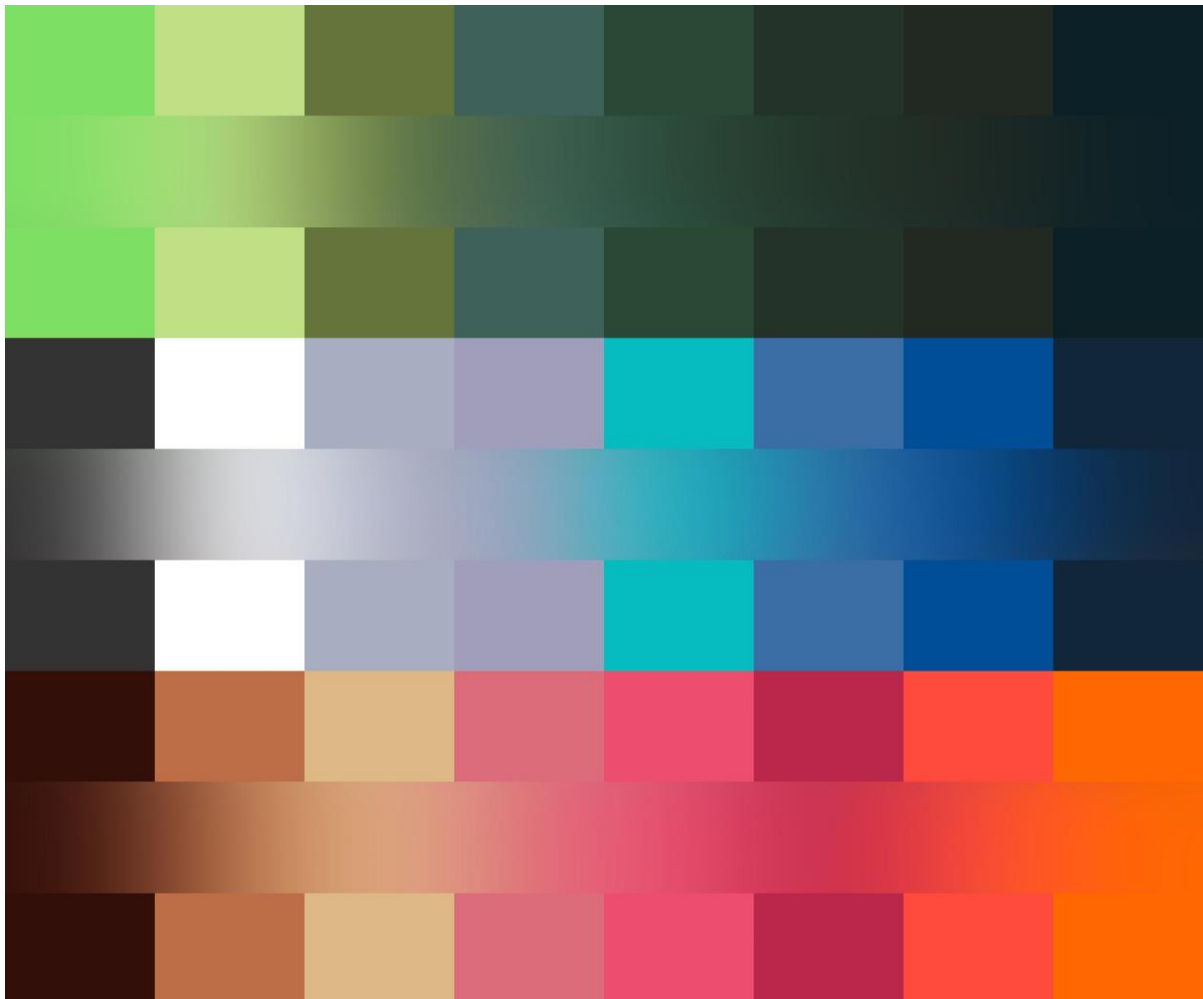




Figure 1 Low poly plants



Figure 2 Terrarium



Figure 3 Kikis Garden



Figure 4 Flower night



Figure 5 Animal Crossing New Horizons Hybrid Flowers

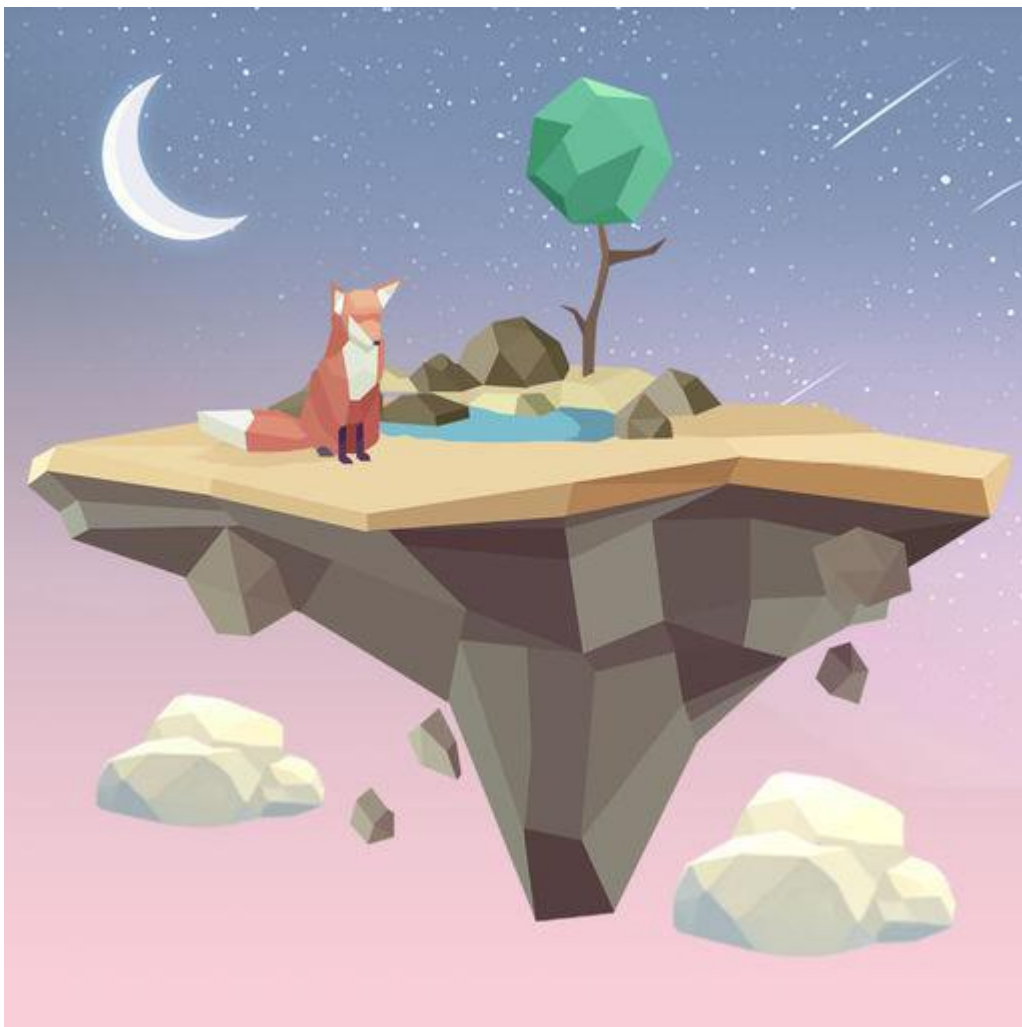


Figure 6 My Oasis iPad front cover



Figure 7 Cloud Gardens



Figure 8 Kinder World key art

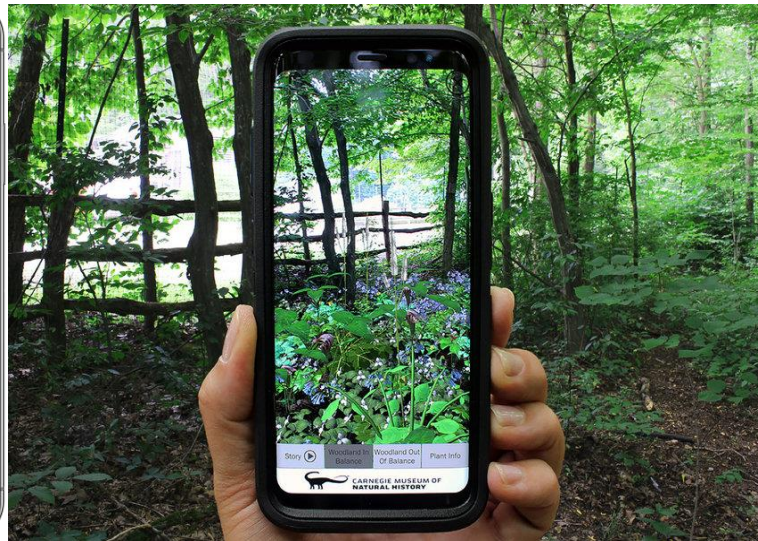


Figure 9 AR Perpetual Garden App



Figure 10 Orbu

Camera

The camera angle will be lined up with the camera on your device.

UI

The UI will be flat design and minimal.

Tech

Development Environment

Unity 2019.4.6f1

Plugins

Vuforia 10
Toony Colours Pro 2

System Requirements

Android 7.0

Optimisation

Models will be low poly and care will be taken to not place too many game objects in the scene.

QA

Testing will be done via volunteers who will be given a testing kit.

This will include:

- apk to download
- Instructions on how to put device into developer mode and installation
- Digital copies of the cards to use in the image editing program of their choice
- Instructions on how to use the app
- Link to anonymous feedback form (Google Forms)

Version Control

The project will be hosted on GitHub in the future, but is currently stored locally

Audio

Music

A simple looping piece of music will be used for the main screen.

Influences

Journey

Flower

My Oasis

SFX

Button clicks, and ambient sounds such as the breeze, trees leaves, bushes and insects. The sound designer is also working to make versions of these that are more abstract than literal.

Accessibility

Text will be appropriately sized (16px for mobile), and there will be no large paragraphs.

Colour blindness will be accounted for by making sure that there are no elements that blend together. This will be checked with tools such as the filter at Toptal

<https://www.toptal.com/designers/colorfilter/>.

If scope allows visual cues for sound through particle effects will be added.

Settings

If scope allows, users will be able to balance the audio further in a settings menu.

References

<https://www.dreamrealityinteractive.com/orbu>

https://www.researchgate.net/publication/332528247_Augmented_Reality_Bring_the_Real_World_into_Natural_History_Dioramas_with_Data_Visualizations_and_Bioacoustics_at_the_Carnegie_Museum_of_Natural_History/download

Images

Figure 1: <https://creativetrio.art/2021/04/27/stylized-low-poly-plants-pack-01/>

Figure 2: <https://globalgamejam.org/2019/games/terrarium>

Figure 3:

https://64.media.tumblr.com/3e4d5f509aadd92f3078971db23203fa/tumblr_pxdtv09zVP1xshu2fo6_r1_540.gifv

Figure 4: <https://www.gamespot.com/a/uploads/original/416/4161502/2374051-flower-night.jpg>

Figure 5: <https://icdn.digitaltrends.com/image/digitaltrends/animal-crossing-new-horizons-hybrid-flowers-1-1.jpg>

Figure 6: <https://www.mobygames.com/images/covers/l/436501-my-oasis-ipad-front-cover.jpg>

Figure 7: [Cloud-Gardens-678x381.jpg \(678×381\) \(re-actor.net\)](#)

Figure 8: [android-kinder-world-home.png \(543×1046\) \(lumiinteractive.com\)](#)

Figure 9: <https://www.researchgate.net/profile/Wenzel-John/publication/332528247/figure/fig2/AS:920154703687683@1596393385940/The-AR-Perpetual-Garden-App-Woodland-in-Balance-shown-outside-in-the-real-garden-for.jpg>

Figure 10: https://l3apq3bncl82o596k2d1ydn1-wpengine.netdna-ssl.com/wp-content/uploads/2018/01/01_OrbuGame_iPad_Explore_wondrous_Zen_gardens.jpg