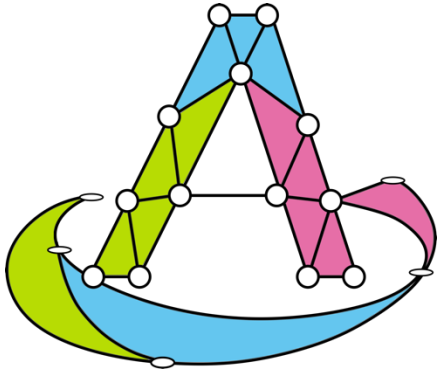
Reserch Progress

Meeting on November 5

Takumi Shiota.

November · 5, 2024

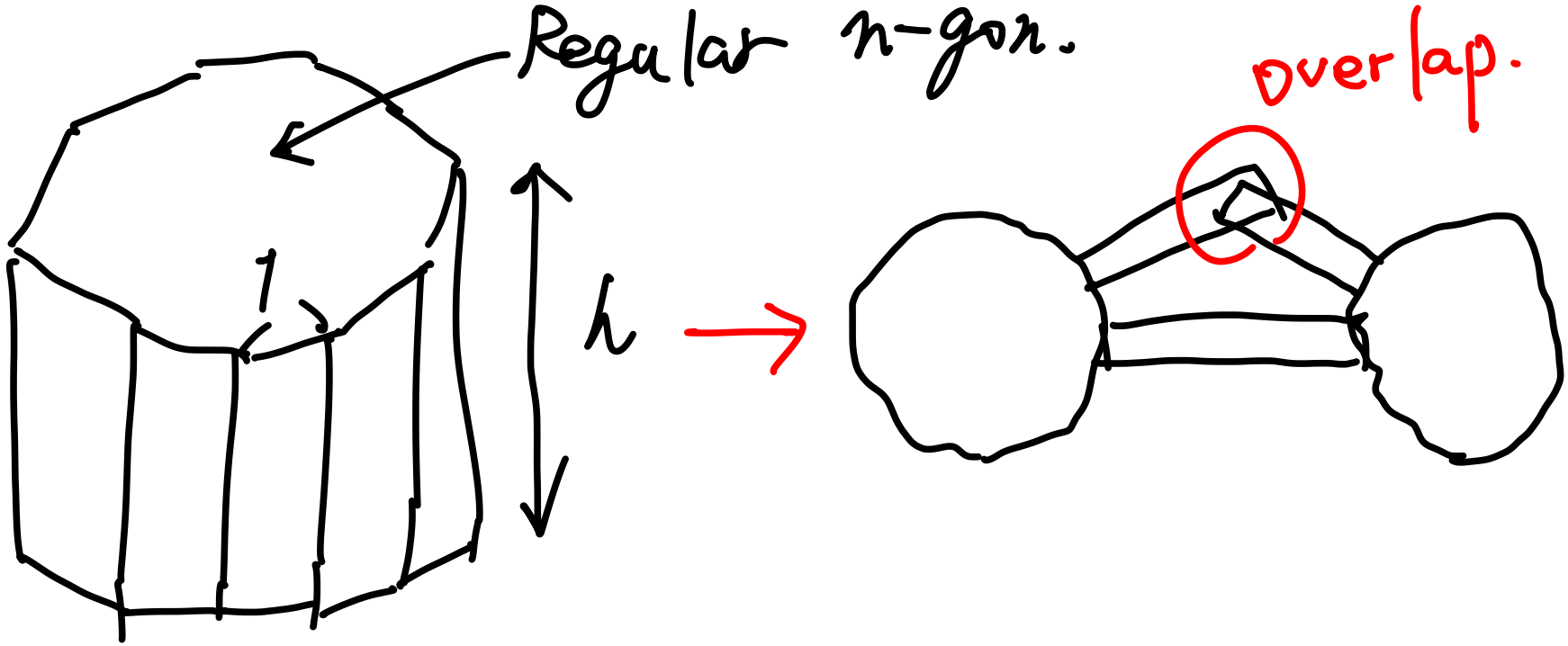
@NUS



Problem setting.

Problem

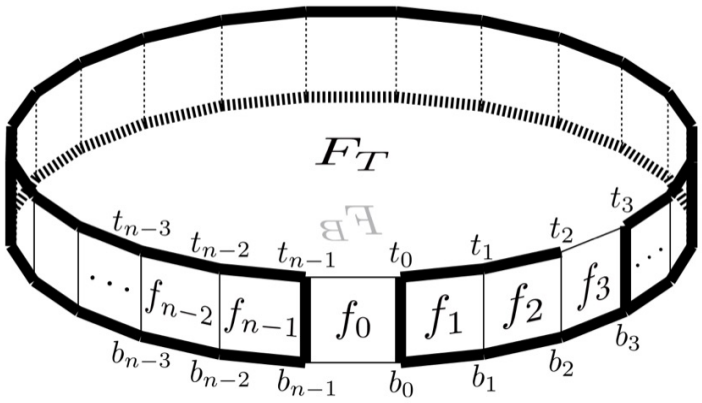
Let's consider an n-gonal prism of hight h. For which value of n & h does the prism have overlapping edge unfolding?

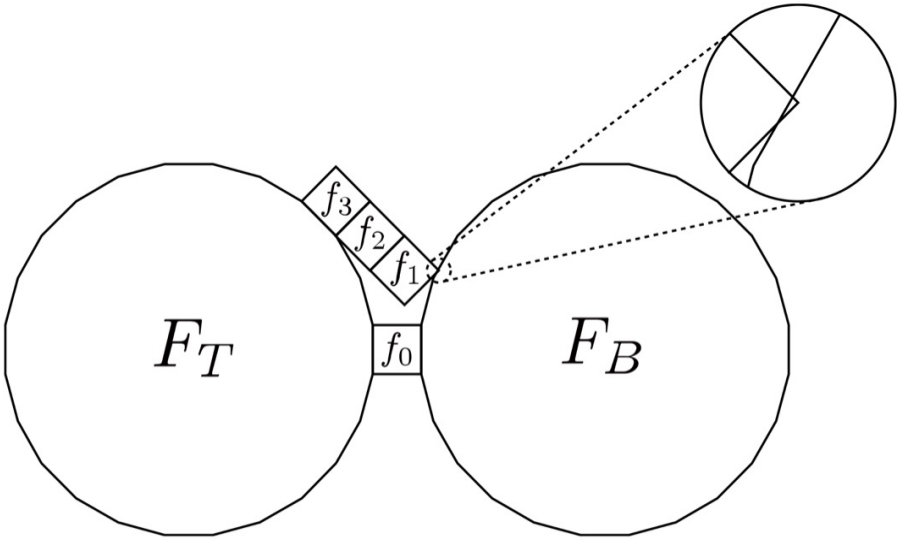


Background of this study

[T. Shiota and T. Saitoh, 2024]

If $h=1$ and $n \geq 24$, then n-gonal prism have overlapping edge unfolding.

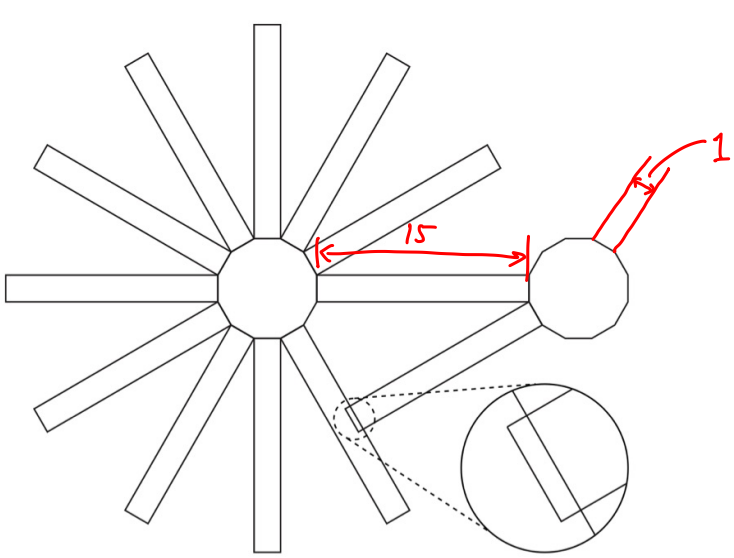




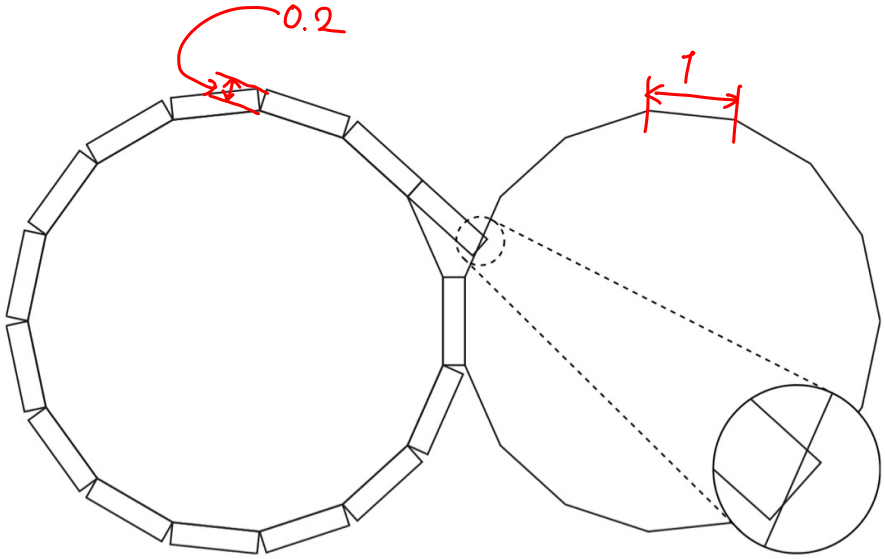
Question. How about $h \neq 1$?

Background of this study

[Schlickenrieder, 1997]



(a) 12-gonal prism



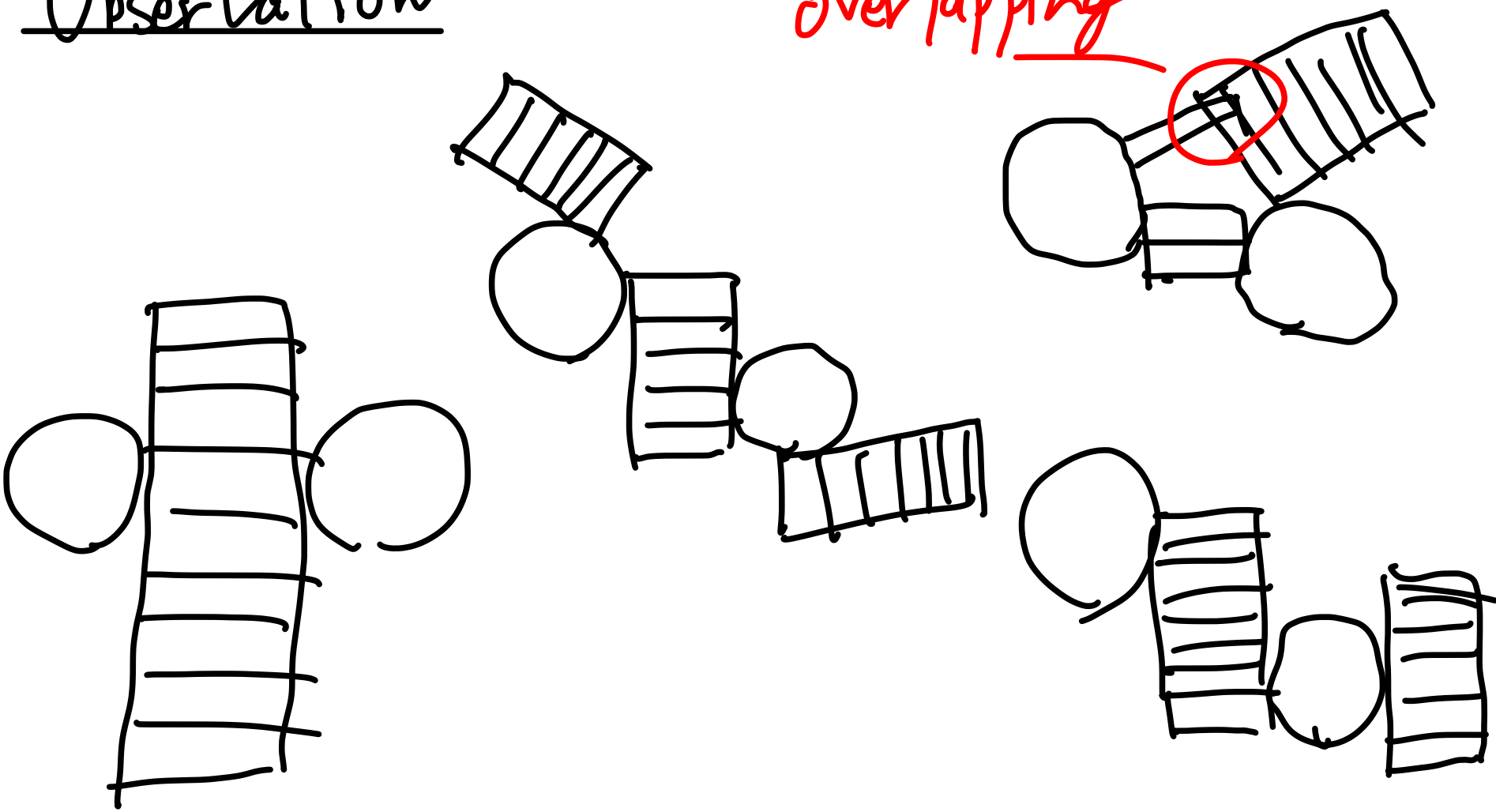
(b) 15-gonal prism

If $n \leq 24$, prism have overlapping edge unfolding.

Meeting with Tonan & Ryuhei last week.

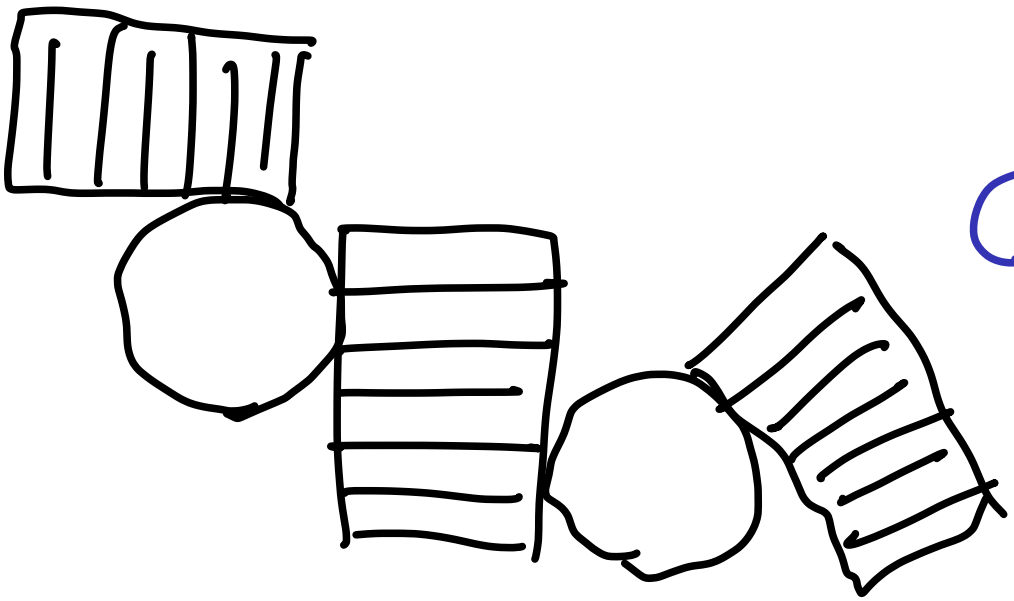
Observation

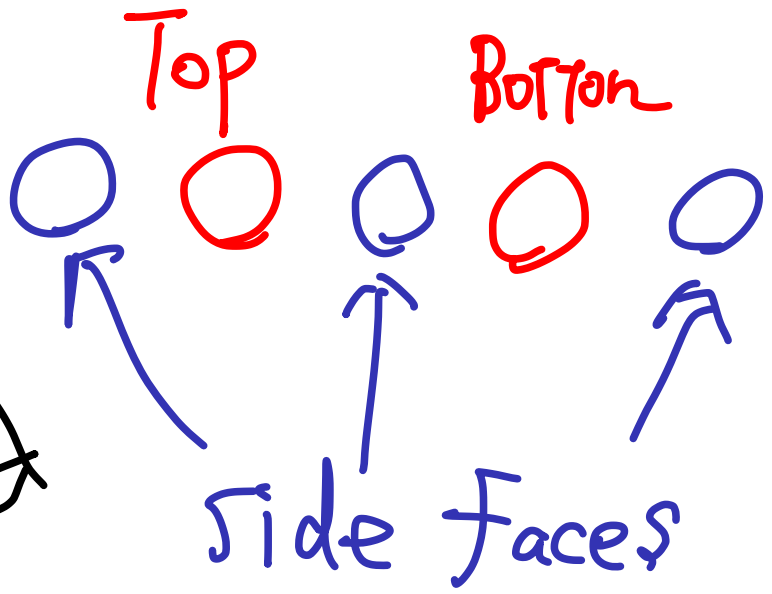
overlapping



Meeting with Tonan & Ryuhei last week.

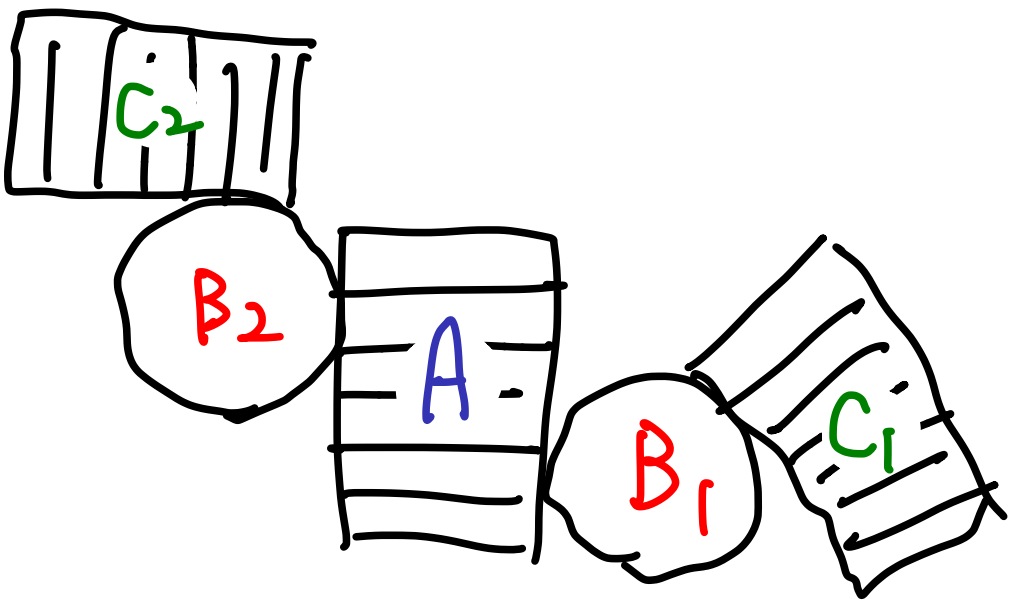
We can only consider the following type.





Meeting with Tonan & Ryuhei last week.

We can only consider the following type.

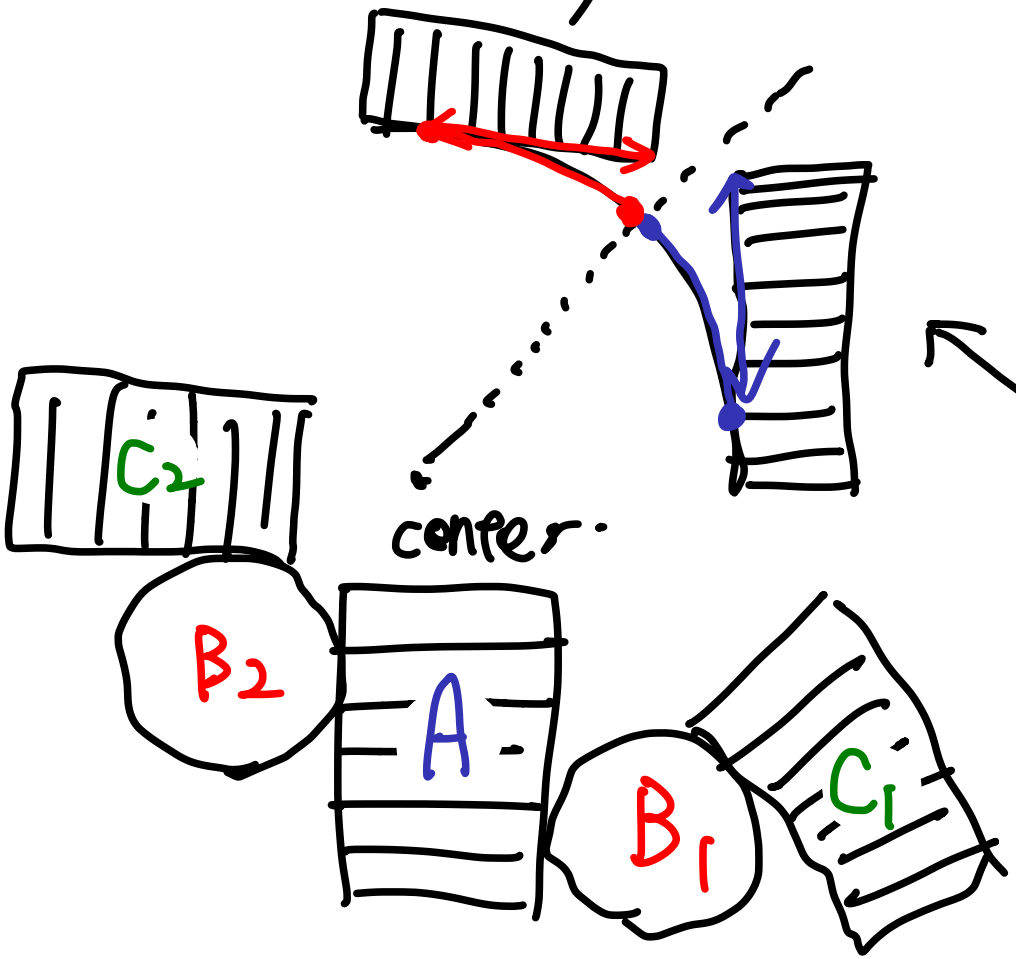


We only check the overlap.:

1. $A \leftrightarrow C_1$
2. $C_1 \leftrightarrow B_2$
3. $C_1 \leftrightarrow C_2$

Meeting with Tonan & Ryuhei last week.

We can only consider the following type.



We only check the overlap.:

1. ~~$A \Leftrightarrow C_1$~~
2. $C_1 \leftrightarrow B_2$
3. $C_1 \leftrightarrow C_2$

Note