# Coding Without Sight: 3D Models Aiding the Visually Impaired

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## Motivation

- Coding teaches important skills and opens doors in many fields.
- Lack of visually impaired (VI) people in coding results in less tools curated for them.
- Limited amount of tools for the visually impaired (VI) people to learn coding
  - Available tools are expensive.
- DODO is a platform that teaches coding through physical blocks and AI object detection.

## Objective

Modify DODO blocks to represent key code characteristics and 3D model the blocks.

## Process

**Research:**

Research struggles of the VI in learning science, technology, engineering, art and mathematics (STEAM). As well as the importance of this project.



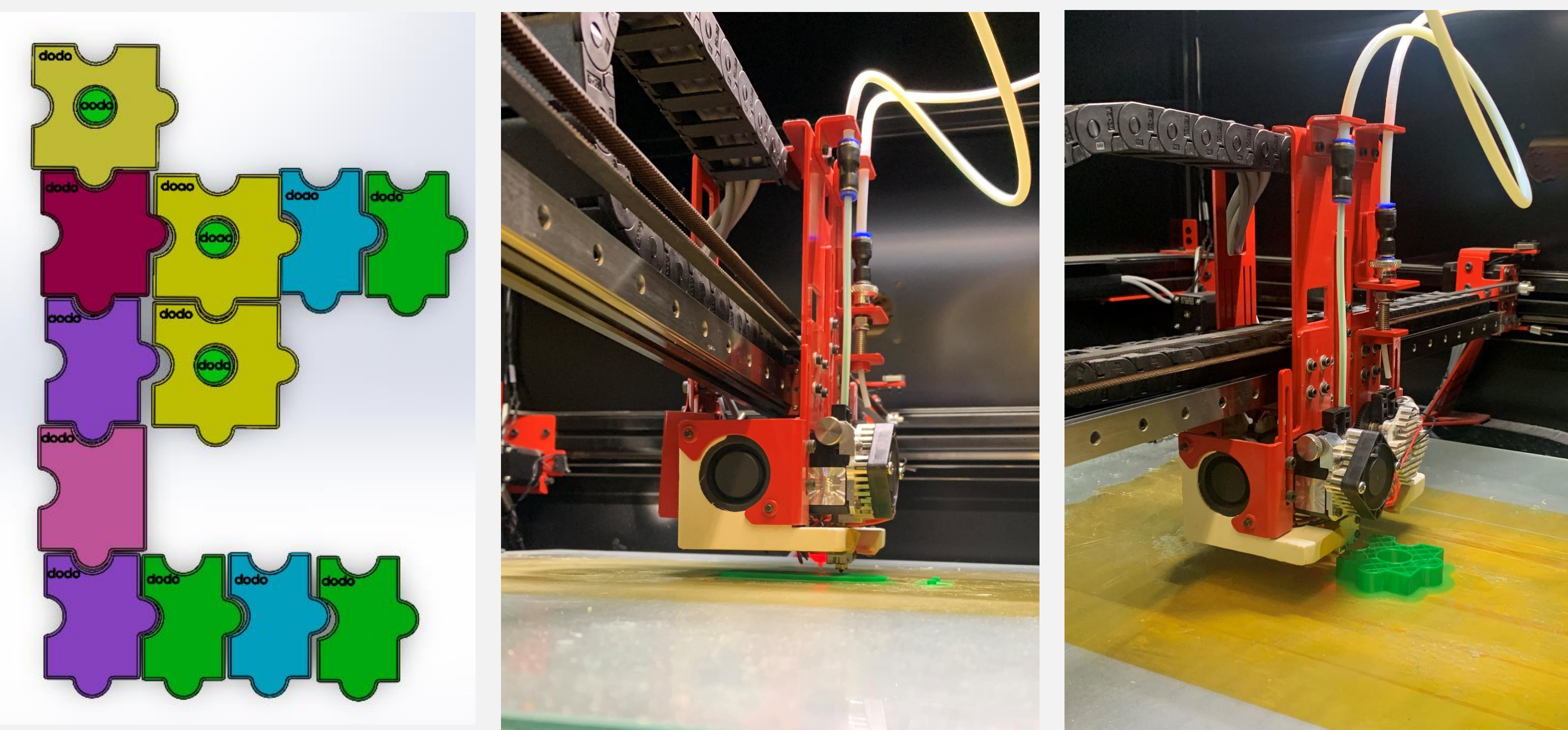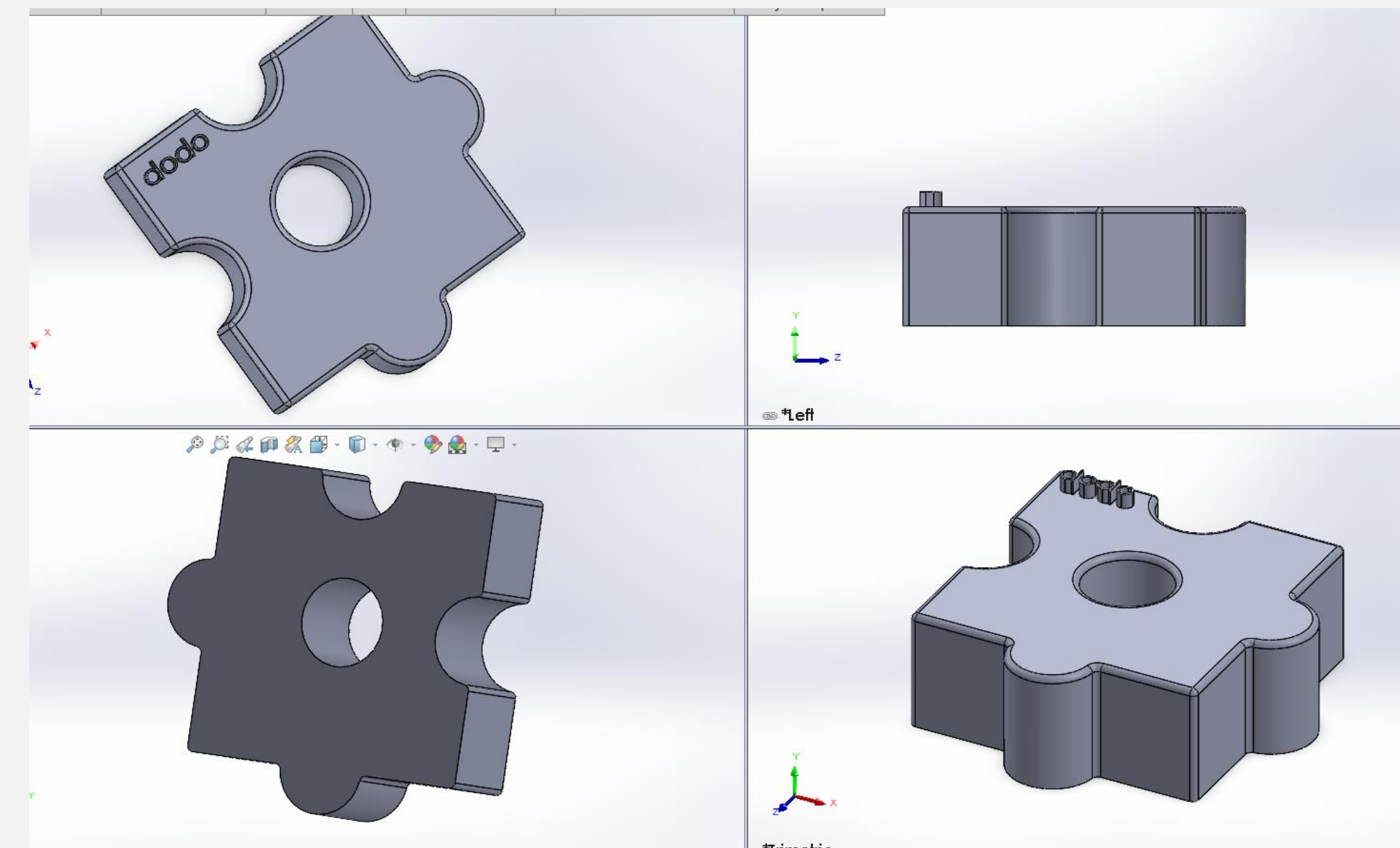Original DODO paper models

## Idea Generation:



**puzzle**

- print
- if/elif/while
- else
- operator
- variable
- value

**blocks**
- line break

**code structure**

```
var = 3
if var == 3
*break
print var
else
print 3+3

prints 3
```

Propose and plan out idea using Miro.

### Modeling:

Design models in SolidWorks and print on Modix BIG-60 V2/V3. Modify as necessary.





## Final Product: Printed 3D models.



## Future Research

- Print primarily with recycled filament
- Experiment with texture and shapes on top
- Test blocks with DODO software

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