COMP2511

WEEK 10

Did you get much sleep?

ADMIN STUFF

- If you did assignment-iii, please make sure you submit it following the instructions in the spec.
  - Include video that is public. We will not be chasing this up since marking will happen during week 11/12

A G E N D A

- myExperience
- Builder Pattern
- Special Surprise

MYEXPERIENCE

Please complete your myExperience survey of your experience of me!

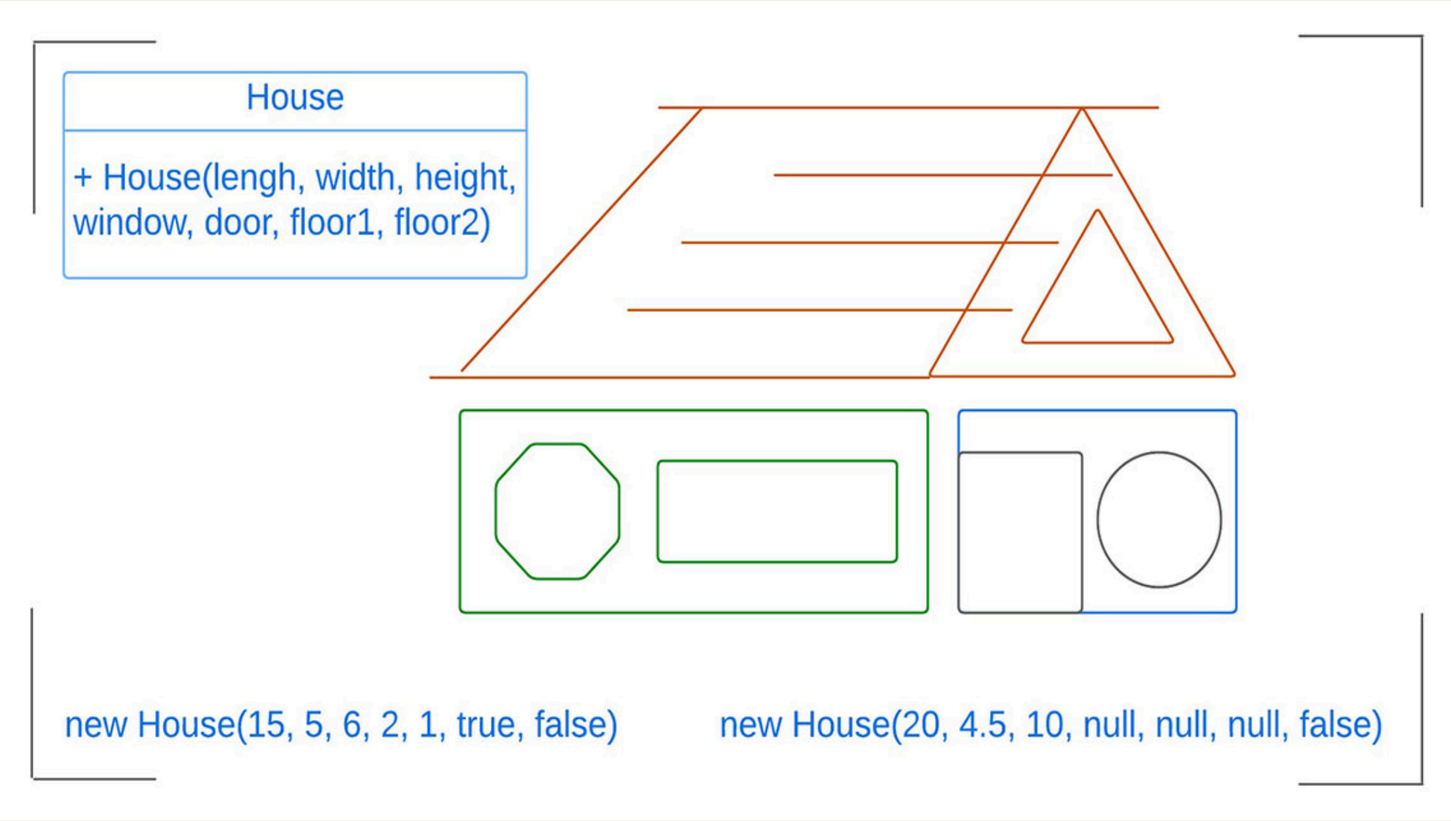
It will greatly help me improve for whatever I am teaching in the future but also help the course improve for future iterations.

All constructive feedback is welcome. I would like to become a better tutor for future students!

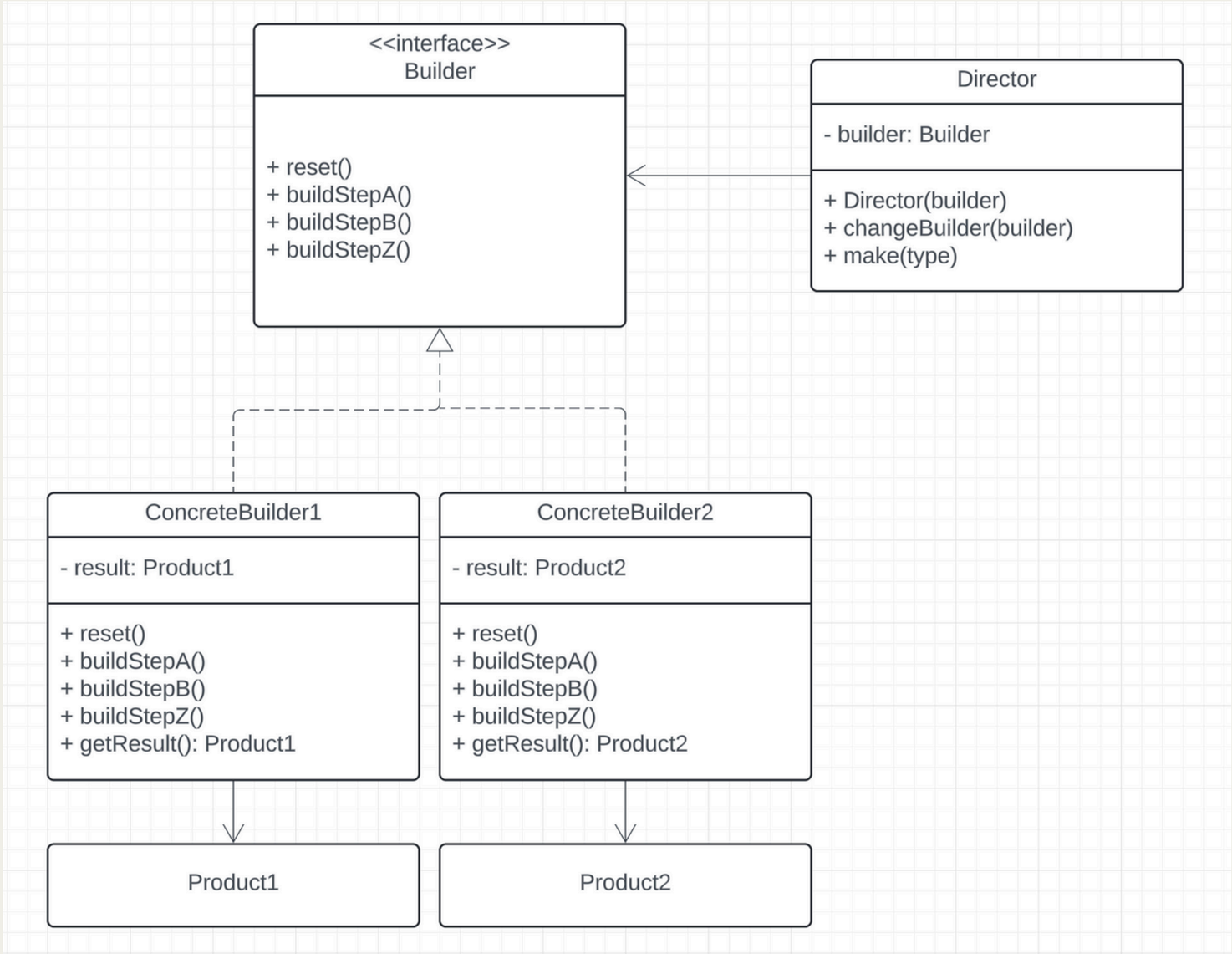
Builder Pattern

BUILDER PATTERN

Builder is a creational design pattern that lets you construct complex objects step by step. The pattern allows you to produce different types and representations of an object using the same construction code.



BUILDER PATTERN



BUILDER PATTERN

In our system, we have trains which contain many engines and/or wagons. As in a normal train, these engines/wagons are ordered sequentially from the front of the train to the back.

Engines provide a certain amount of power and wagons require a certain amount of power to pull. At each point along the train, taking into account preceeding engines/wagons, the sum of the engine power must be greater than the sum of the wagon's required power. Otherwise, the rest of the train will be left behind!
There are three types of wagons:

- Passenger wagons which require 500 engine power each
- Cargo wagons which require 1,000 engine power each
- Engines which provide power. They can be created at any power. For our system, we will create them at two variants. A "high powered" engine (2,000 power) and a "normal" engine (1,000) power.

Create a train builder that constructs a train in order, wagon by wagon with the above constraint. If the above constraint is violated at any point, throw an IllegalStateException.

BUILDER PATTERN

Question: How could you extend this solution to add ToyTrains and a ToyTrainBuilder to the system?

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This would require a builder interface and separate concrete builders, similar to the lecture examples

KAHOOOTTTTTTTTTT!!!!!!

LABBBBBBB

SAMPLE EXAM