



## Logistics

- ↳ Live
- ↳ Assign + HW (Dashboard) TA Help / Slack
- ↳ Notes PDF (Recorded Videos + Notes Dashboard)
- ↳ Mentor

## Puzzle-1

Identical



2 Gold

2 headache

Morning -  $1C + 1H$   
Evening -  $1C + 1H$





$\Rightarrow$

$$\frac{1}{2}C + \frac{1}{2}H + \frac{1}{2}H + \frac{1}{2}C \quad \begin{matrix} 1C \\ 1H \end{matrix}$$

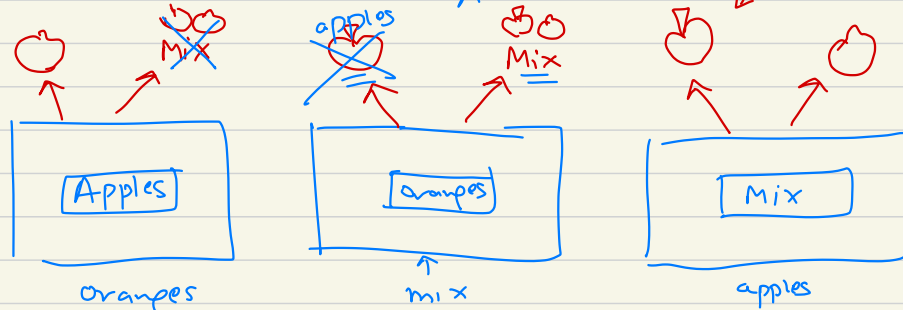
## Puzzle-2

### Fruits Puzzle

You are given 3 boxes of fruits


- - Apples 
- - Oranges 
- - Mix of Apples and Oranges  

Labels on the boxes are completely shuffled (incorrect). If the label says Apples  
Then the box doesn't contain <sup>only</sup> apples.



You can't look inside the box, but you can draw only fruit from any 1 box and goal is to identify what box contains what?

[Apples]  $\Rightarrow$  orange X no idea!

[oranges]  $\Rightarrow$   X no idea!

Soln.

Mix

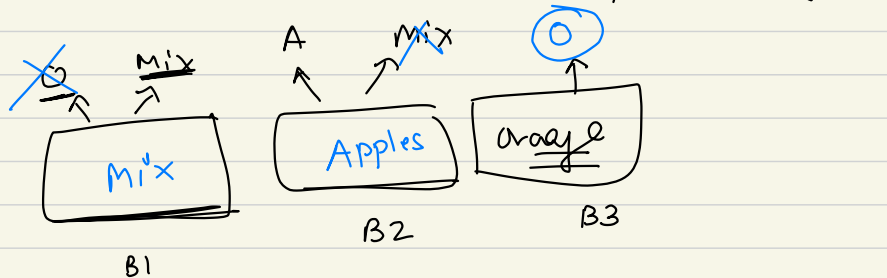
if ( fruit  $\rightarrow$  Apple )

Oranges  
B1

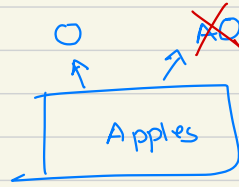
mix  
B2

apples  
B3

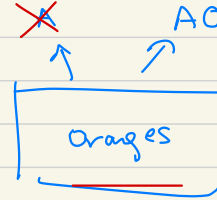
else



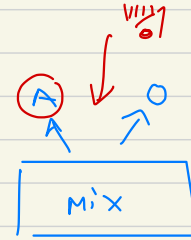
Repeat



O  
(Oranges)

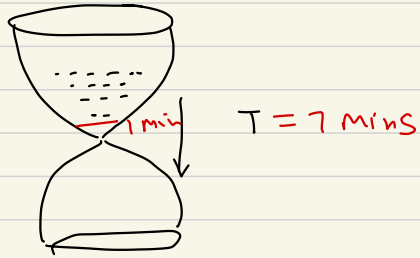


AO  
(Mix)



Apples

### Puzzle-3 Hour Glass Puzzle



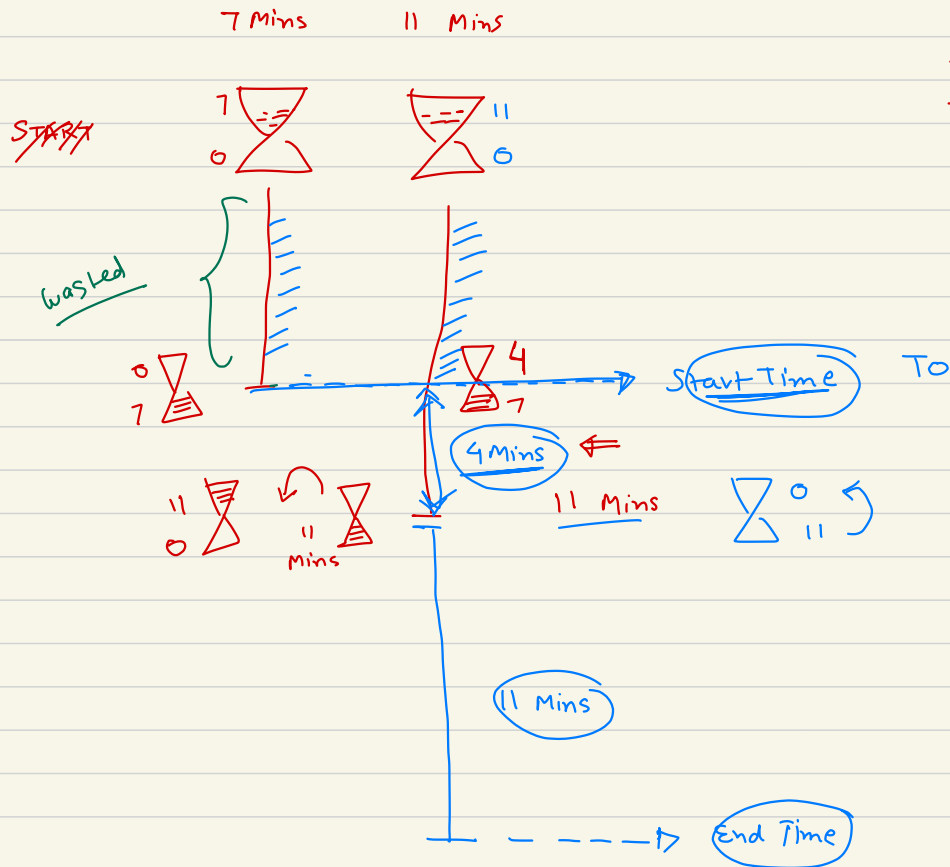
Given: 2 Hour glasses  
↳ Measure 7 mins  
↳ Measure 11 mins

Goal: Measure 15 mins.



⇒ Strategy: (ALGORITHM) List of steps!

$$\begin{aligned} 11 + 4 &= 15 \\ 11 + 11 - 7 &= 15 \end{aligned}$$



$$\begin{aligned} \text{Total time} &= \text{wasted 7 mins} + \text{15 mins} \\ &= \underline{\underline{22 \text{ mins}}} \end{aligned}$$

$$\begin{aligned} 4 + 11 &= 15 \text{ mins} \end{aligned}$$

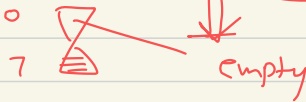
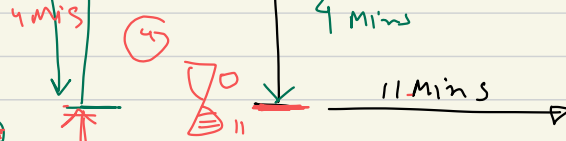
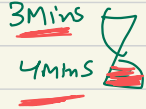
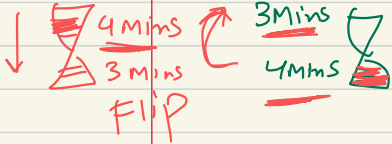
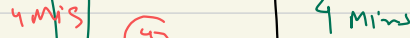
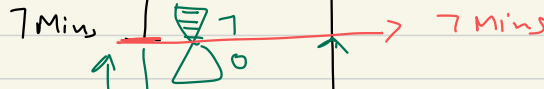
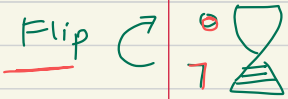
# Optimised Approach

Another  
TRY!



Start

15 mins total



11 mins

+

4 mins

= 15 mins

$$7 + 4 + 4 = 15$$

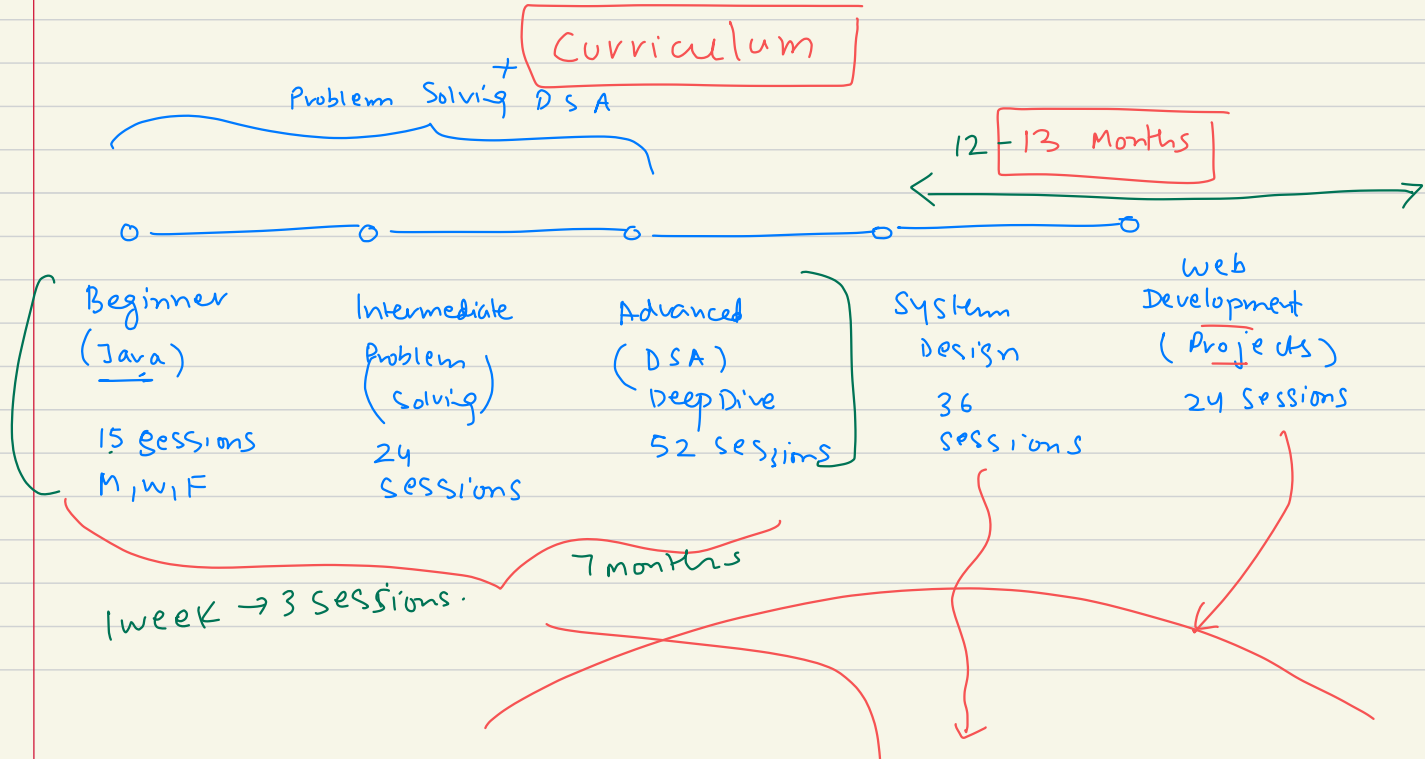
$$11 + 4 = 15$$

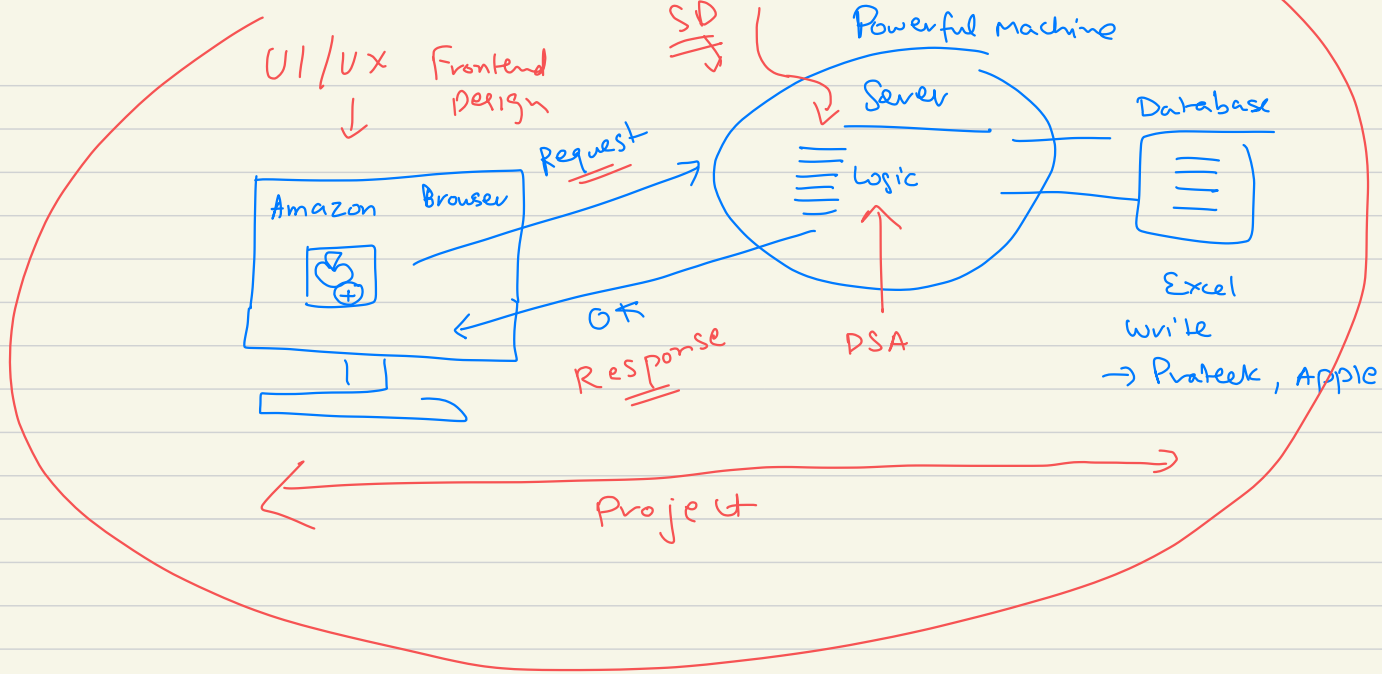


# HOME WORK

(No submission reqd)

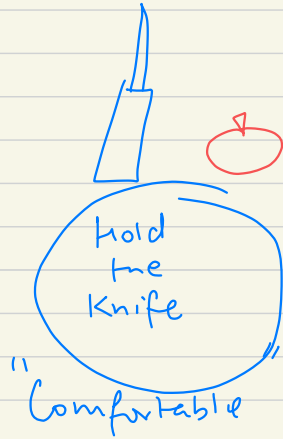
- Puzzle: Given two hourglass of 4 minutes and 7 minutes, the task is to measure 9 minutes.



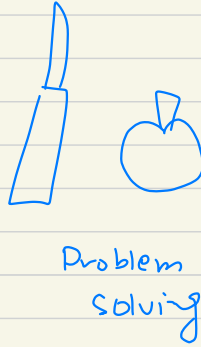


Programming → Tool

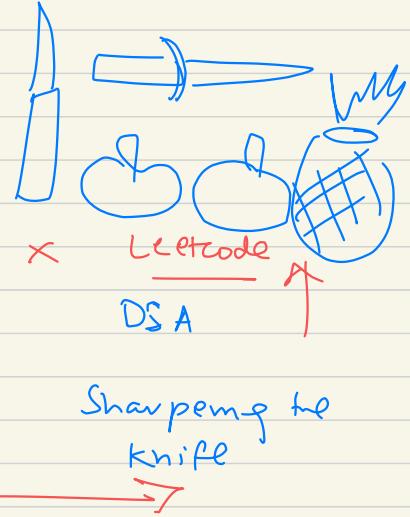
Beginner



Intermediate



Advanced



LO : Done

- L1 : Basics (Operators/ Print/ Datatypes)
- L2 : Conditionals (If-else)
- L3: Scoping/ Nested If Else/ Input Output
- L4: Looping
- L5: Pattern Printing
- L6: Pattern Printing
- L7 : Functions
- L8-11: Arrays, 2D Arrays, Arraylists
- L12-13 : Strings
- L14 - 15 : OOPS Basics & Memory Management

◦ [Head First Java]

Supplementary Reading Material  
(Optional)