

EE-200 Soph Design Studio

COIN SORTER

Group name; TBD

{will finalize after}
next class

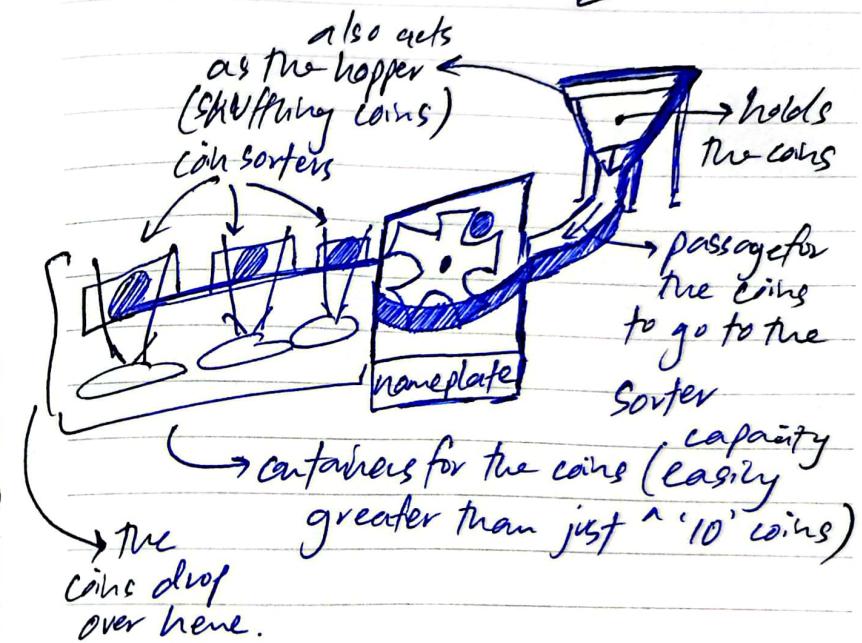
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Meeting #1 ; 6th September 24

- Searched up multiple ~~ideas~~ ideas for the coin sorter + hopper mechanism
- downloaded Solidworks on each of our laptops to begin with the CAD designs.

→ decided on a design that looks somewhat similar to this ↗



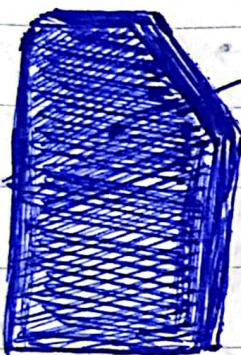
→ basically different spacings would allow coins of different sizes to fall into their respective categories/holes.

→ The hopper will be at a height greater than the actual sorter.

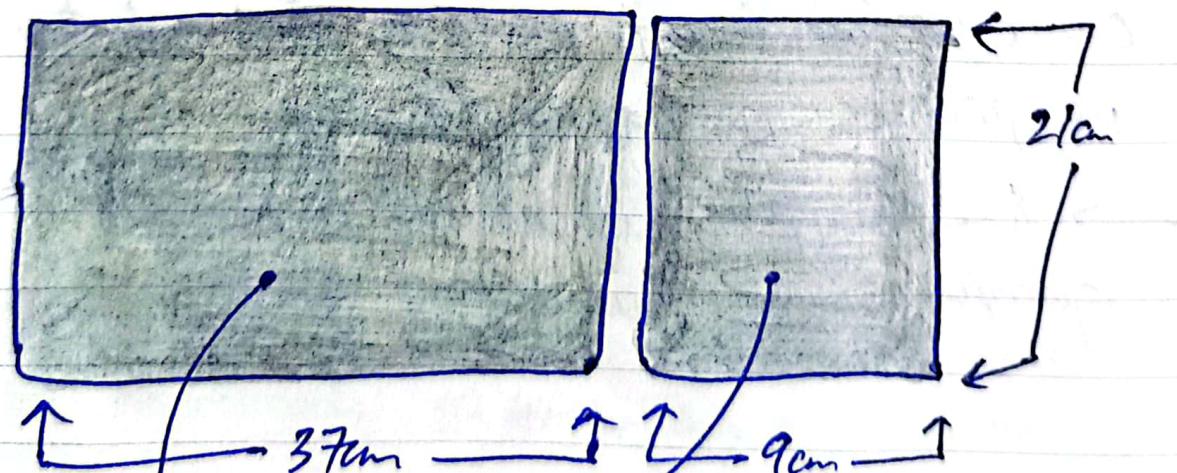
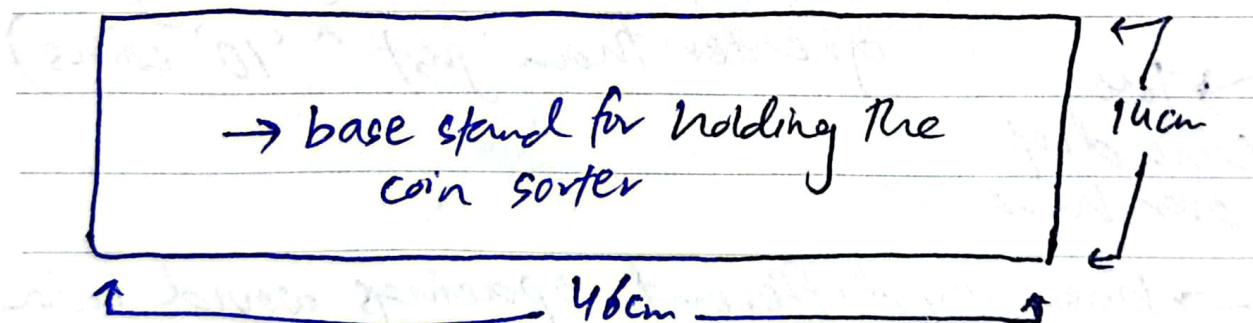
Entry #2

→ complete design flow ;

↳ the base for coin collection



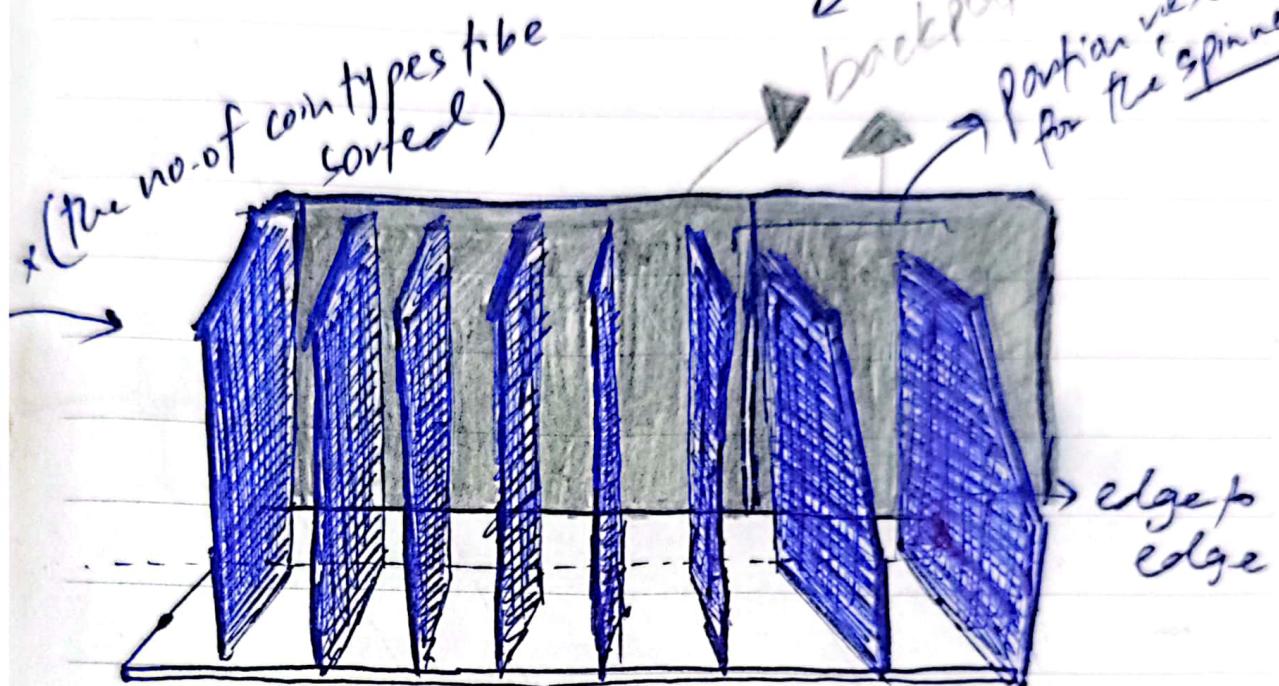
→ sections for the different
coin types to be sorted,
(need to decide on how many,)
dimensions unknown atm



the back
of the
machine

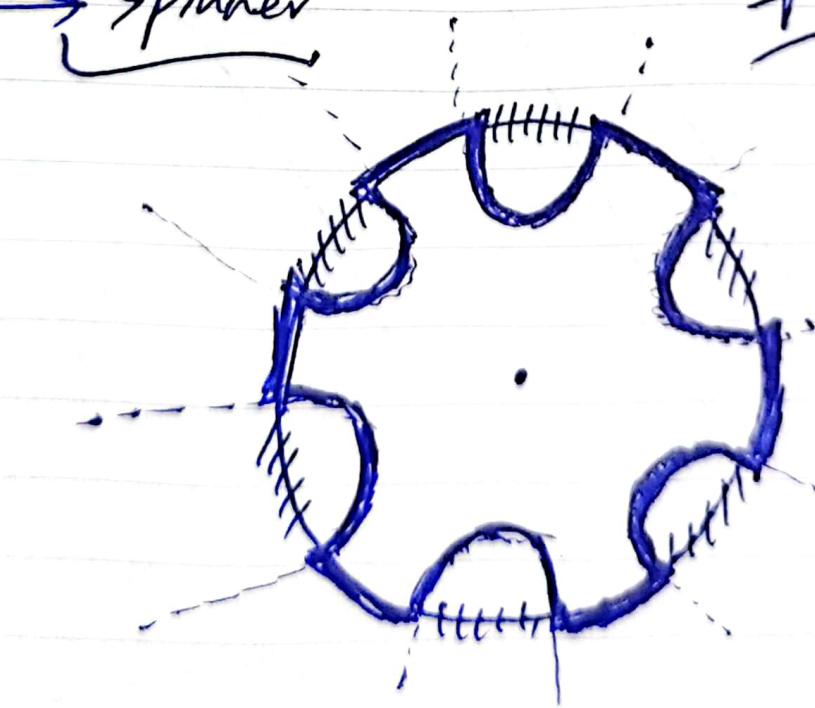
referred to as
backplates

Final look of base structure ↗



→ will probably have to use carriers to screen in these 'shelves'

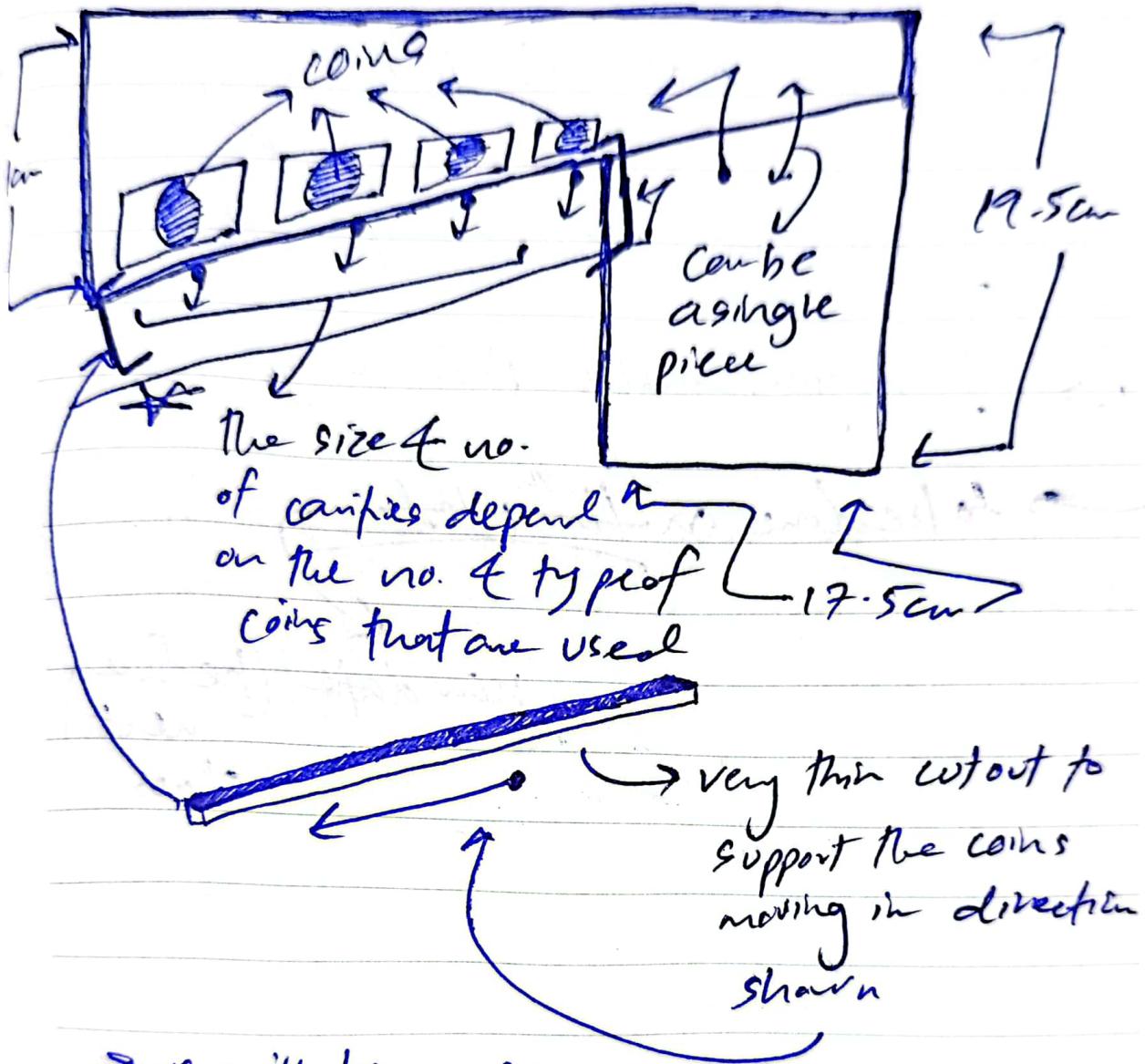
② → Spinner



→ will have to make a circuit for the spinner to control its speed

probably a potentiometer & motor circuit

③ Sorter front plate



→ we will be needing
two circuits

Spinner

→ one for the hopper
that will vibrate to
ensure that the coins
fall into the spinner

a single motor
control circuit which would
allow for the speed control of the motor of the spinner.

Circuit 1

→ Spinners motor Controller:

→ Simulate chosen circuit on Proteus

→ Begin/Riskable PCB design

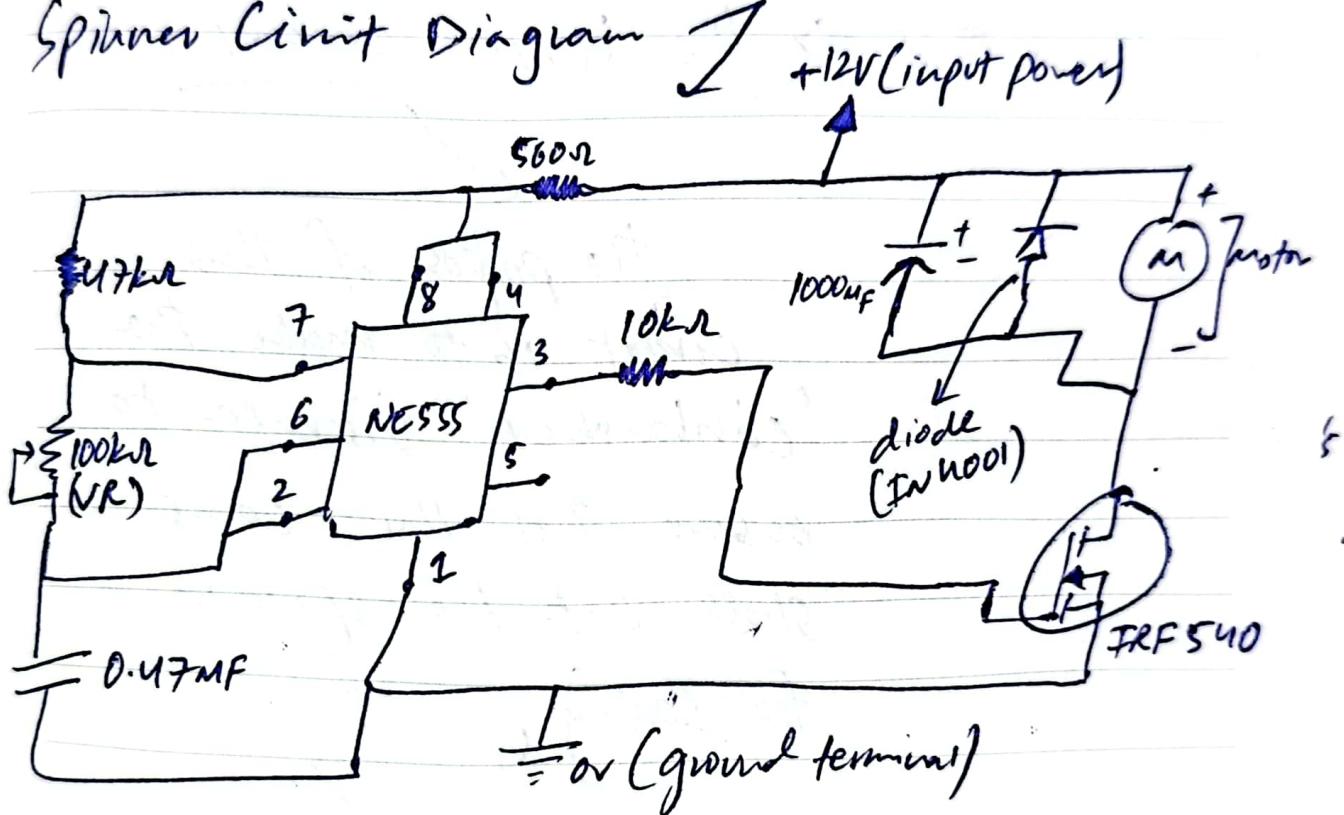
→ to be done on 18th wed

new date: (before)
next
class

Entry #3;

→ Completely simulated the spinner circuit on Proteus simulation software

Spinner Circuit Diagram



The timer IC NE555 generates pulses whose width is then controlled by (VR) or the variable resistor. The pulse's modulated width (Pwm) signal gets to the motor (1), which begins to rotate with speed control. This circuit will allow for controlling the speed of the spinner as to increase/decrease the speed at which the coins gets sorted.

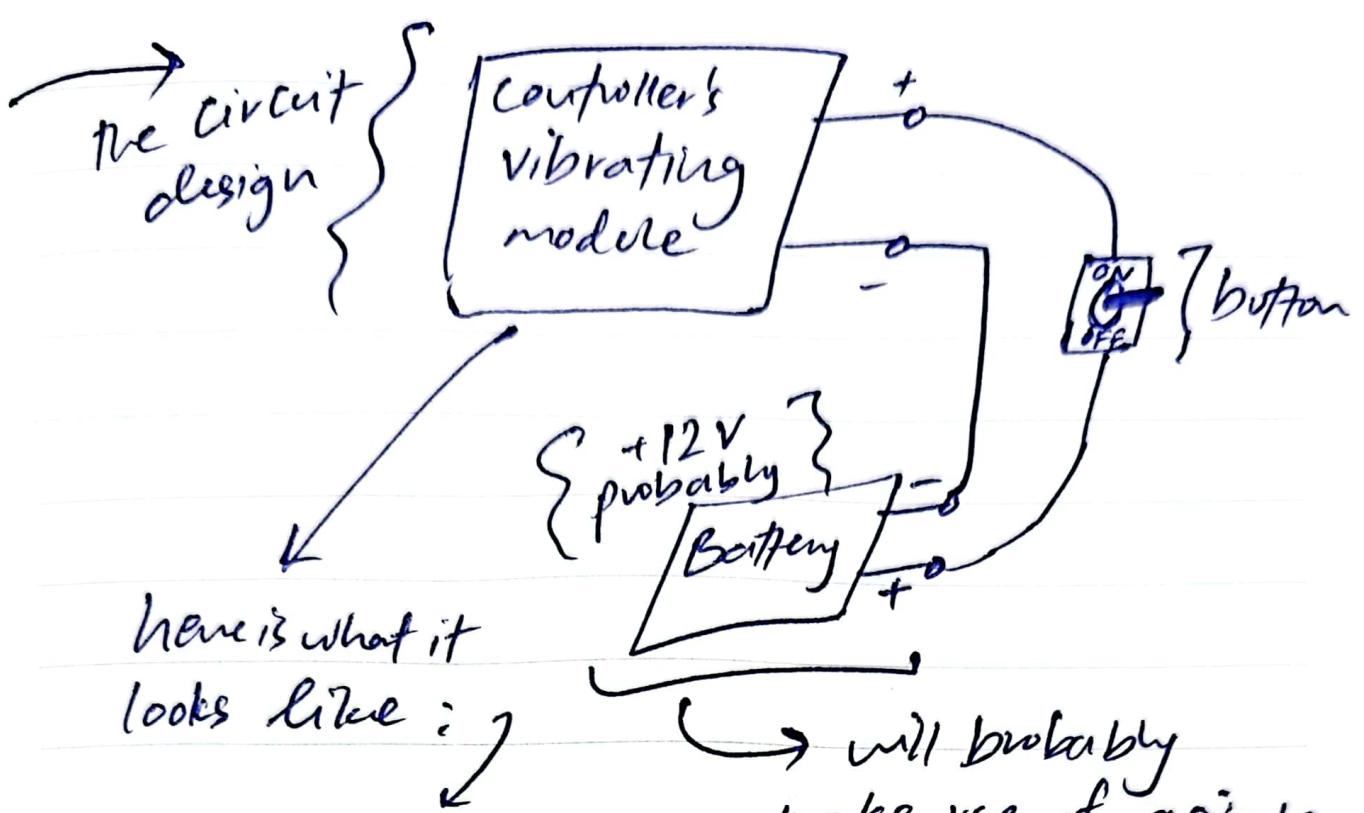
~~construct~~
I have to simulate this circuit on a breadboard before moving on to the final PCB design.

Circuit #2 \Rightarrow the hopper circuit

the purpose of this circuit is to make the 'coinbasket' vibrate to ensure that the coins slide onto the spinner for sorting.

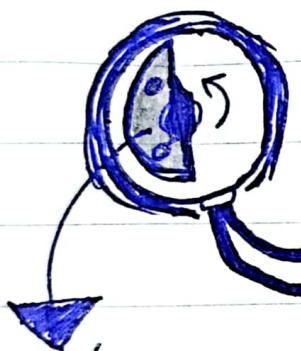
a really basic circuit

I found an old controller (broken) & salvaged its vibrating module for this purpose.



{ probably +12V }
Battery

will probably make use of a single battery for the spinner's circuit and trips one.



{ length of the wires were a little short (difficult to basically a hammer deal with relatively) connected to a dc motor that hits its surroundings to cause vibrations.

{ have to test the copper circuit as well }