

106 學年度畢業專題

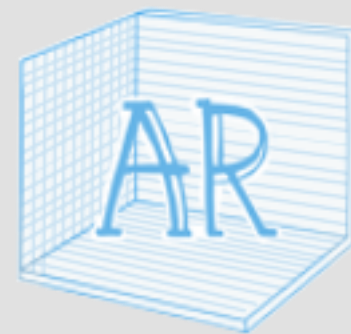
擴增實境與室內設計之應用

學生：吳維綦 (104025031)

曾麒豪 (104021084)

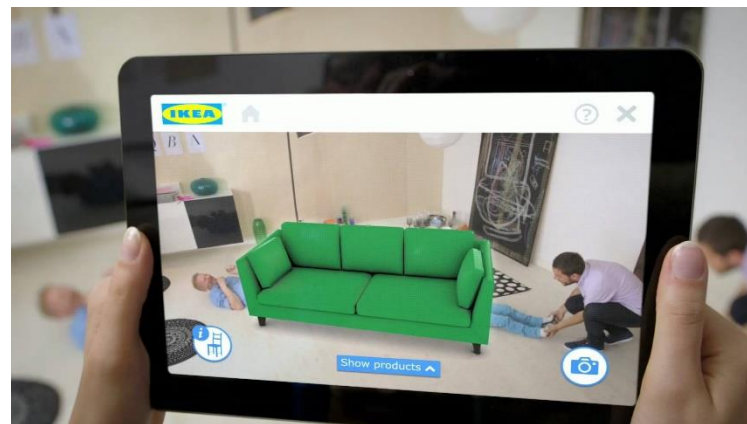
李昱緯 (103021015)

指導老師：陳兆南



研究動機

- 虛擬實境與擴增實境在現今逐漸普及，例如去年風靡全台的PokemonGo、Ikea的擴增實境產品目錄等。
- 現代人經常會重新裝潢房子或是增添家具，雖然Ikea AR產品目錄可以在螢幕上看到家具在空間的一角呈現，但無法在3D的環境看到整體感。我們認為除了從我們第一人稱視角看過去之外，還必須俯視整體才能感受整個空間的氛圍。



目的

利用擴增實境與室內設計的結合，希望可以藉由這樣的虛擬方式決定要在房間中擺設哪種類型的家具，方便檢視是否會造成動線困難、風格不一致、與想像中的差異等。

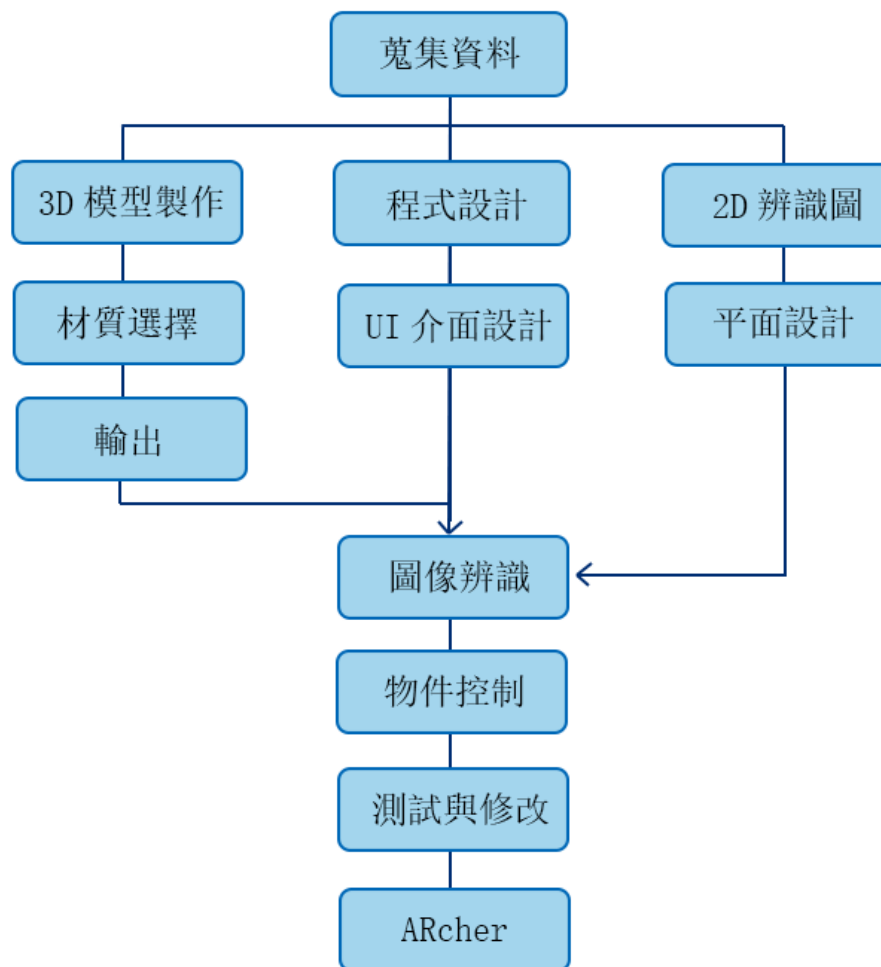
製作一個以擴增實境來幫助我們從不同的角度觀察，和具有檢視調整功能的程式。

擴增實境介紹

- 將虛擬物與現實結合
- 即時互動
- 三維

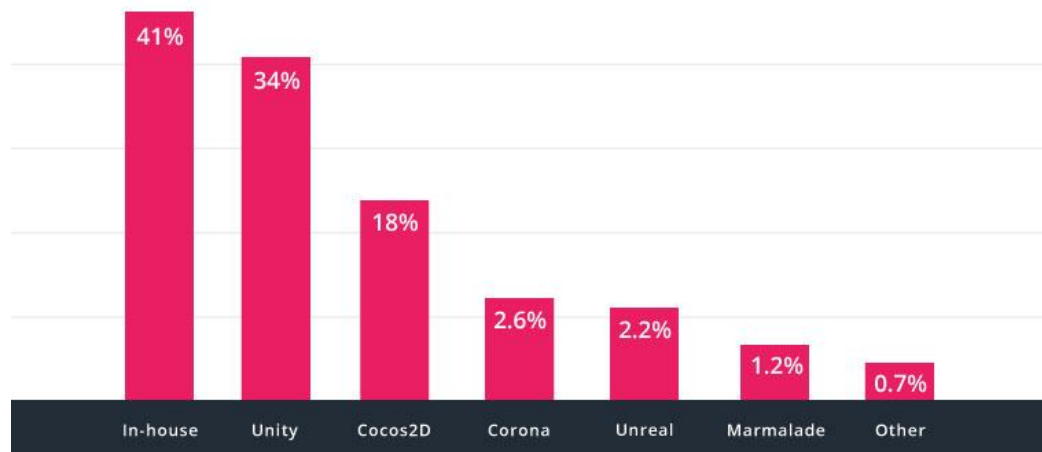


研究流程



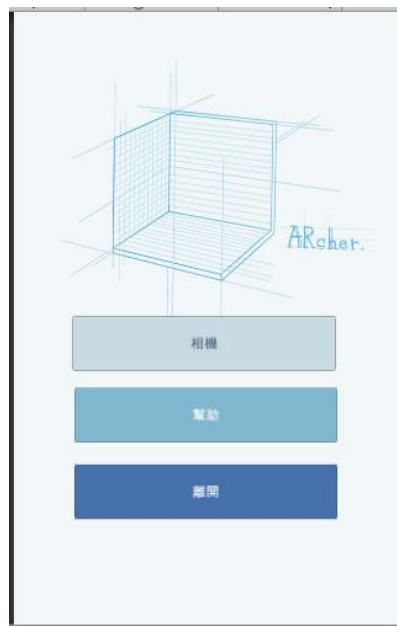


- 跨平台的遊戲引擎
- 可用於開發 Windows、MacOS、Linux 平台的單機遊戲，或是 iOS、Android 行動裝置的遊戲。
- Unity3D 是一個三維電子遊戲、建築視覺化、實時三維動畫等類型互動內容的綜合型創作工具。

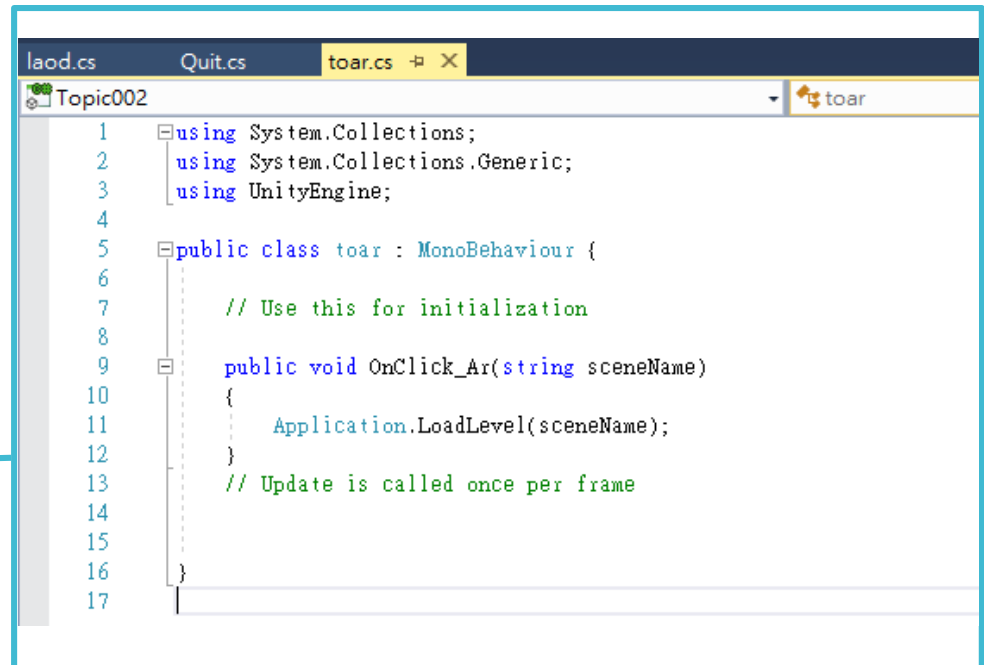
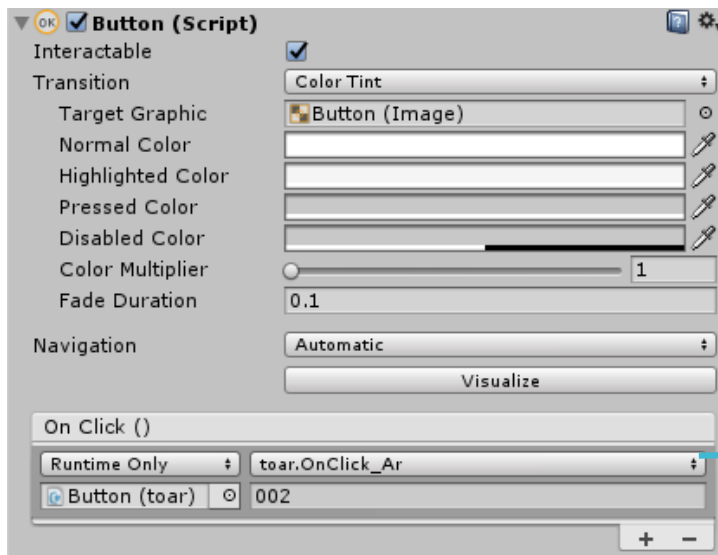
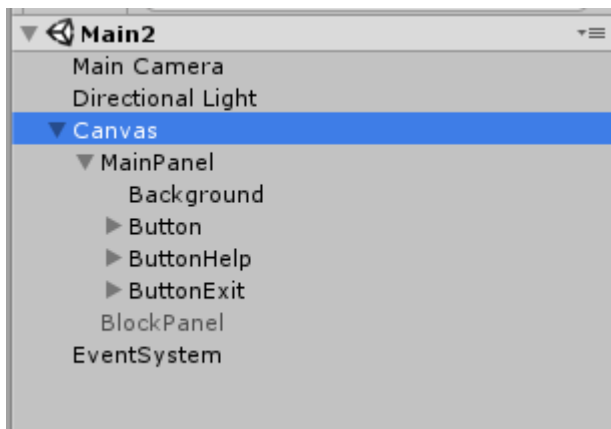


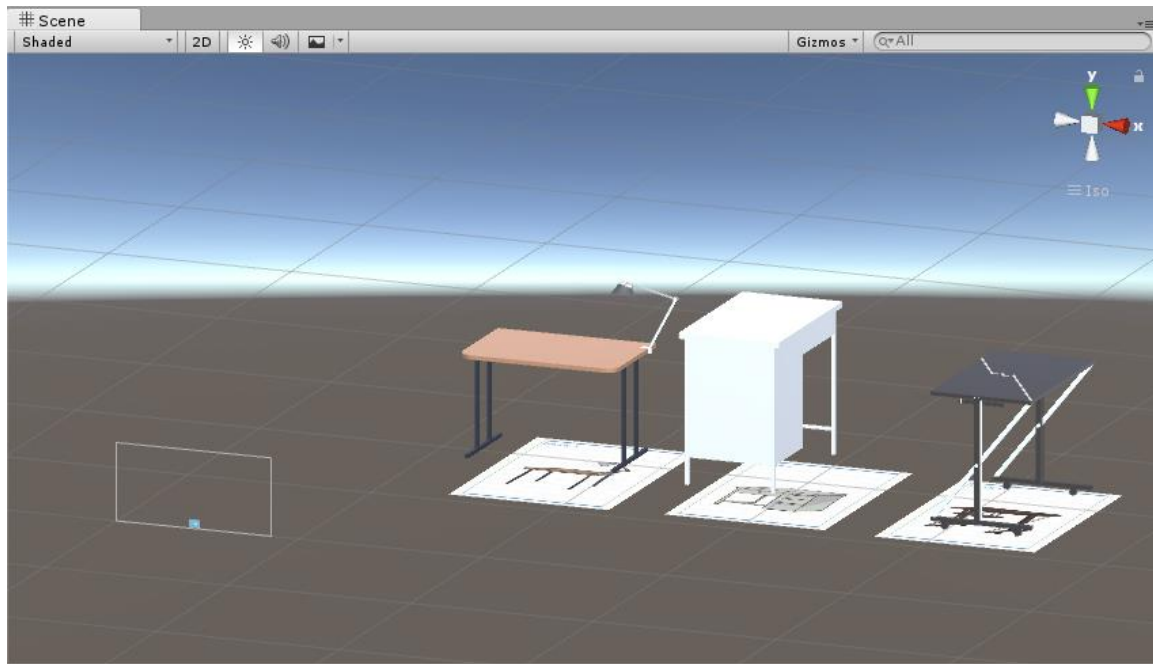
排名Top 1000的免費遊戲，34%使用Unity開發制作

UI介面



C# 腳本運用





Vuforia

November 09, 2017

Get started with Vuzix M300

The Vuzix M300 is a personal display and wearable computing device that enables users to improve existing workflows and opens new opportunities in industrial, medical, retail, supply chain and remote help desk uses.

Start developing today with the [Unity 2017.3 beta](#) or the public early access release of the [Vuforia Engine SDK for Android](#).

October 02, 2017

Vuforia Platform Update

Dear Vuforia Developers,

AR has never been more exciting, and we're thrilled to announce major updates to the Vuforia Platform.

First, Vuforia Engine 6.5 will ship with Unity 2017.2. This integration provides a number of benefits including a streamlined development workflow and a more seamless software update process. We've also added a Free deployment license for Unity so you can release apps that use the Mixed Reality Controller, User-Defined Targets, or that work with the brand new Mars-themed trading cards included in the

Project name*
New Unity Project **3D** 2D Add Asset Package

Location*
C:\Users\LI sir\Desktop ON Enable Unity Analytics ?

Organization*
Joker840127

Cancel Create project

Inspector Services

VuforiaConfiguration Open

Vuforia

App License Key AdiqHgP/////AAAAGb0
B+LRHY0M0rfD+RjCAe
80ZiAXecY0TE7X4TxrJ
74TWllvH48vT4R1+IN

Delayed Initialization

Camera Device Mod MODE_DEFAULT

Max Simultaneous Tr 1

Max Simultaneous Tr 1

Load Object Targets

Camera Direction CAMERA_DEFAULT

Mirror Video Backgr DEFAULT

Digital Eyewear

Eyewear Type None

Datasets

Load 20171109 Data
Activate

Inspector Services

VuforiaConfiguration Open

Vuforia

App License Key AdiqHgP/////AAAAGb0
B+LRHY0M0rfD+RjCAe
80ZiAXecY0TE7X4TxrJ
74TWllvH48vT4R1+IN

Delayed Initialization

Camera Device Mod MODE_DEFAULT

Max Simultaneous Tr 20

Max Simultaneous Tr 20

Load Object Targets

Camera Direction CAMERA_DEFAULT

Mirror Video Backgr DEFAULT

Digital Eyewear

Eyewear Type None

Datasets

Load 20171109 Data
Activate

Inspector Services

Camera

Clear Flags Solid Color

Background [Black]

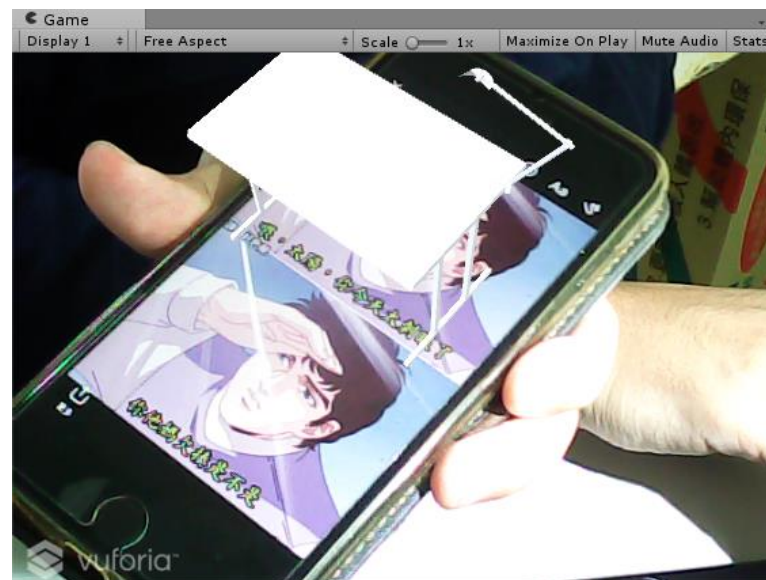
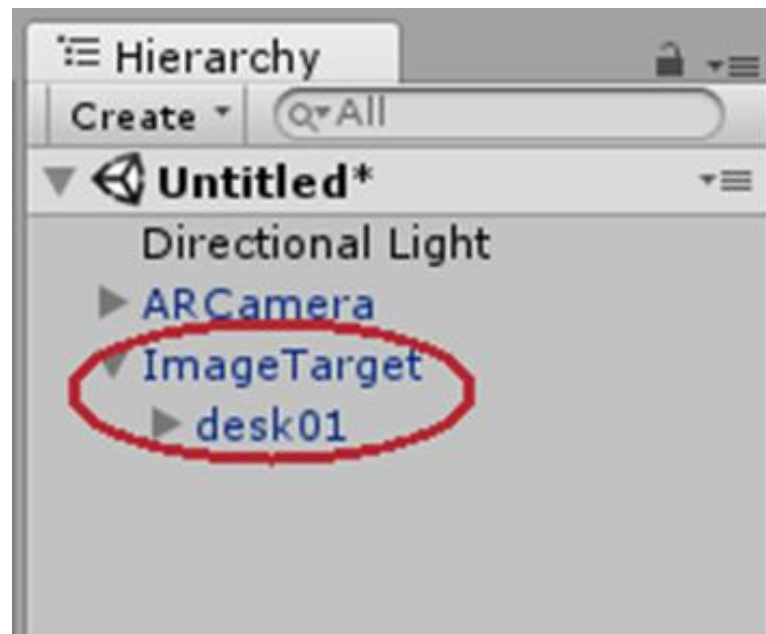
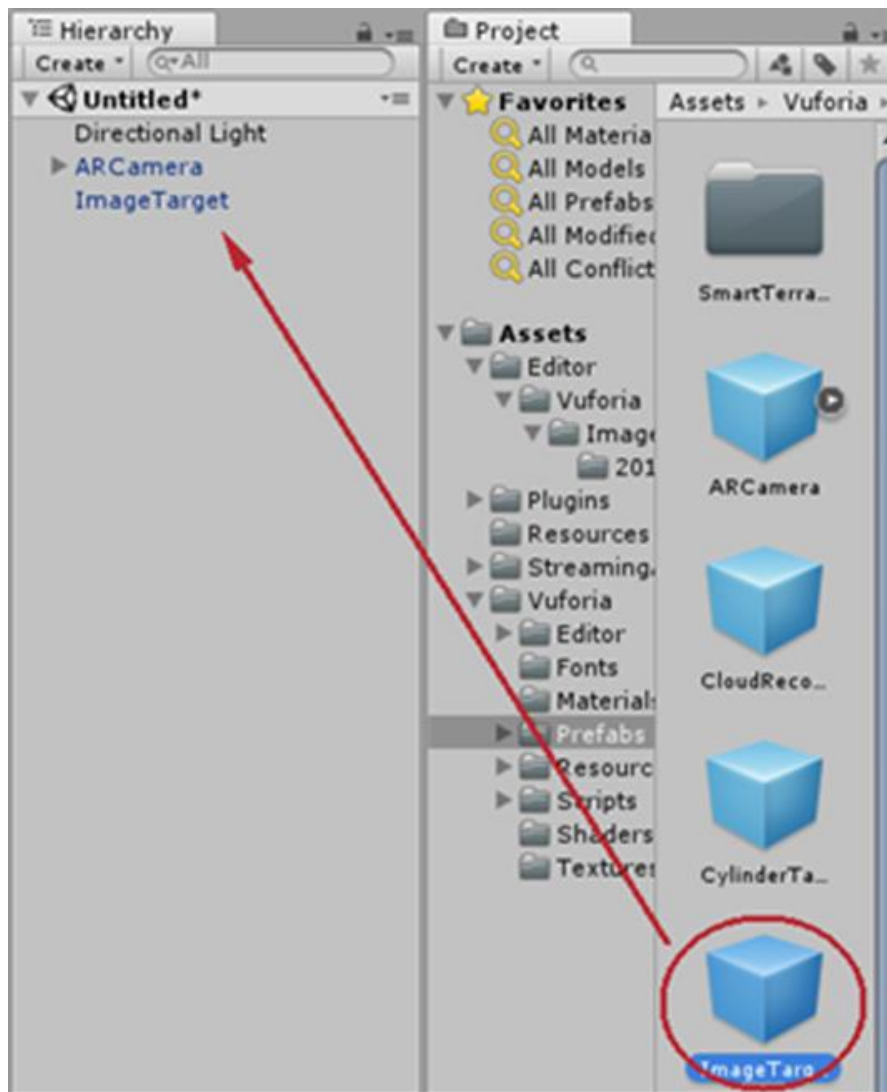
Culling Mask Everything

Projection Perspective

Field of View 51

Clipping Planes Near 0.01
Far 1e+11

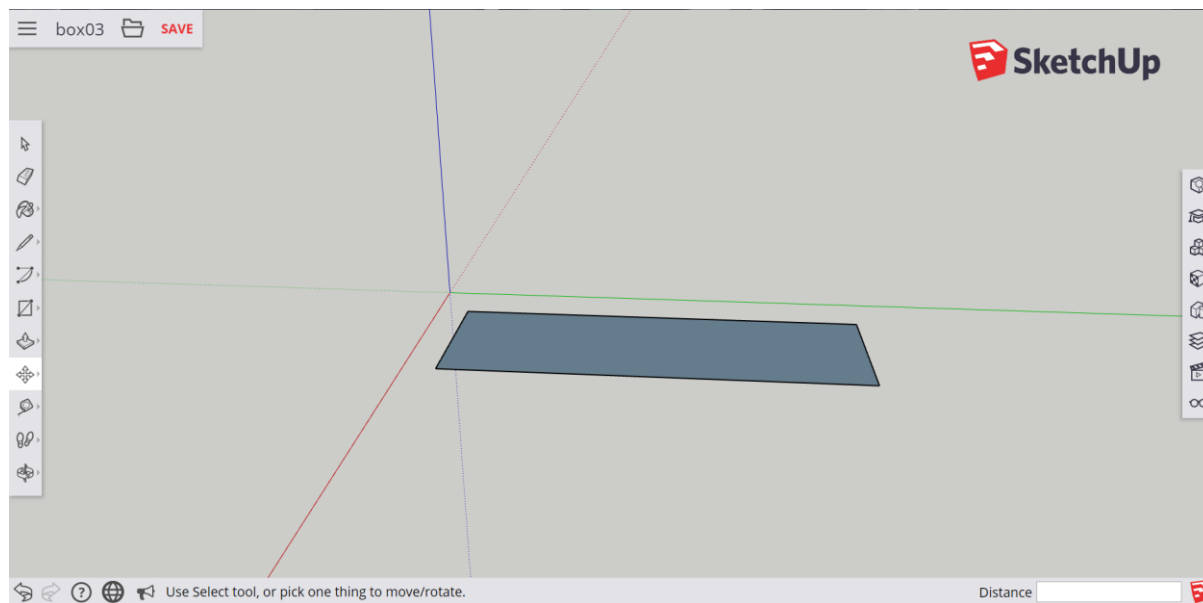
Viewport Rect
X 0 Y 0
W 1 H 1



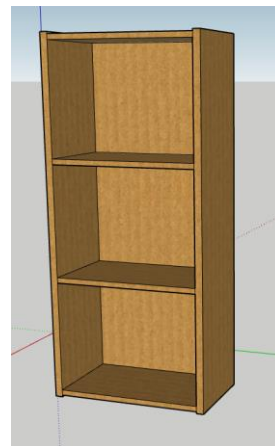
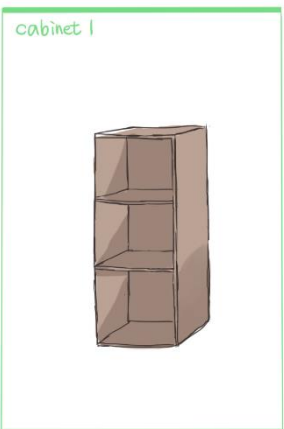
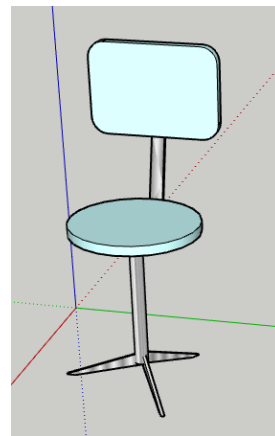
模型製作

SketchUp

- 專題使用SketchUp建模



圖卡與模型



成果展示

結論

- 未來想嘗試讓使用者上傳自己的模型的系統，或是讓使用者在網路上尋找想用的資源加入到模型的資料庫，讓其他使用者也能共享這些資料，讓使用者可以設計出更多不一樣的空間室內擺設的方向發展。

報告結束