JDLAM

Presents

MONOPOLY ARCHITECT-AR

3D Modeling / Printing Final Presentation

Xu Lin (Jo) - 5/06/2015

MONOPOLY
ARCHITECT-AR

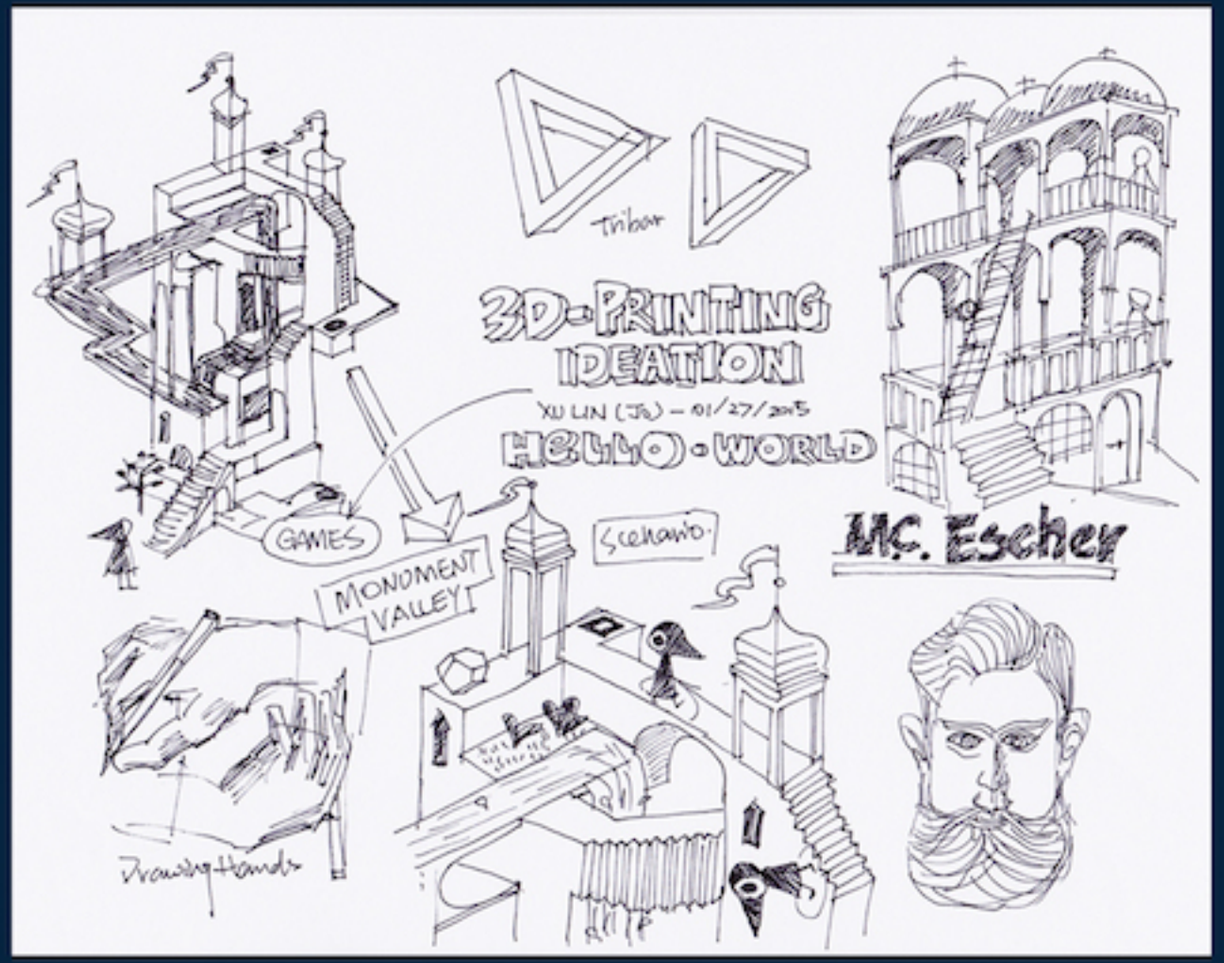
Table of Content

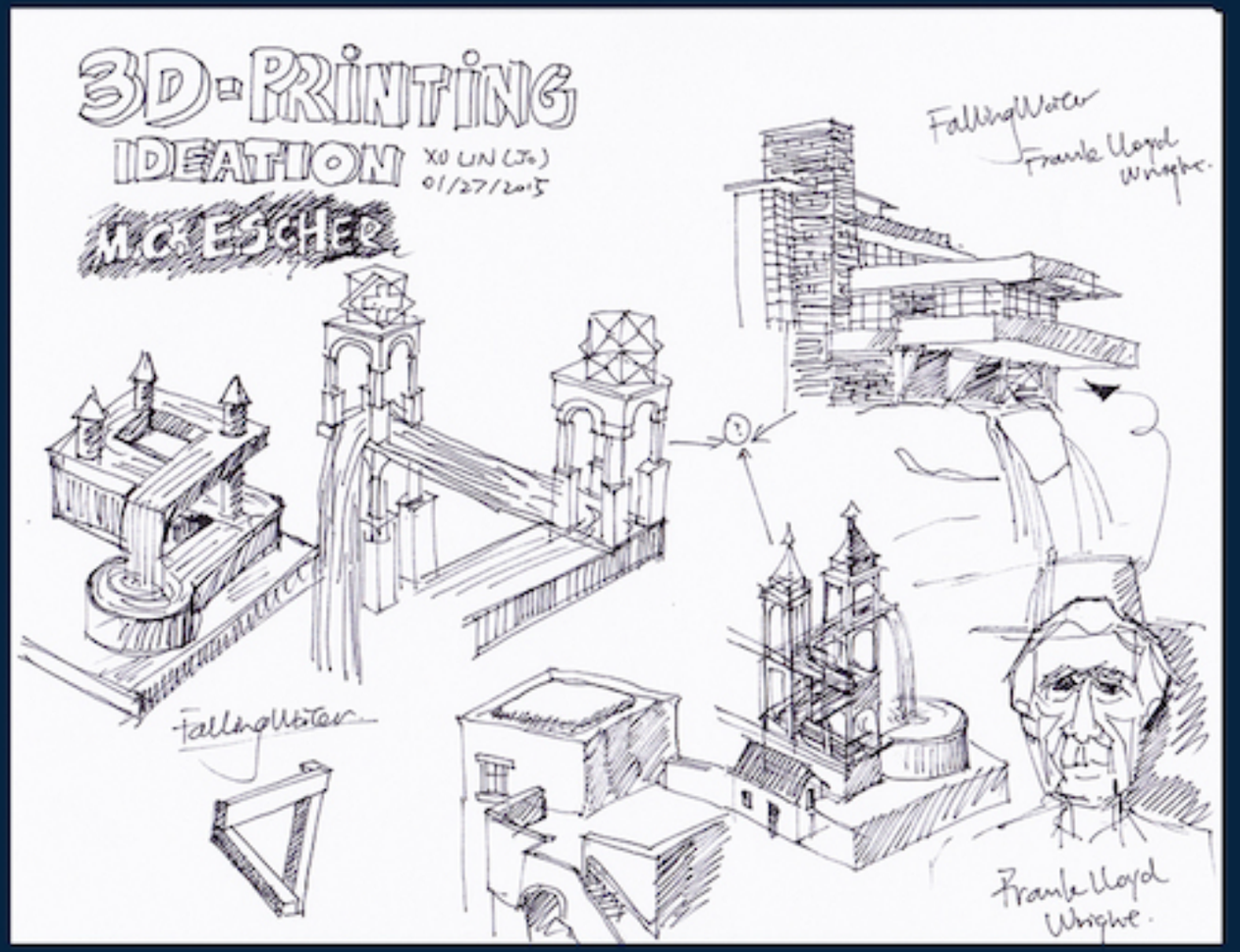
1 Ideation

1.1 The M.C. Escher Concept

1.2 The Monopoly: Architecture Concept

1.1 The M.C. Escher Concept





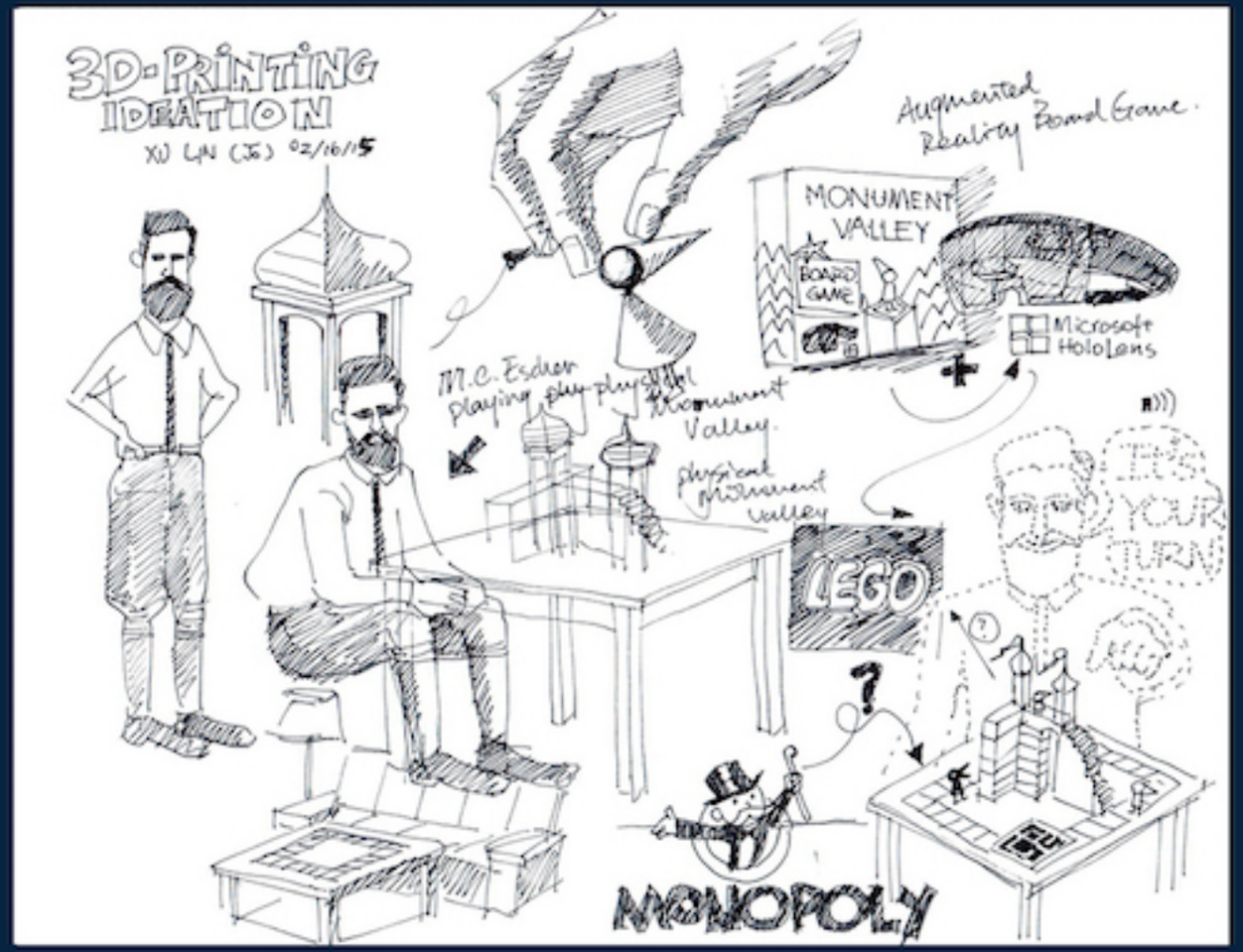
M.C. Escher's 2 dimensional superrealism, impossible constructions and architectures designs are the first idea to be explored for the 3D printing class, since the author loves playing *Monument Valley*. However, in realy practice, it's rather difficult to implement this concept in the 3 dimensional physical world.

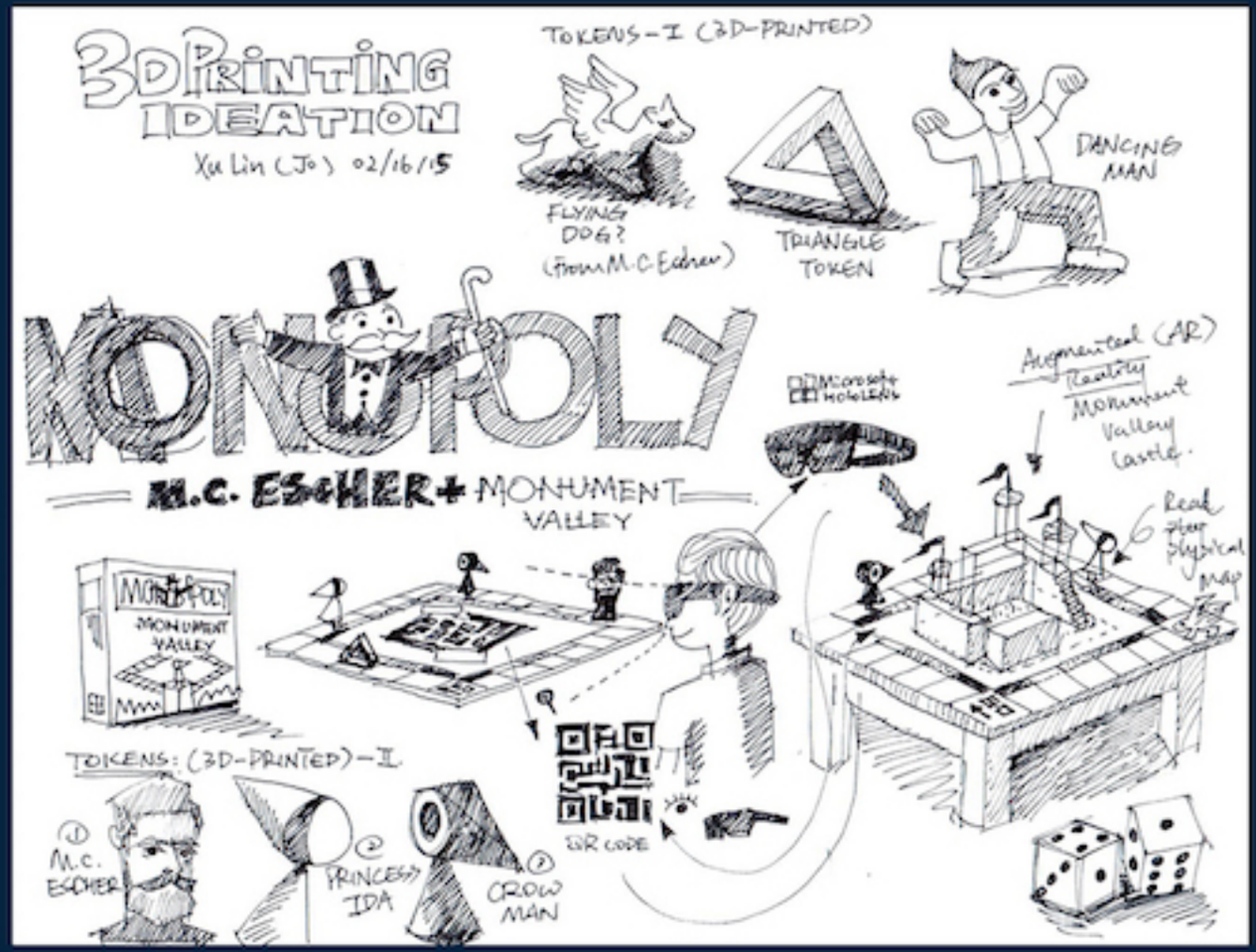
1.2 The Monopoly: Architecture Concept

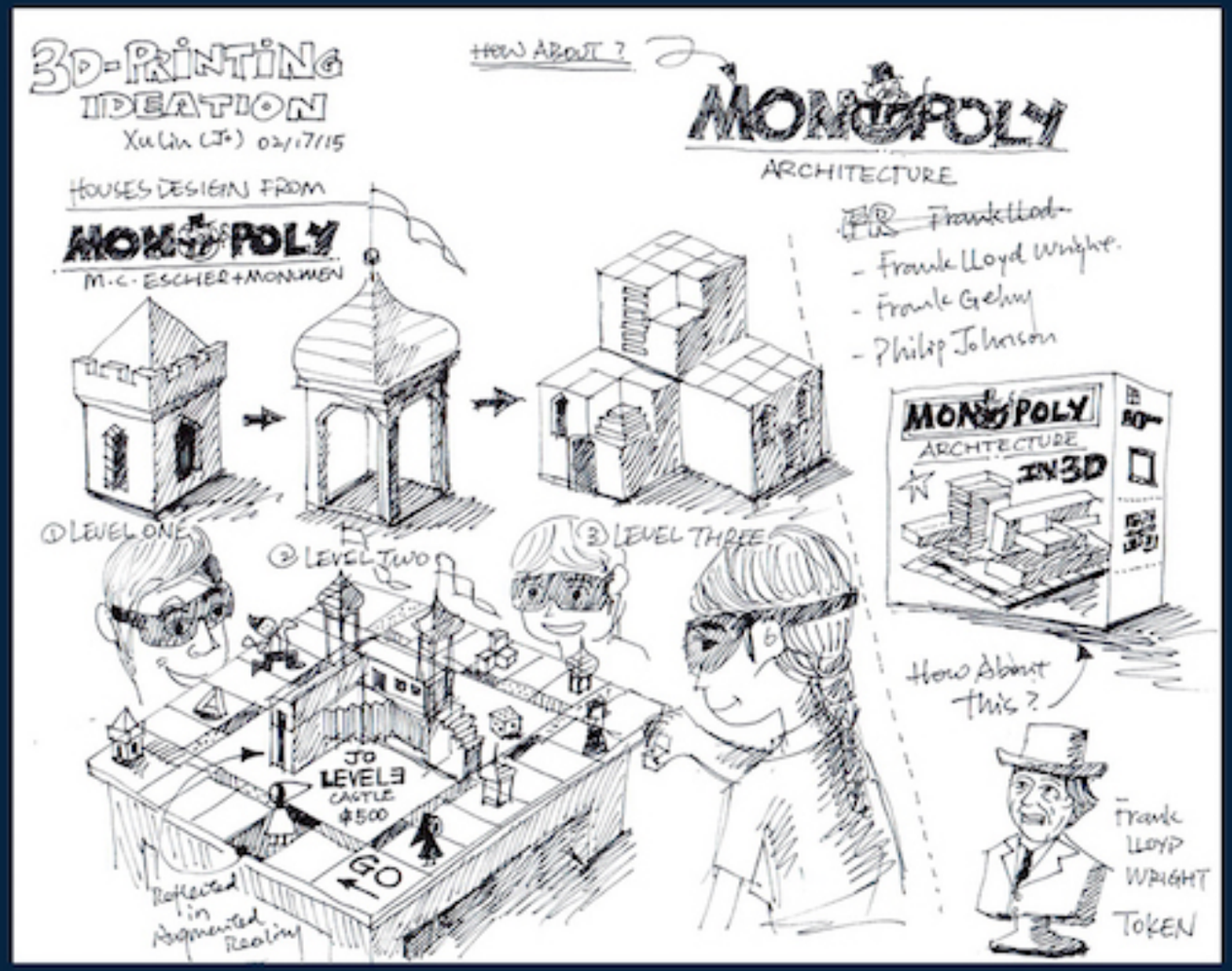
(Integration of virtual models with physical printed objects)

The idea of utilizing Augmeneted Reality (AR) technology to integrate virutal 3D models with physical 3D printing objects emerged.

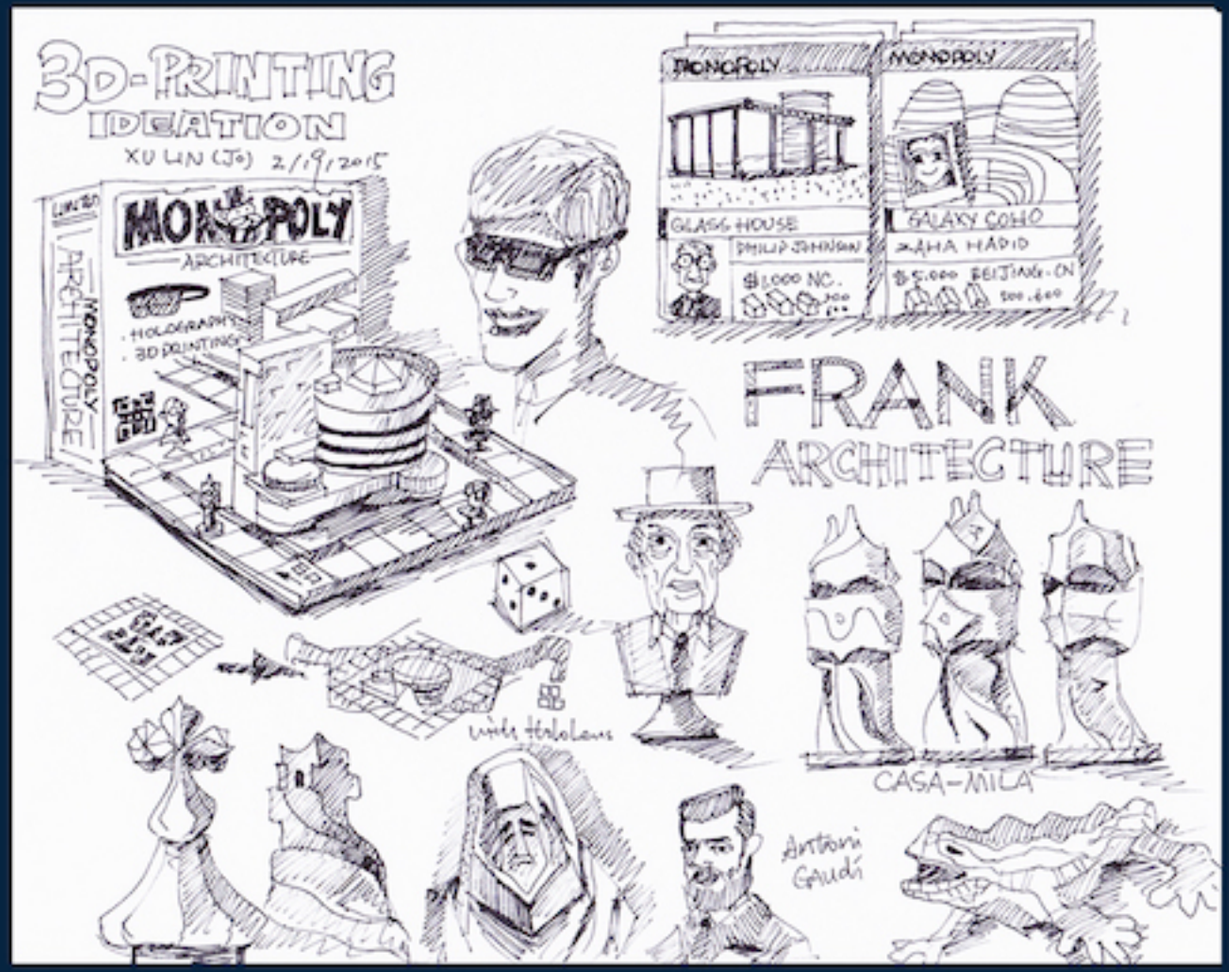
The first Monopoly Augmented Reality idea was still based on M.C. Escher's designs and the Monument Valley mobile game.







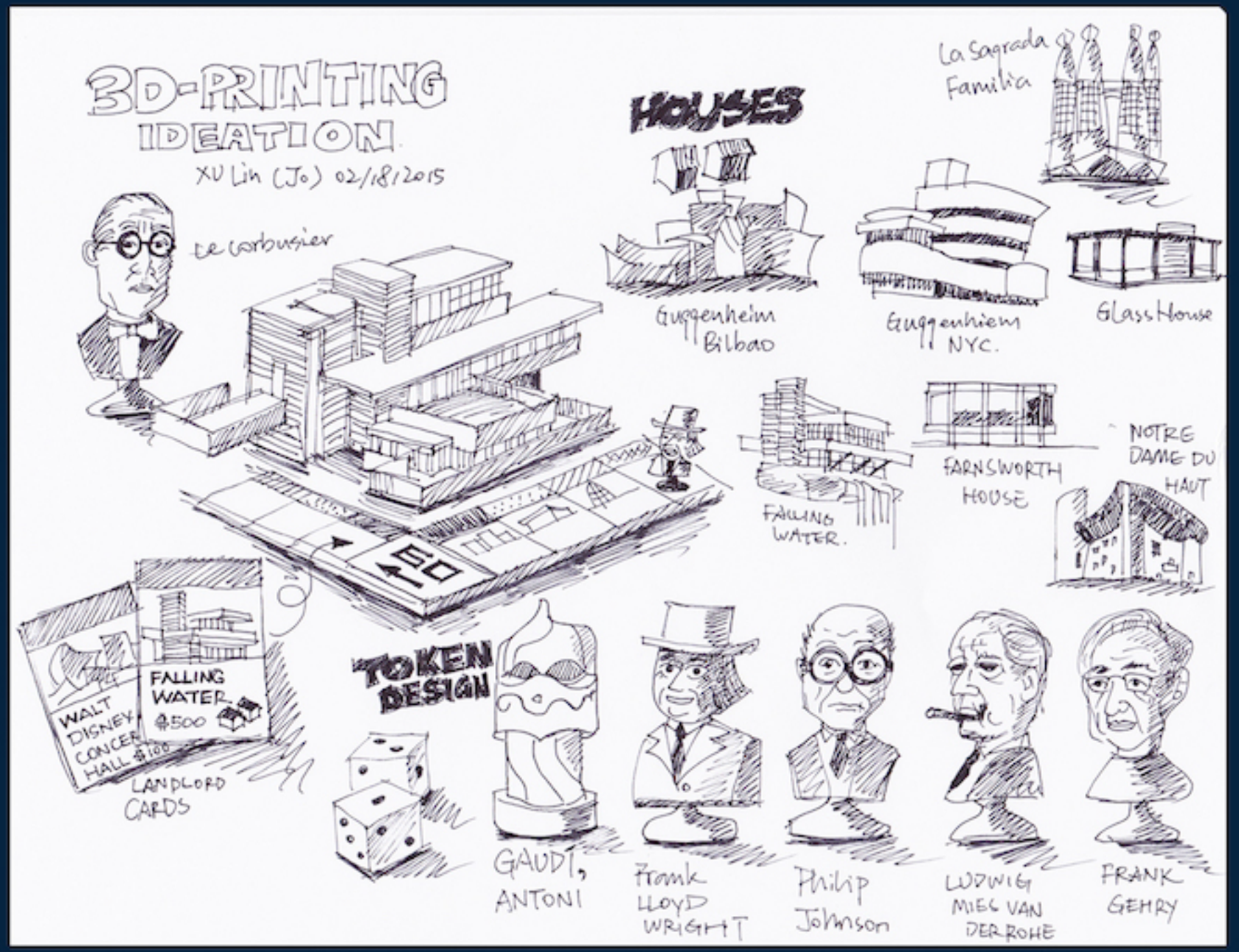
The illustrations here showcases family members playing Monument Valley and Monopoly AR games with the help of AR goggles.



MONOPOLY
ARCHITECT-AR

Finally, the Monopoly: Architects Augmented Reality idea was conceived and finalized.

The right side sketch illustrates the full scale of the design, from architecture modelings to figures 3D modelings and printings, graphic designs are also included.



2 3D Modeling and Printing

2.1 Frank LLoyd Wright

2.2 M.C. Escher

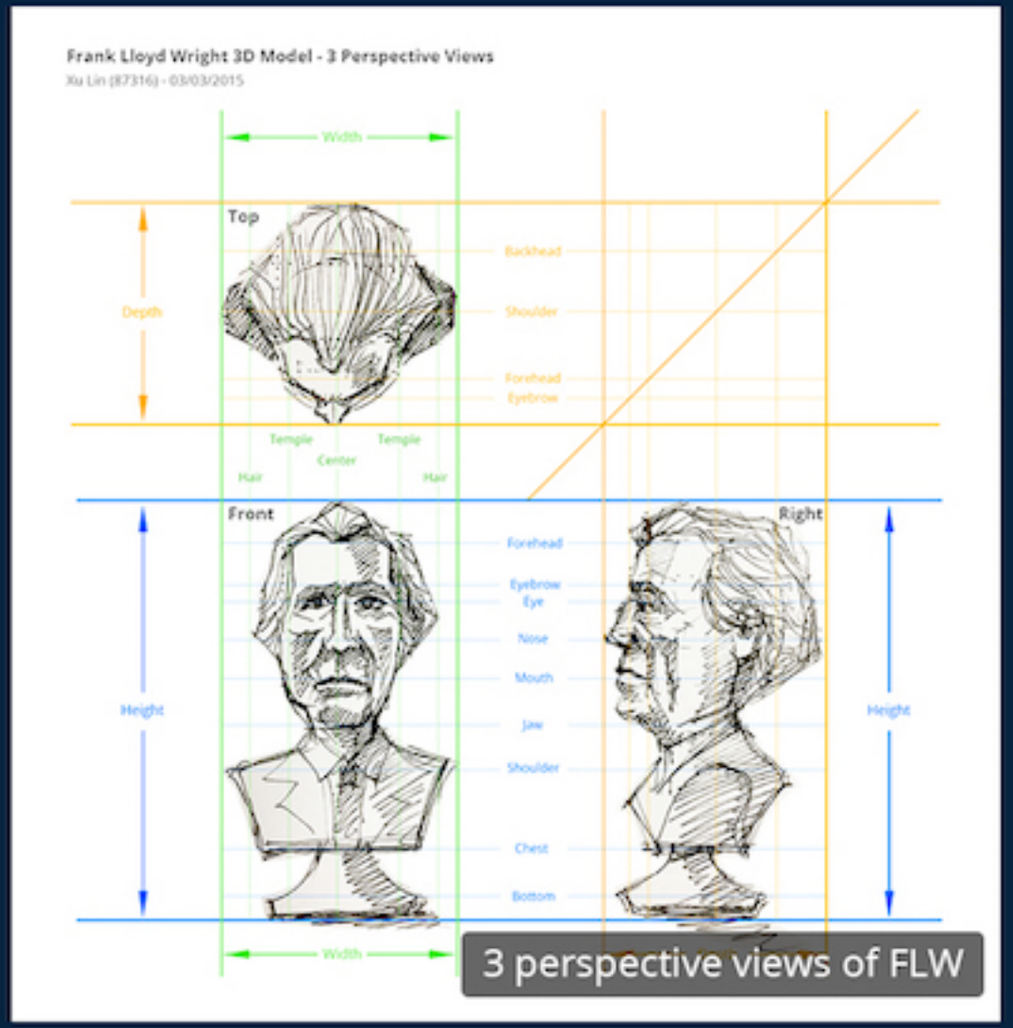
2.3 Antoni Gaudi

2.4 Philip Johnson

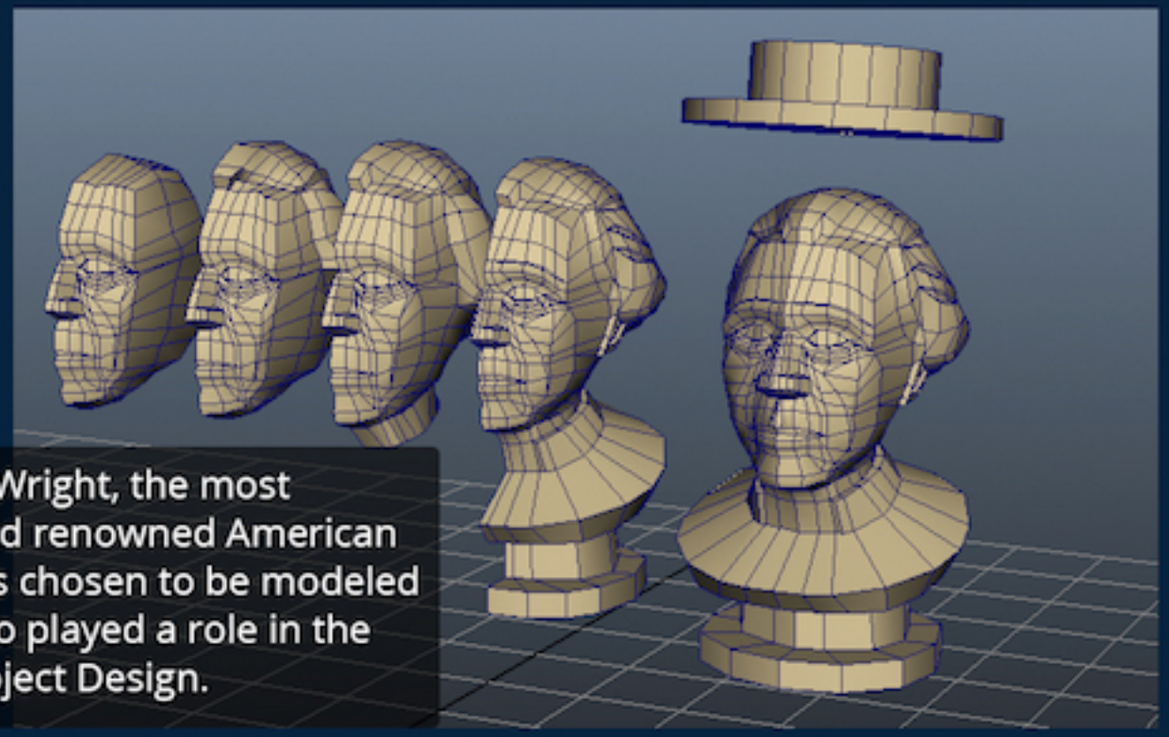
2.5 3D Printing Process Lessons

2.1 Frank LLoyd Wright

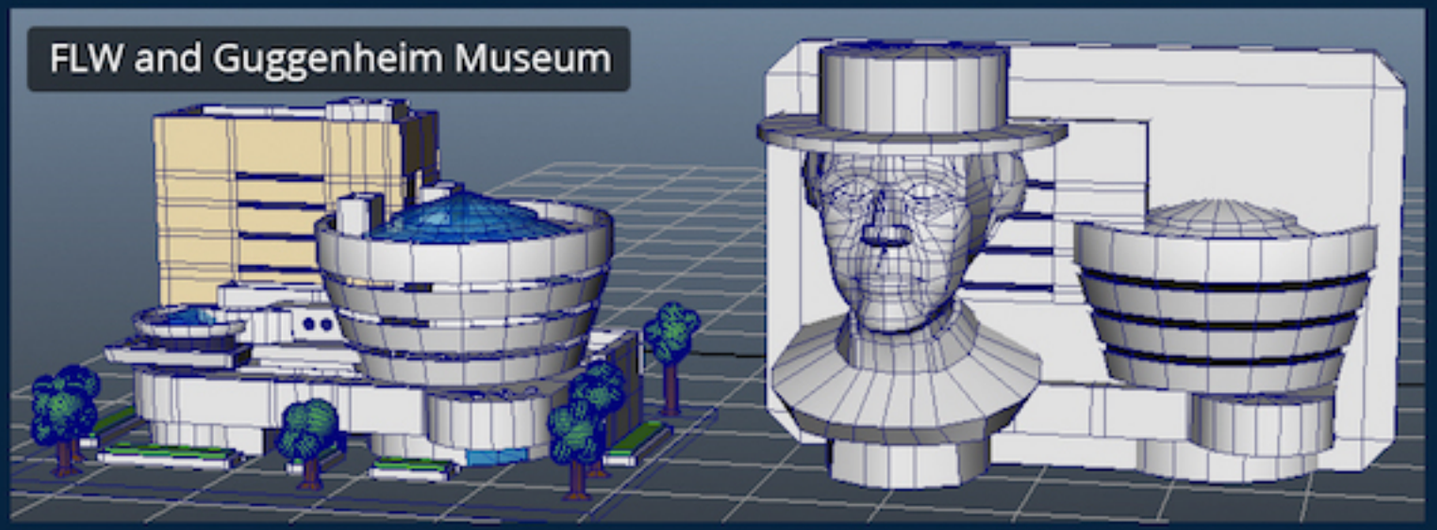
Sketch → *Model*



3 perspective views of FLW



Frank LLoyd Wright, the most important and renowned American architect, was chosen to be modeled firstly. He also played a role in the Mid-term Project Design.



FLW and Guggenheim Museum

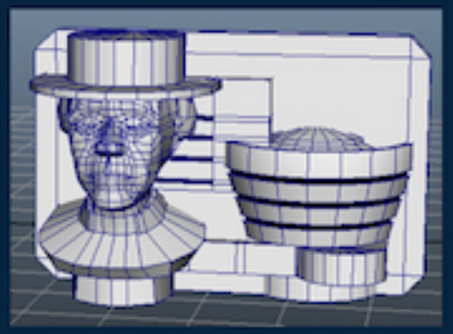
3D Printing of Frank LLoyd Wright
(Bust + Guggenheim Museum)

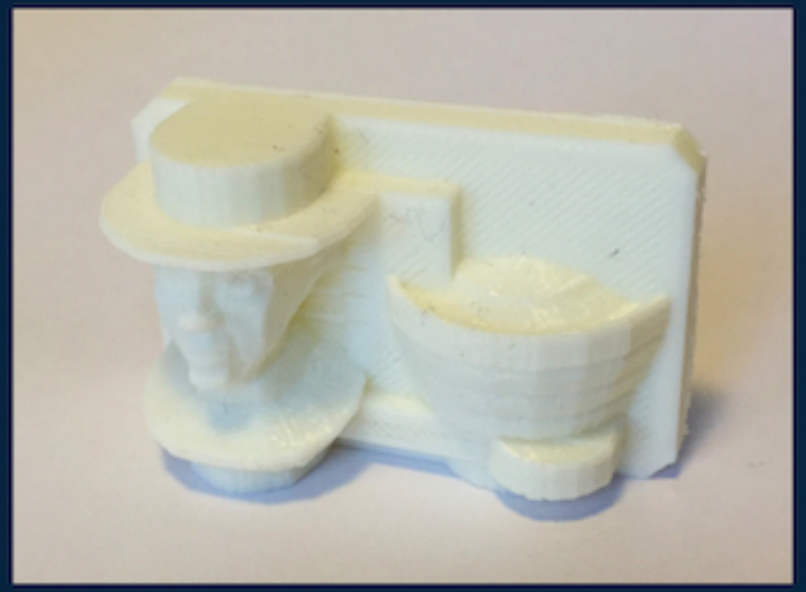
3D Printer

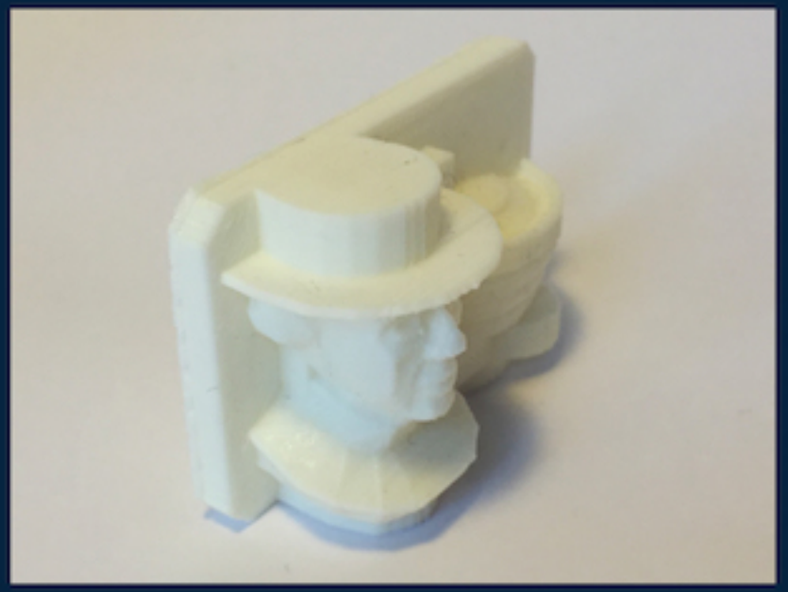
MakerBot
Replicator 2

Print

Model



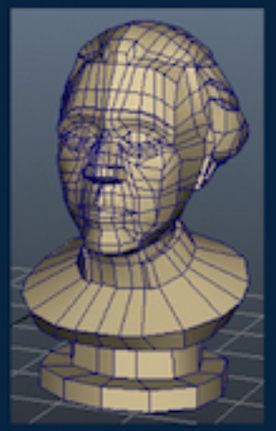




3D Printing of
Frank LLoyd Wright
(Busts)

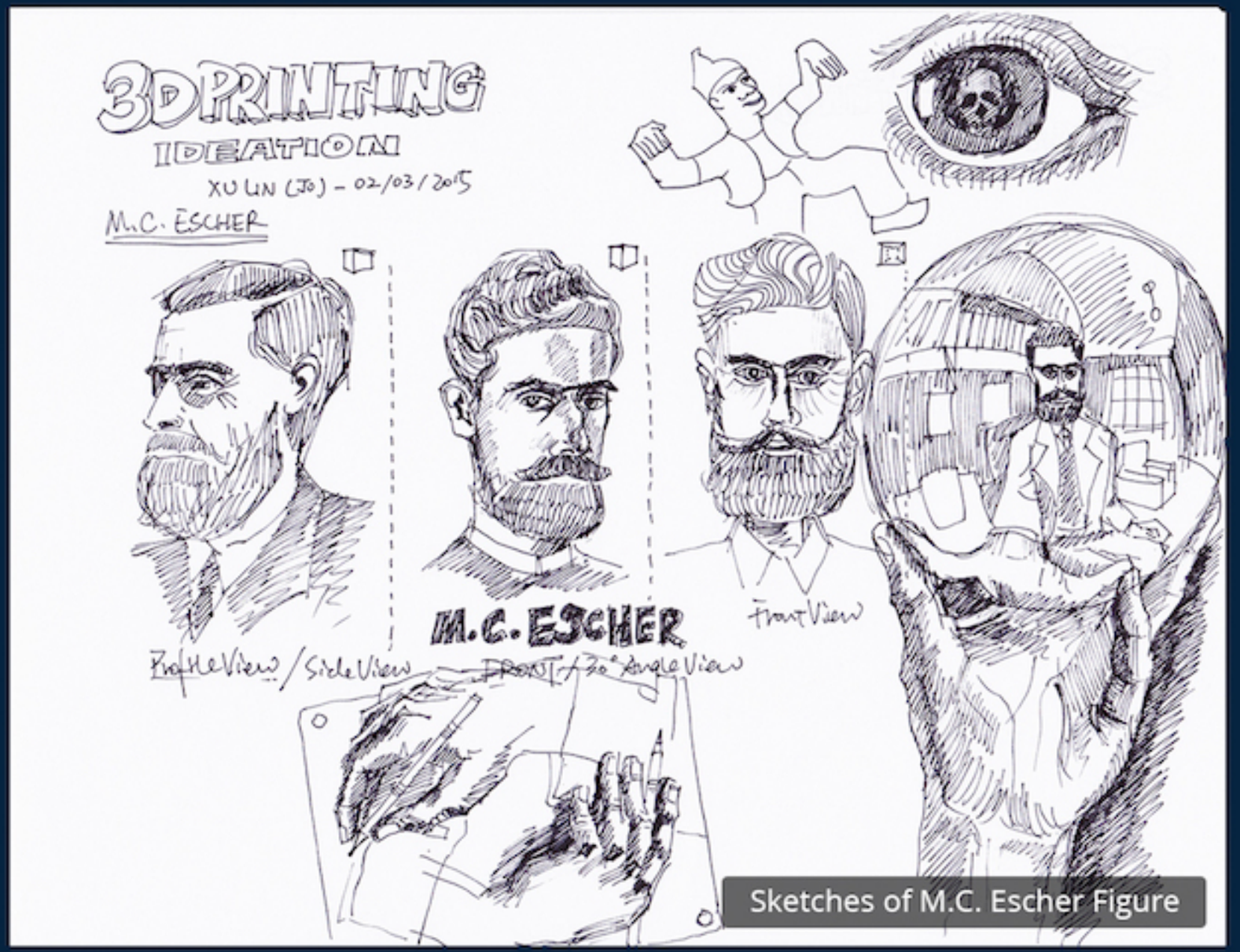







2.2 M.C. Escher

Since the 1st concept is about M.C. Escher and his amazing works, his model was also being created and printed. M.C. Escher's bust will be serving the purpose of being one of the game tokens.

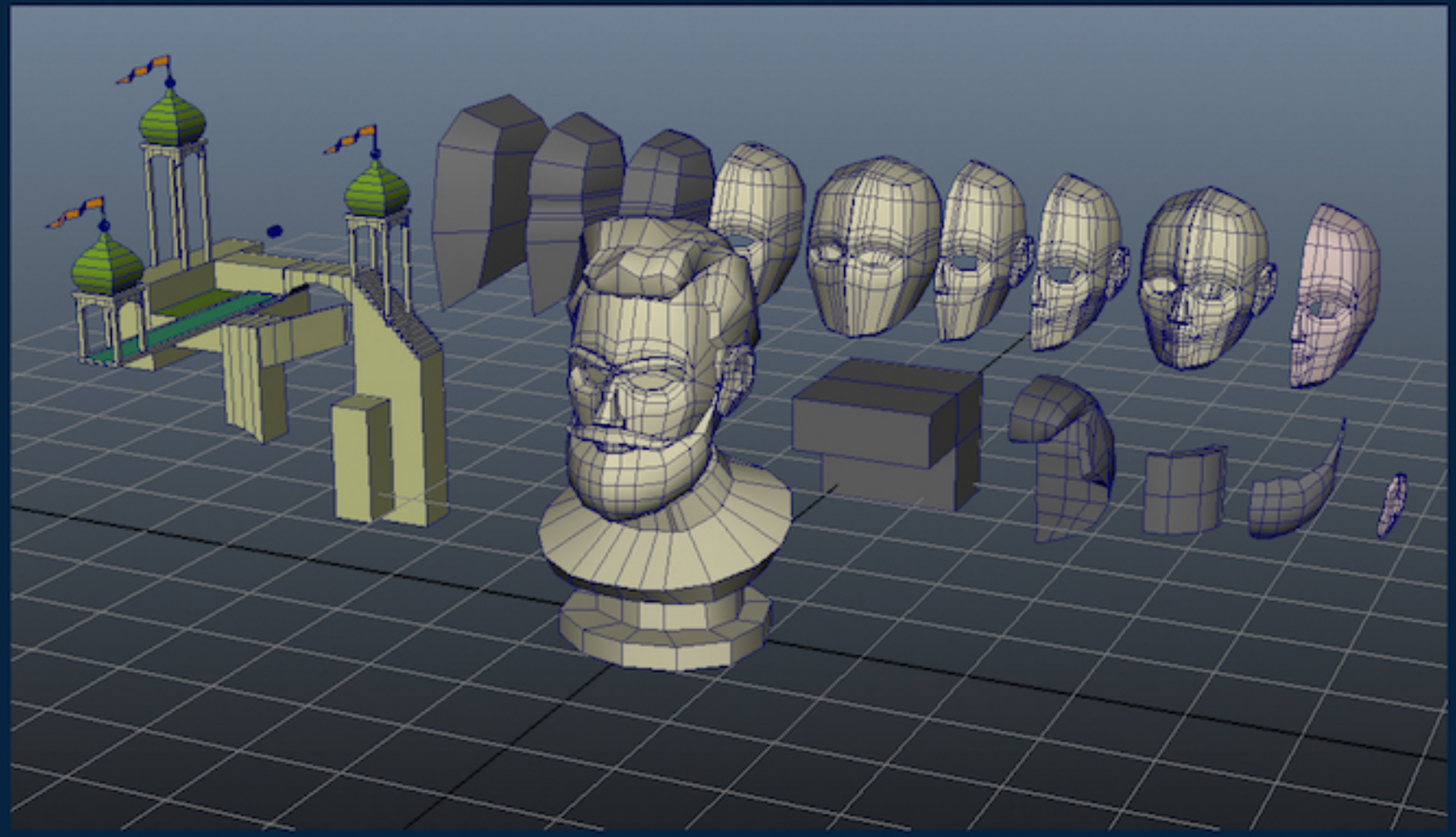


Sketches of M.C. Escher Figure

3D Modeling of M.C. Escher

Different small components of M.C. Escher's bust were modeled independently, and later on integrated together into a combined model, for the purpose of customizing the hair, beard and clothe colors in the future.

Nevertheless, it proved to be a wrong strategy for modeling 3D printing objects. The 3D printer doesn't support processing complex overlapping geometries very well. Therefore, the the M.C. Escher model was remodeled eventually.



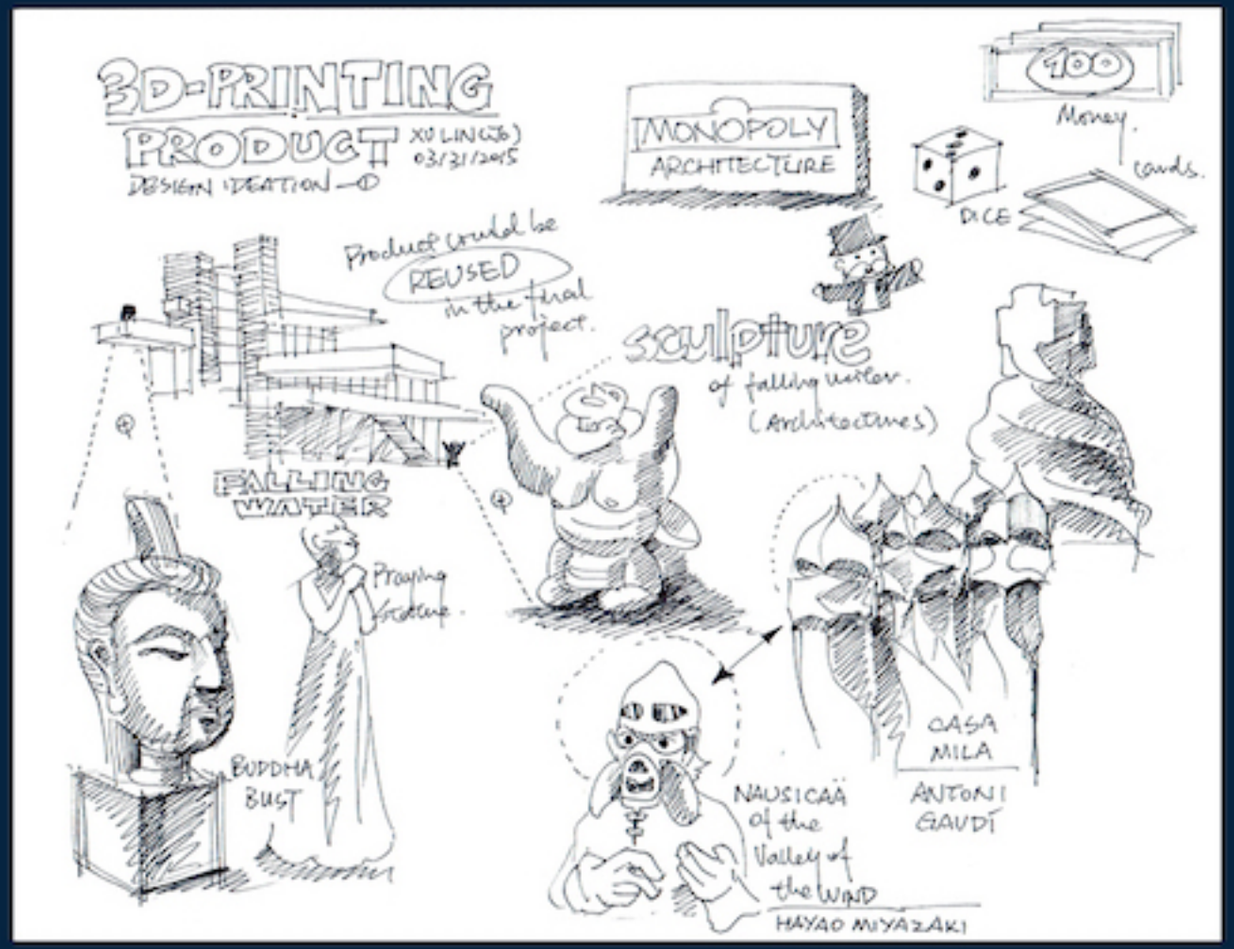
3D modeling process of M.C. Escher's bust

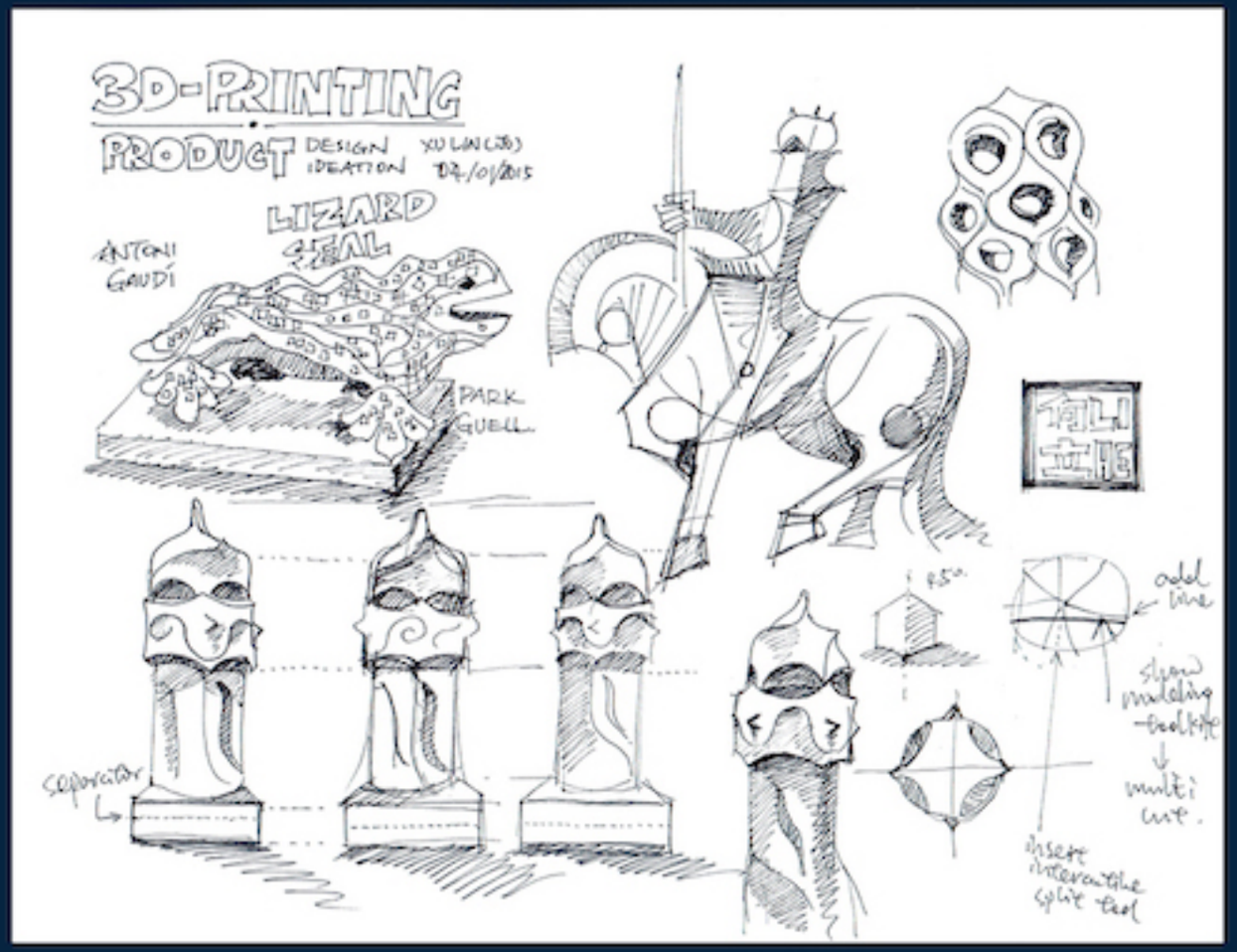
3D Printing of M.C. Escher

Two 3D printed models of M.C. Escher

2.3 Antoni Gaudi

Sketches of Antoni Gaudi's bust as the final project

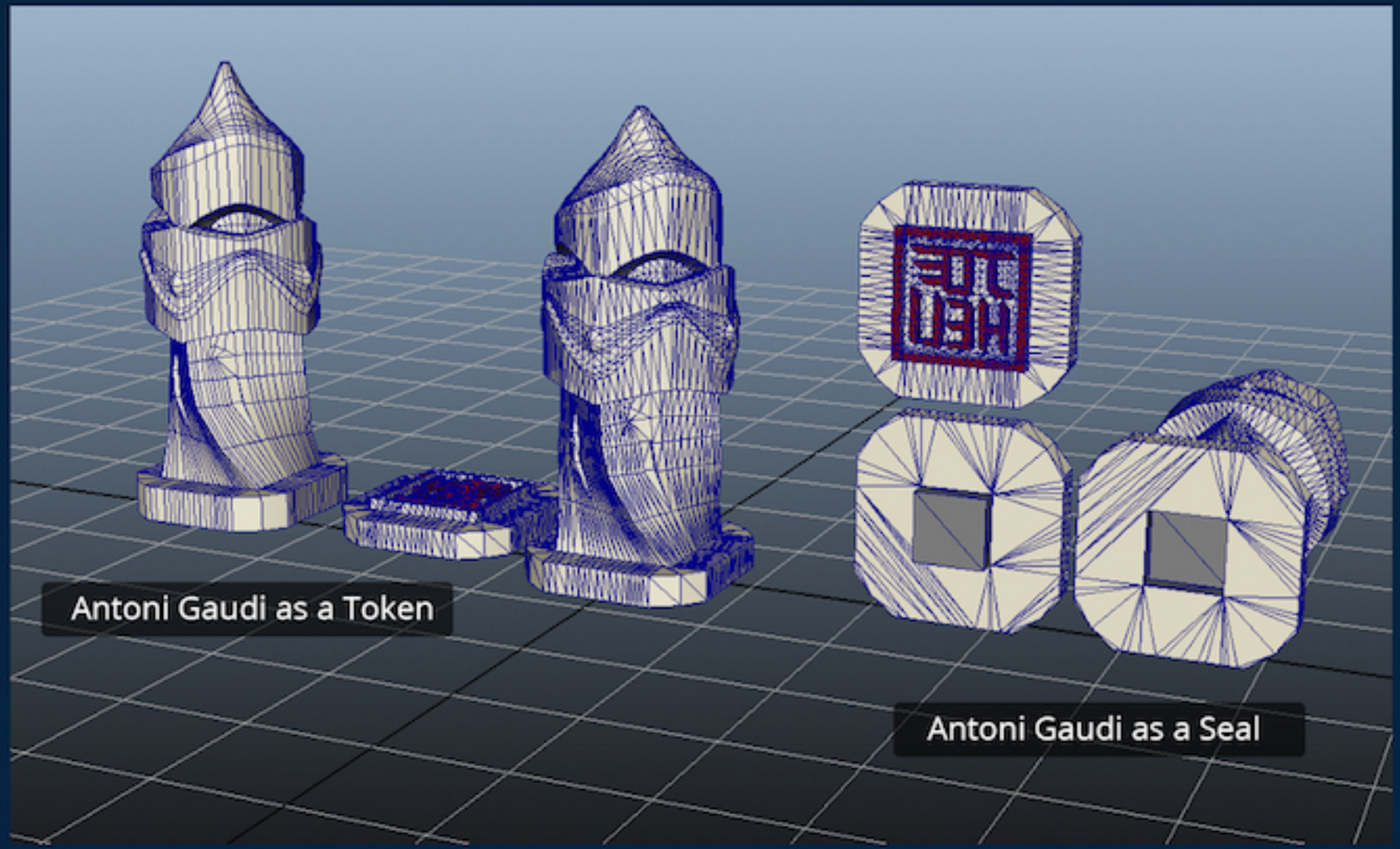




Sketches of Antoni Gaudi's seal as a product

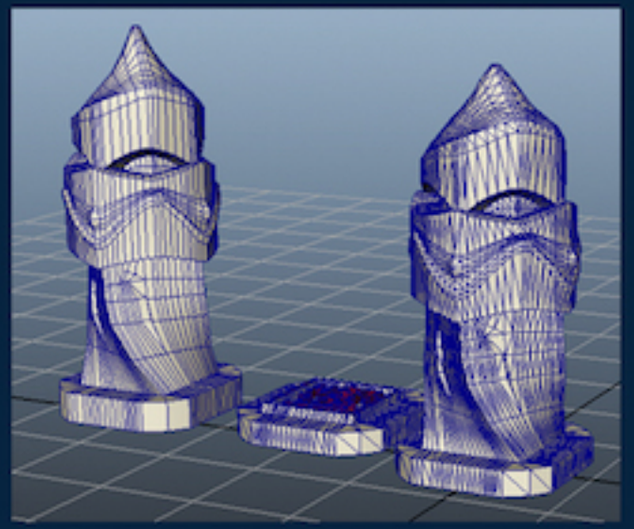
The Anitoni Gaudi's Casa Mila Chimney models serve two purposes in this 3D printing class: the Product design, and one of the elements of the Final Project design.

3D Modeling of Antoni Gaudi



In the product 3D model, Antoni Gaudi's chimney was attached with a seal basement. The basement and the body of the seal will be 3D printed separately, and glue together.

3D Printing of Antoni Gaudi



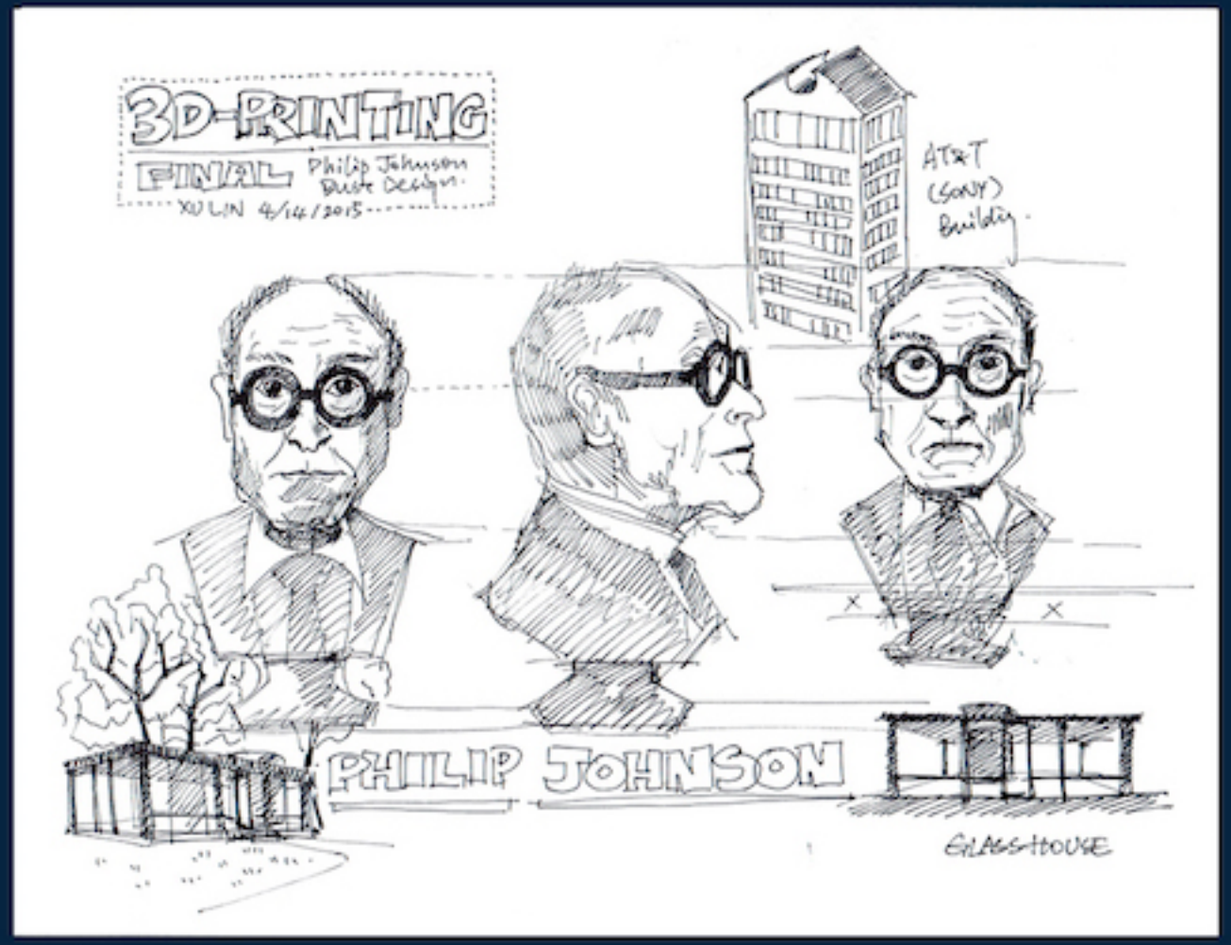


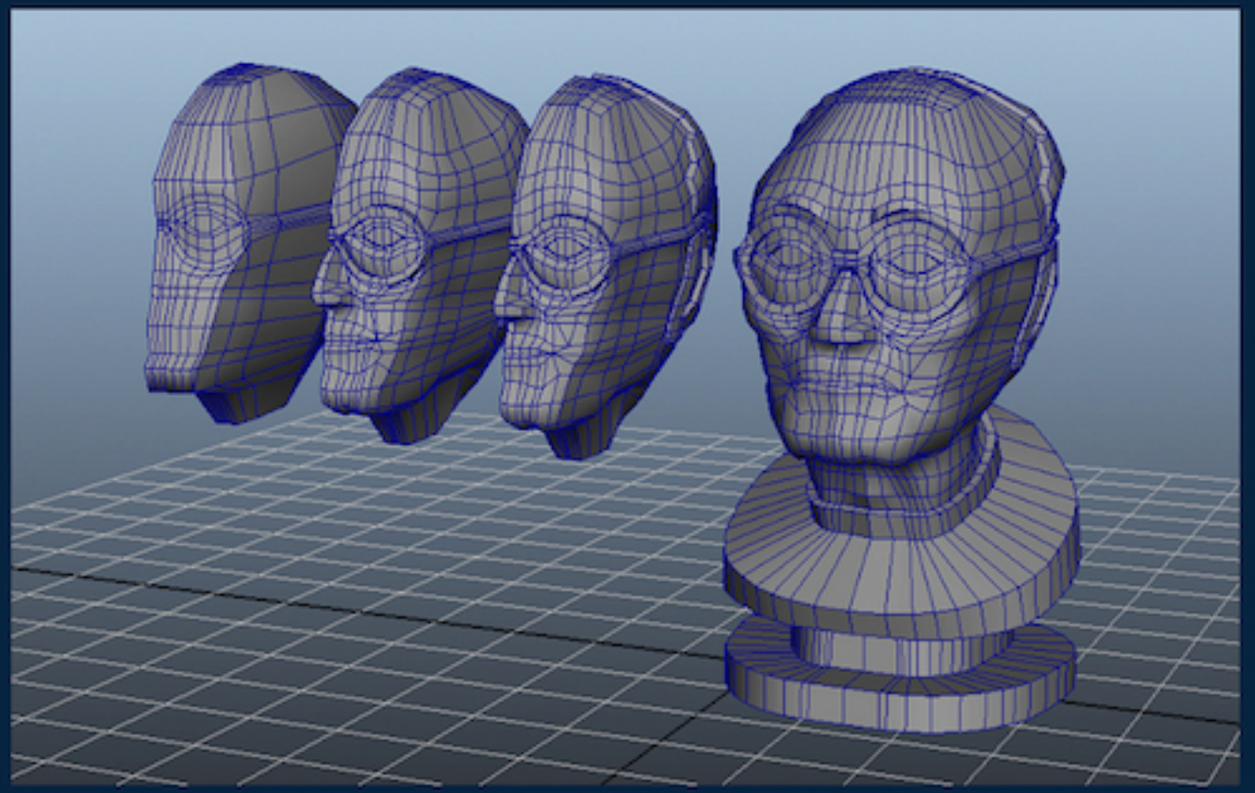



2.4 Philip Johnson

Model

Sketch

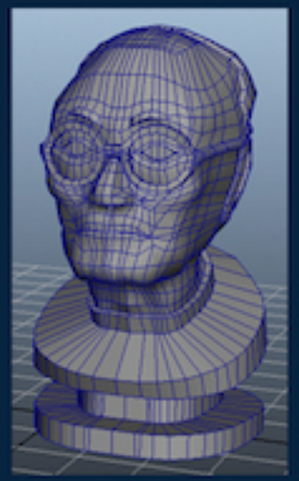




Philip Johnson looks like Le Corbusier (with the circle black glasses), and coincidently the author has created his most famous architecture previously: the Glass House, therefore, Philip Johnson's bust was modeled and became part of the final project.

3D Printing of Philip Johnson

Model → Print



2.5 3D Printing Process Lessons
(Two Major Issues of 3D Printing)

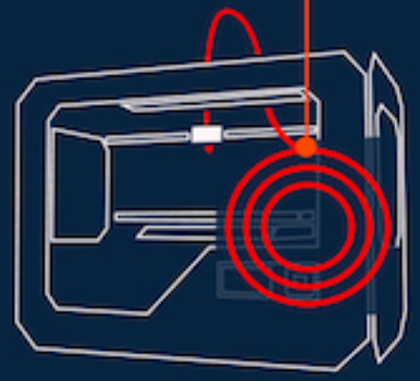
3D Printer
MakerBot
Replicator 2

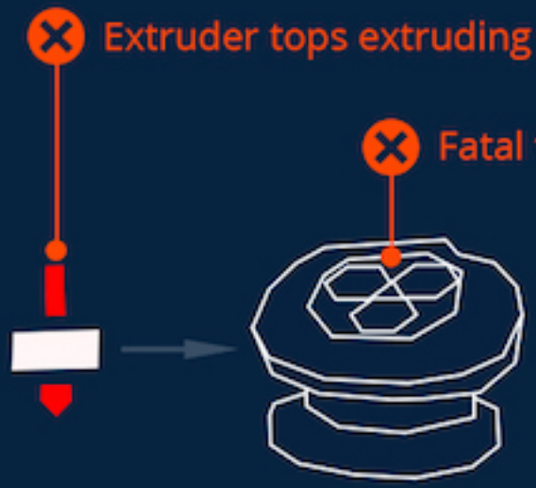
Filament jammed / clogged in Spool Holder

Extruder tops extruding filament

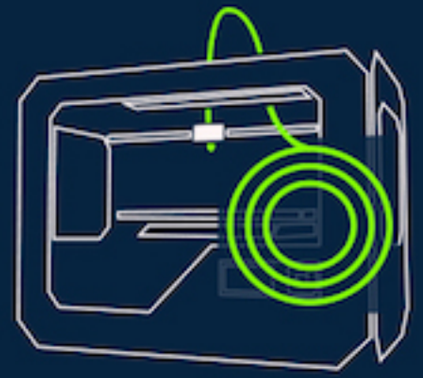
Fatal to the printing

1





SOLUTION:
Keep watching and loosing the filament when printing

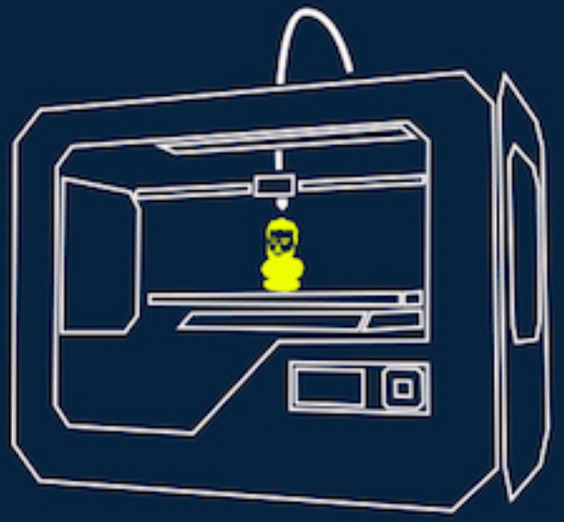


2.5 3D Printing Process Lessons
(Two Major Issues of 3D Printing)

3D Printer
MakerBot
Replicator 2

2

⚠ Too many overlappings inside the model

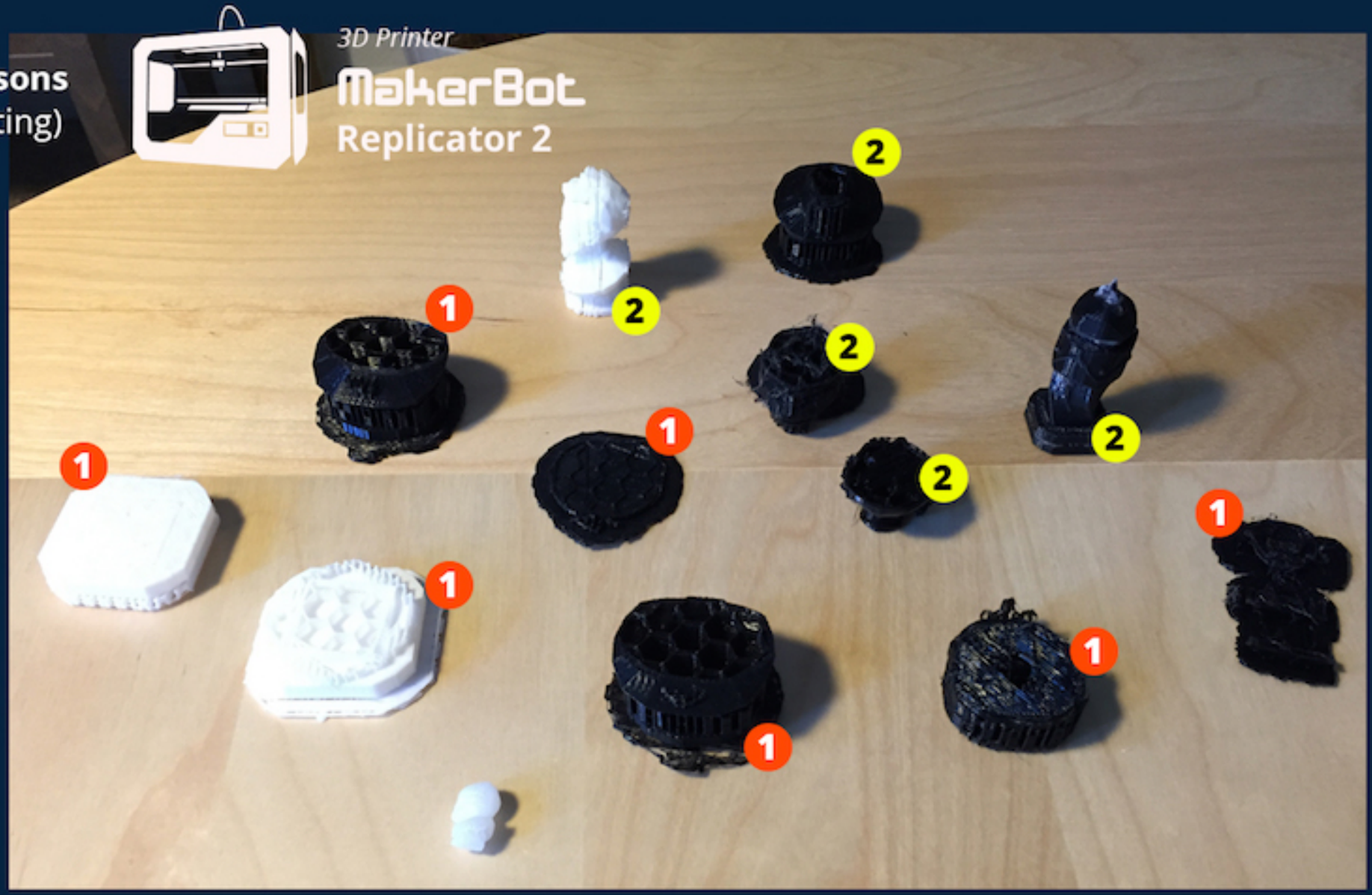


⚠ Printer can NOT process the complex inner part of the model

⚠ "Scars" on the printed model, or model breaks

SOLUTION:
Keep the model created in one single piece and simple

2.5 3D Printing Process Lessons
(Two Major Issues of 3D Printing)



3 Extension Designs

3.1 Monopoly Graphic Design

3.2 Architectures 3D Modelings

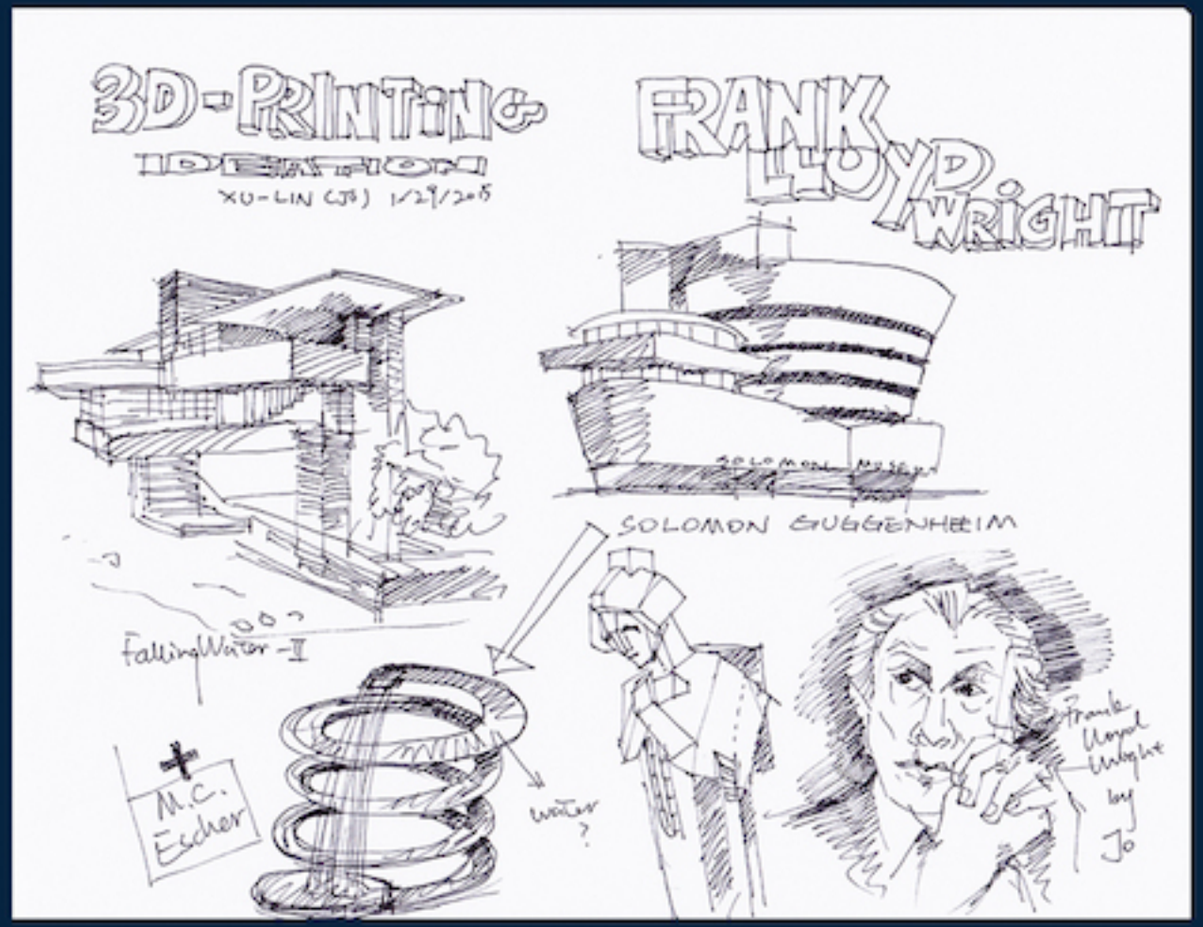
3.1 Monopoly Graphic Design

Package | Branding Design

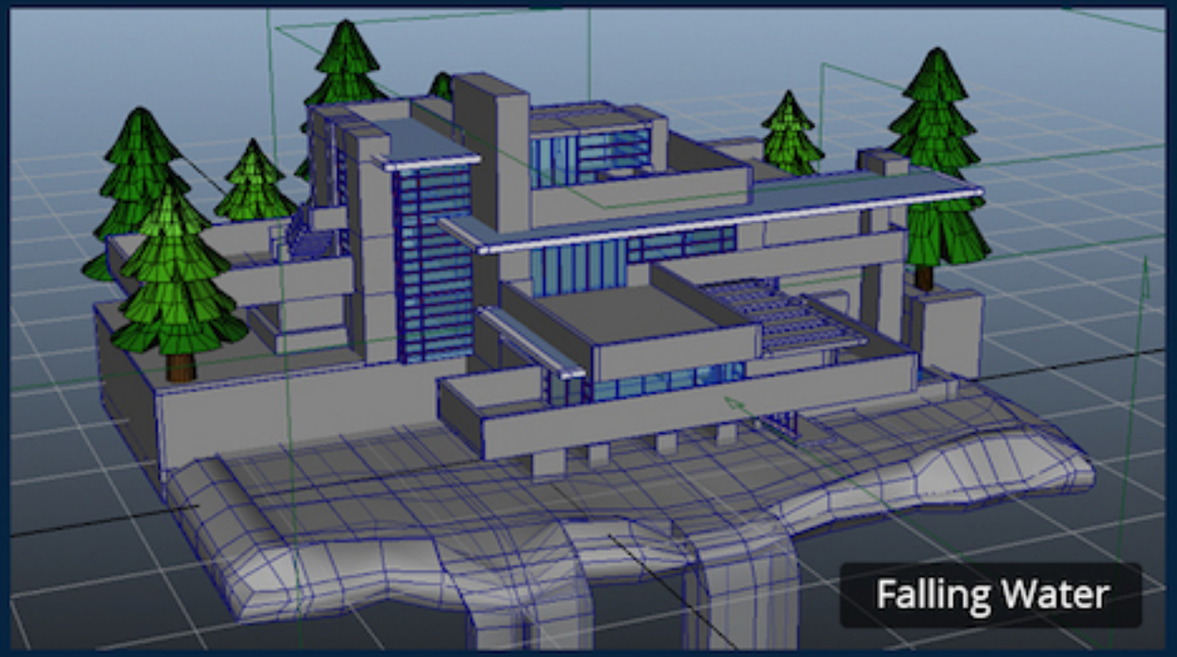
3.1 Monopoly Graphic Design

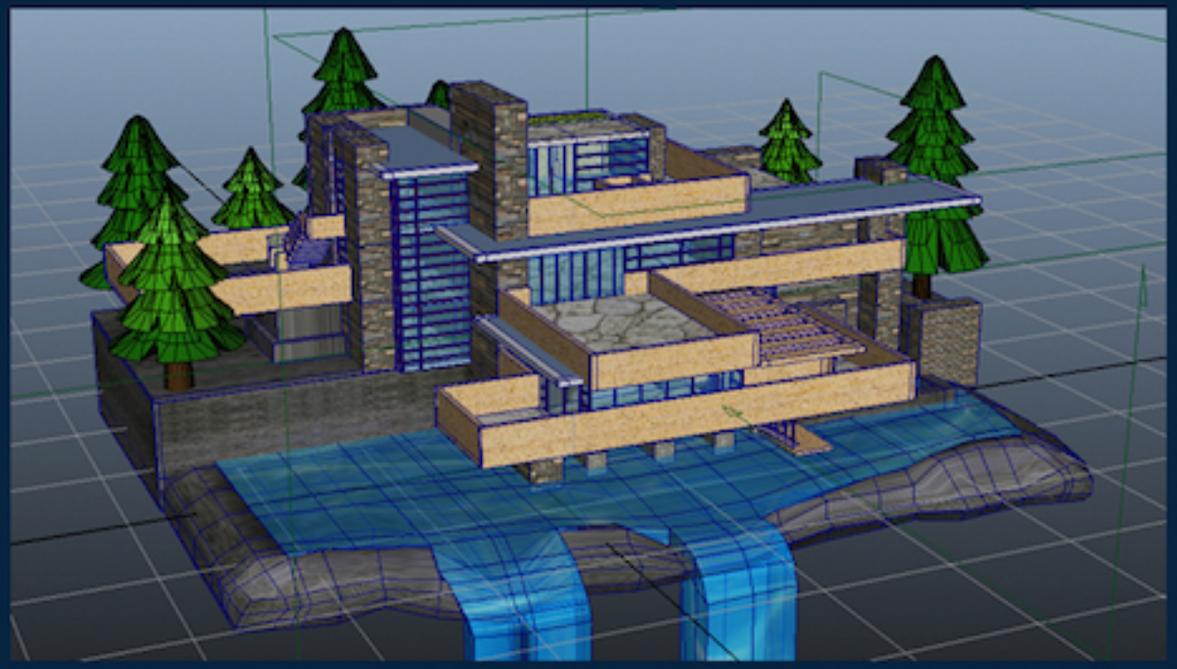
Asset Cards Design

3.2 Architectures 3D Modelings

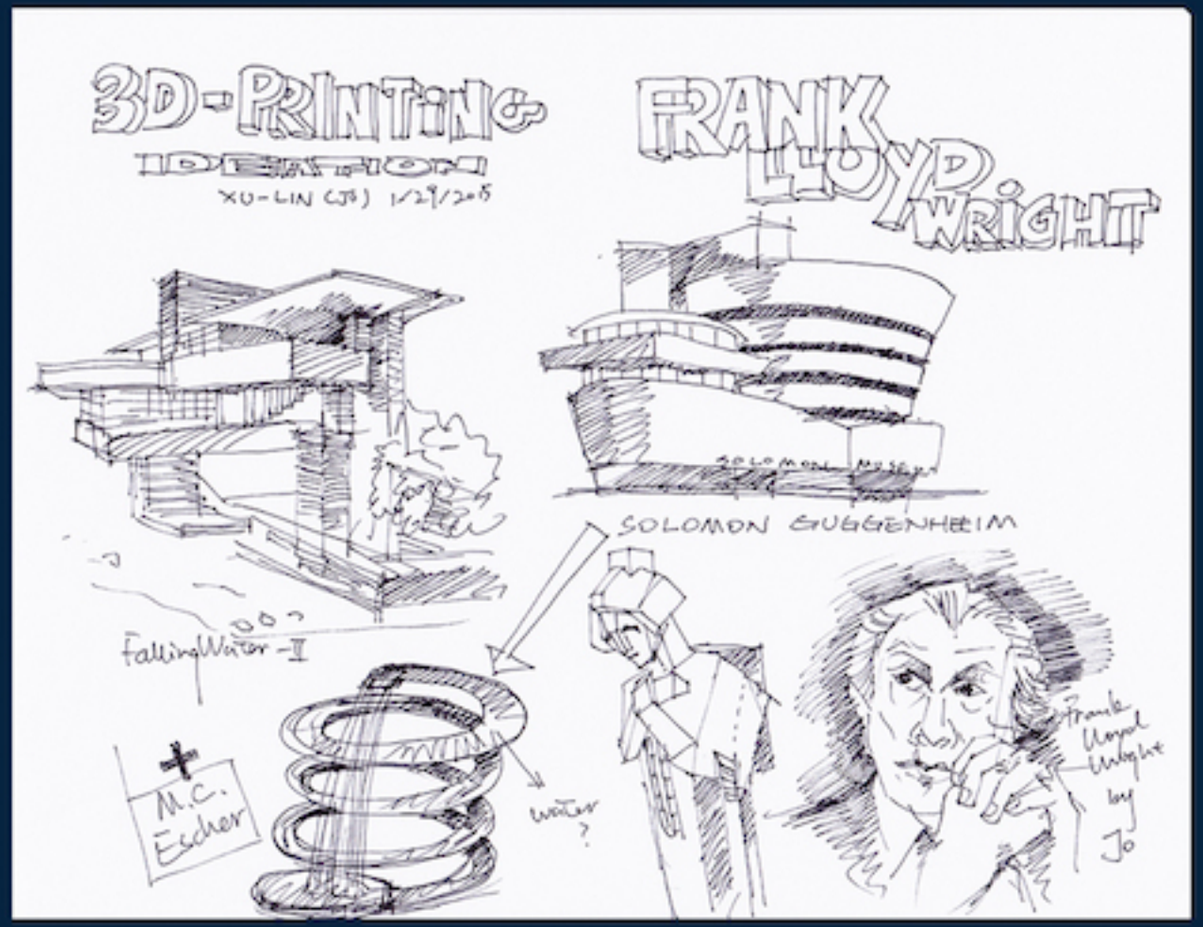


Sketches of Architectures

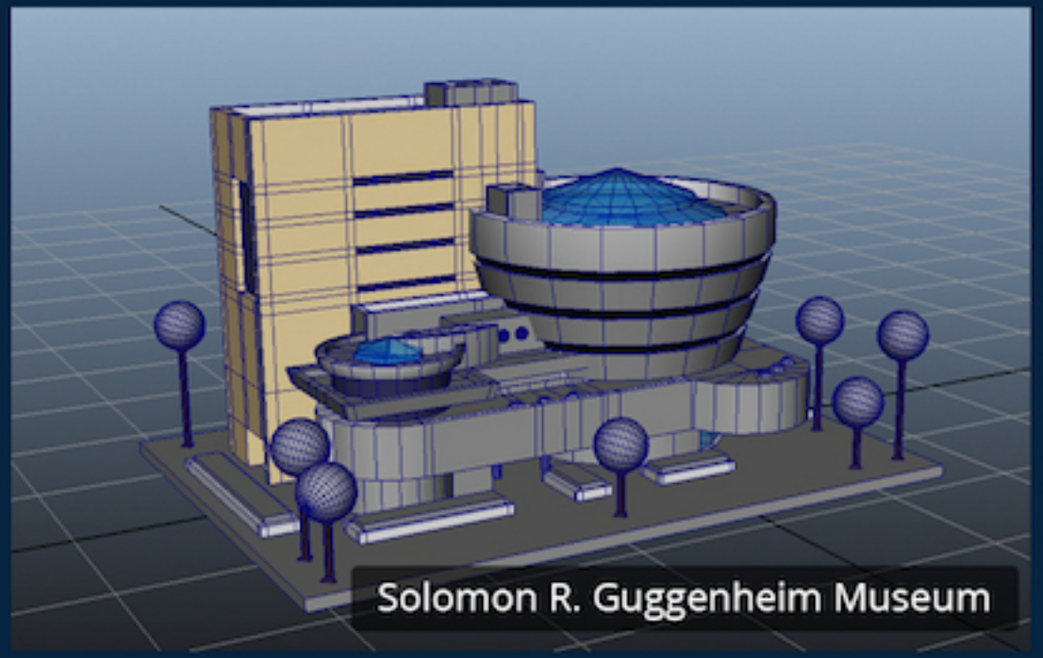


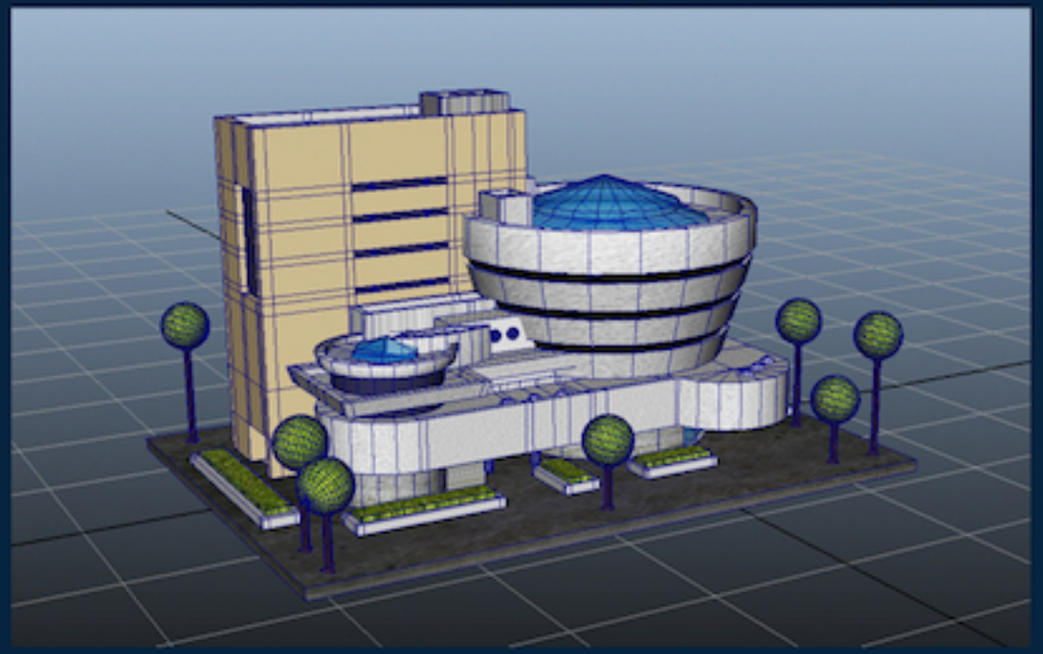


3.2 Architectures 3D Modelings



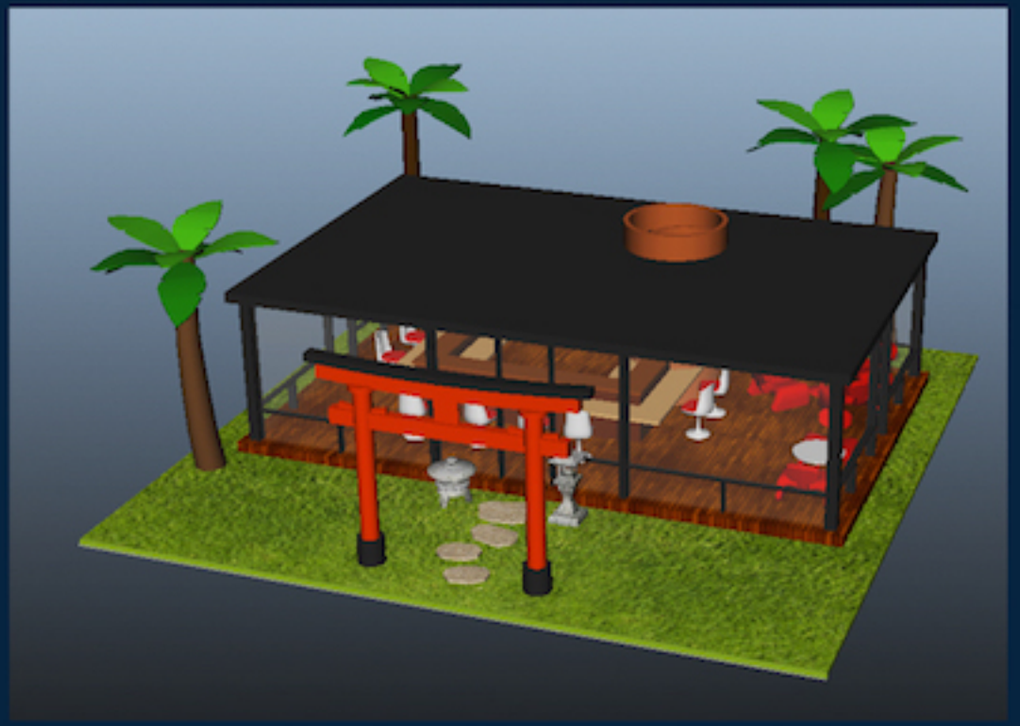
Sketches of Architectures





Reuse

Jiro Dreams of Sushi
Created by Jo
12/2014



Glass House
(Jiro and Sushi Bar Removed, Torri gate kept as an in-game purchased item, LOL)

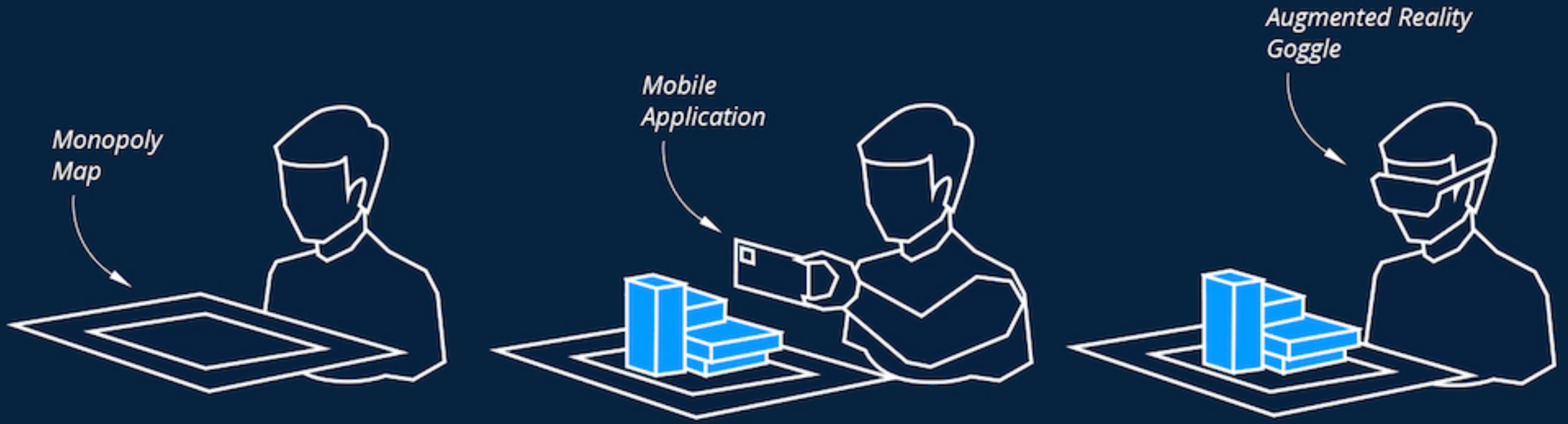
One More Thing

4 Augmented Reality

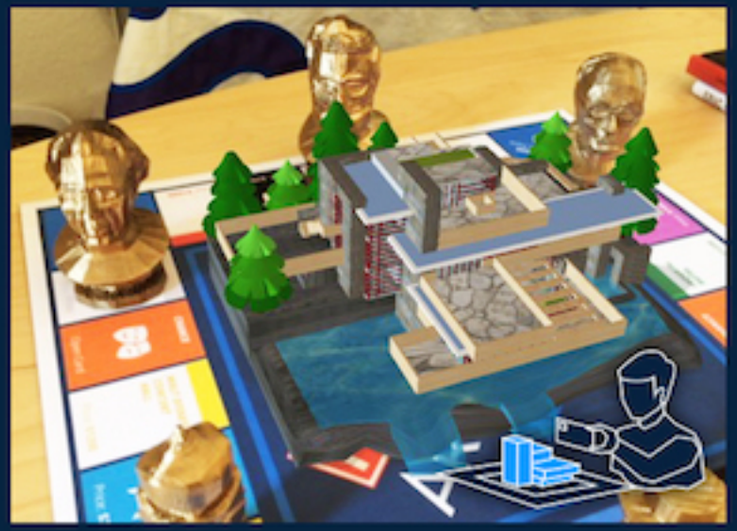
4.1 Introducing Augmented Reality

4.2 Screenshots of Monopoly In AR

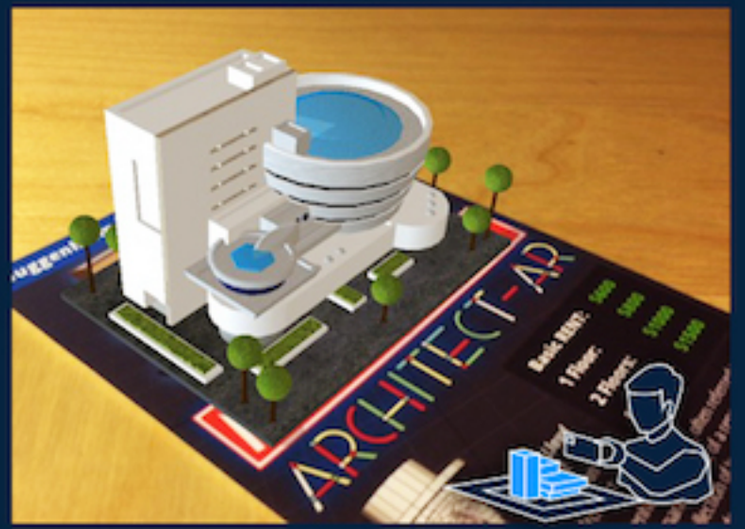
4.1 Introducing Augmented Reality



4.2 Screenshots of Monopoly in Augmented Reality - MAP



4.2 Screenshots of Monopoly in Augmented Reality - ASSET CARDS



Thank You!

谢谢！

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Xu Lin (Jo) - 5/06/2015

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