

# SpellCraft

## Concept and Design

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**01**

# **Project Overview**

# About SpellCraft

- Augmenting Montessori Education
- Tangible User Interface
- Utilizing RFID technology



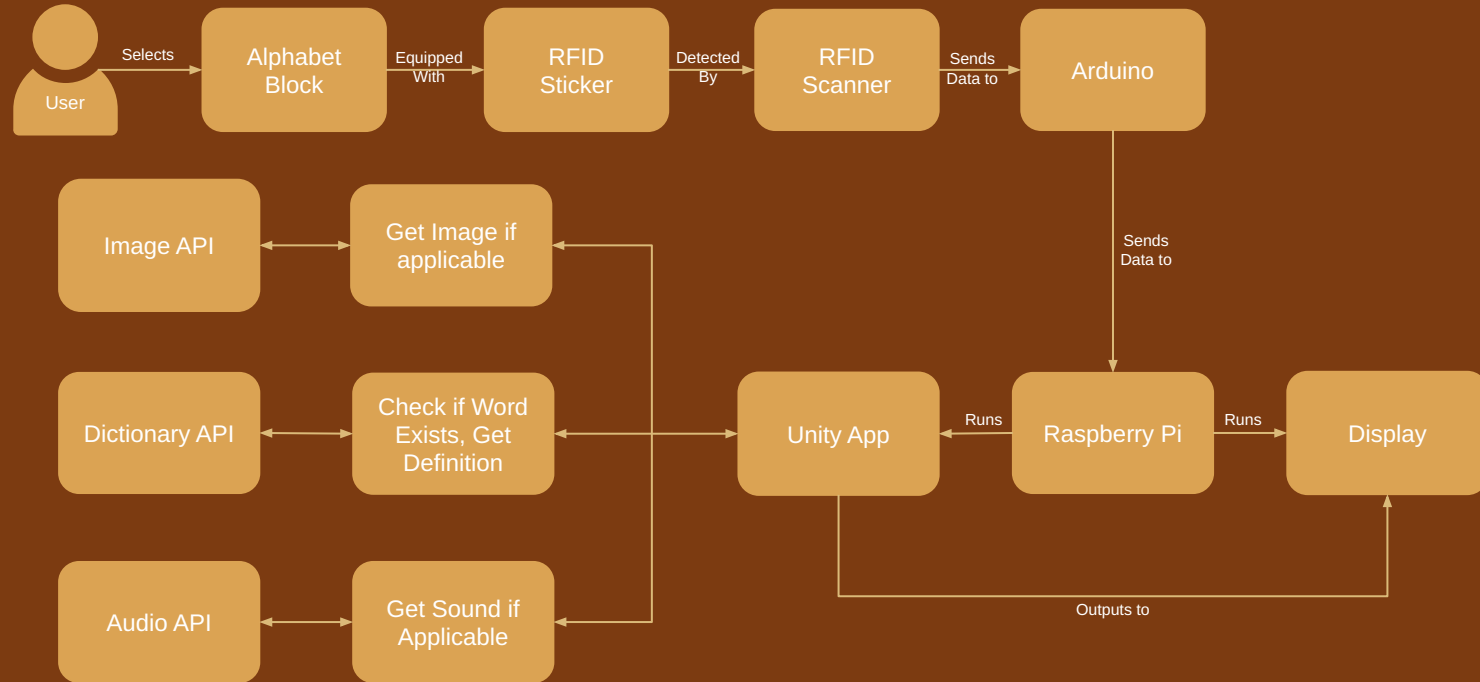
The background of the slide features a wood-grain pattern in shades of brown and tan. A solid orange rectangle is positioned in the upper center of the slide.

02

# Project Designs

# Architecture Diagram

# Architecture Diagram



# UI Designs



# UI Designs—Start Screen

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## Try Making a Word!

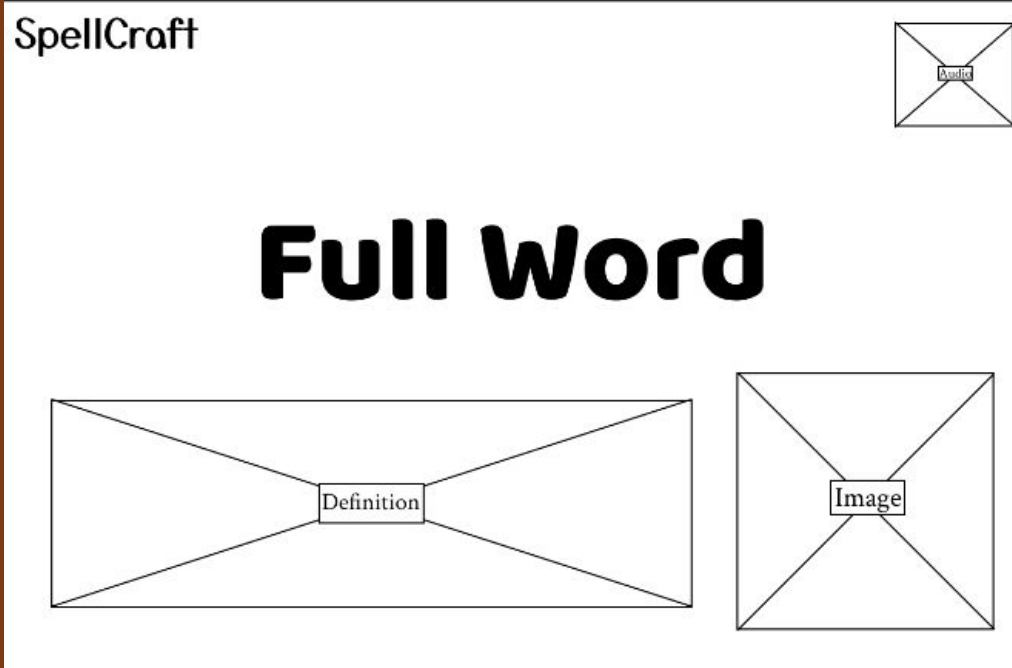
Place the alphabet blocks on the  
slots to begin

# UI Designs—While Crafting a Word

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**Partial Word**

# UI Designs—Word Crafted Screen



## Other Variations

- Words without audio
- Words without images
- Words without audio and images
- Words with multiple definitions

**03**

# **Project Progress**

# Research

All hardware has been researched and is awaiting approval and shipment.

## Materials

- 1 Arduino Mega 2560 Rev3
- 10 RC522 RFID Scanners
- 100 RFID Sticker Tags
- 1 Raspberry Pi 4 Model B
- 1 7-inch Display
- 3 Wooden Alphabet Block Sets
- Wood, etc. for Desk Enclosure

# UI Mockup

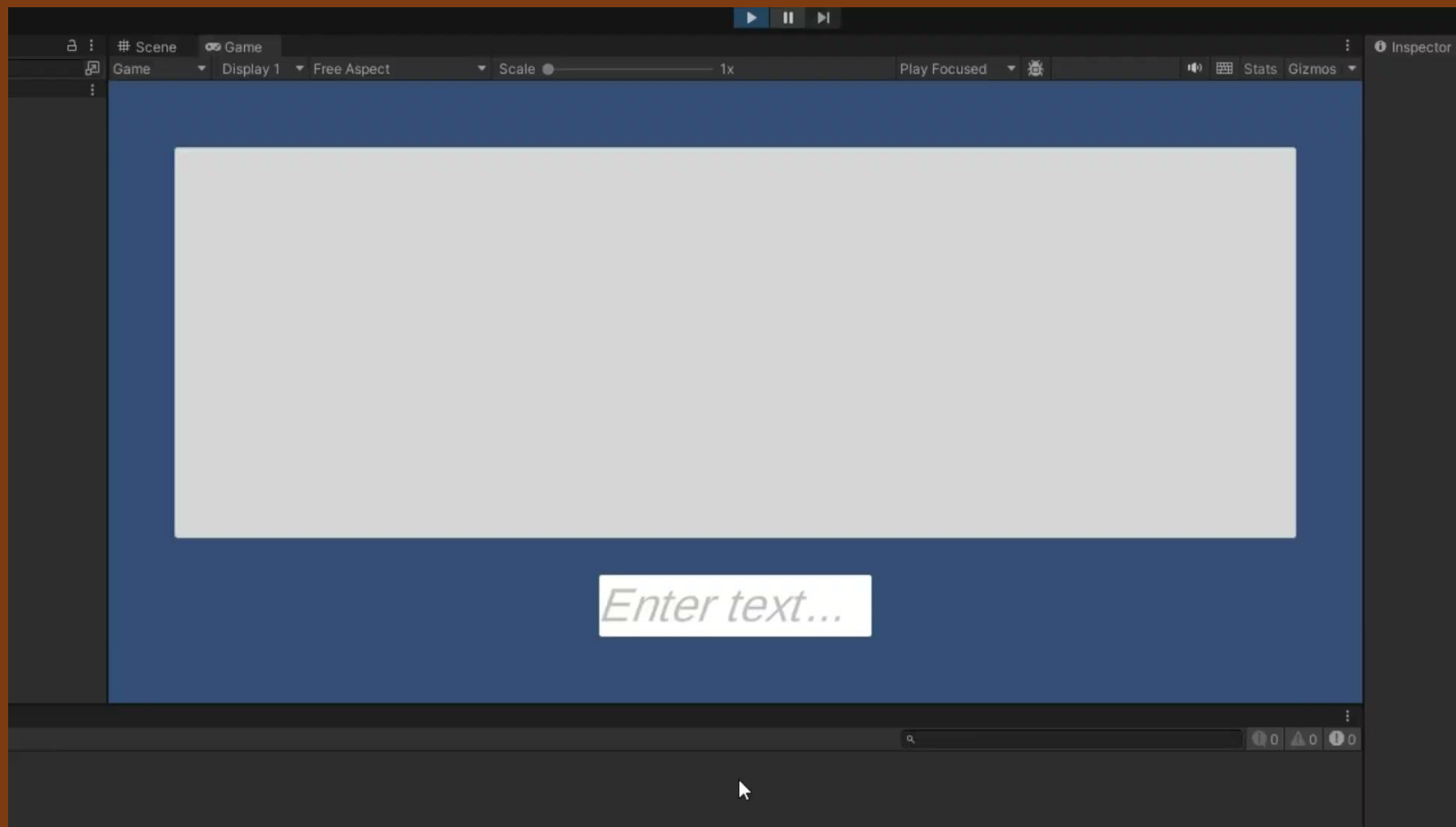
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# DOG

Def. 1 - (Noun) A mammal, *Canis familiaris* or *Canis lupus familiaris*, that has been domesticated for thousands of years





The background of the slide features a wood grain pattern. The pattern consists of vertical, wavy lines in a light tan color, set against a darker brown background. The lines vary in thickness and curvature, creating a natural, organic look. The pattern is consistent across the entire slide, with the text elements overlaid on a solid brown rectangular area in the center.

**04**

# **Individual Tasks**



# Individual Tasks

## Tony

Build and test  
RFID-Arduino assembly,  
send this information  
over serial to Unity,  
translate data into letter  
inputs in Unity

## Ian

Finish and Polish the  
SpellCraft UI and create  
the connection between  
RFID tags and Unity

## Michael

Working on refining  
dictionary API integration  
and including a source  
for images/sounds



# Thanks!

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