

**3 Questions**

MIS → Math → make english  
 ↳ english → give spec  
 ↳ Math → solve (syntax not needed)

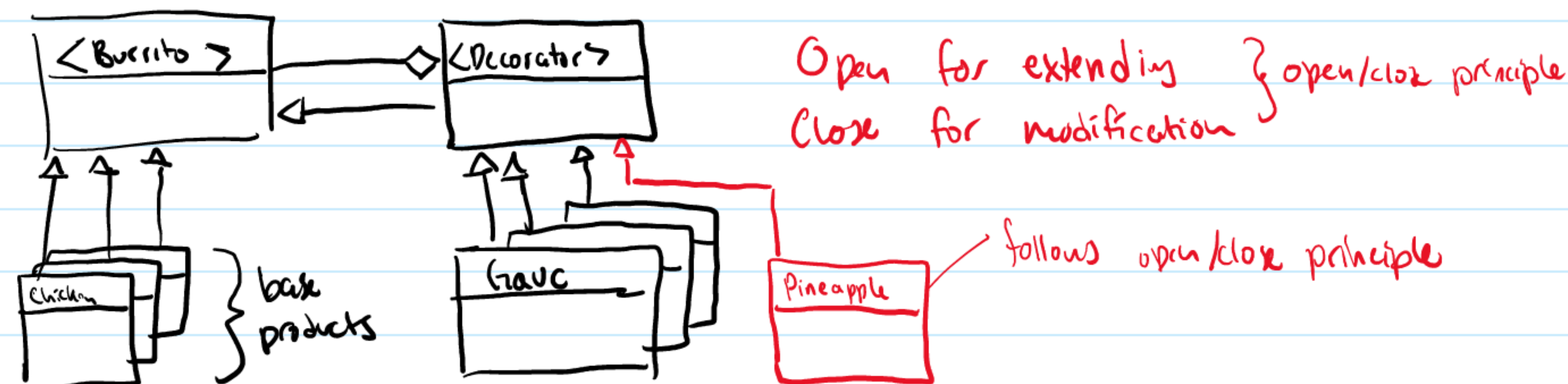
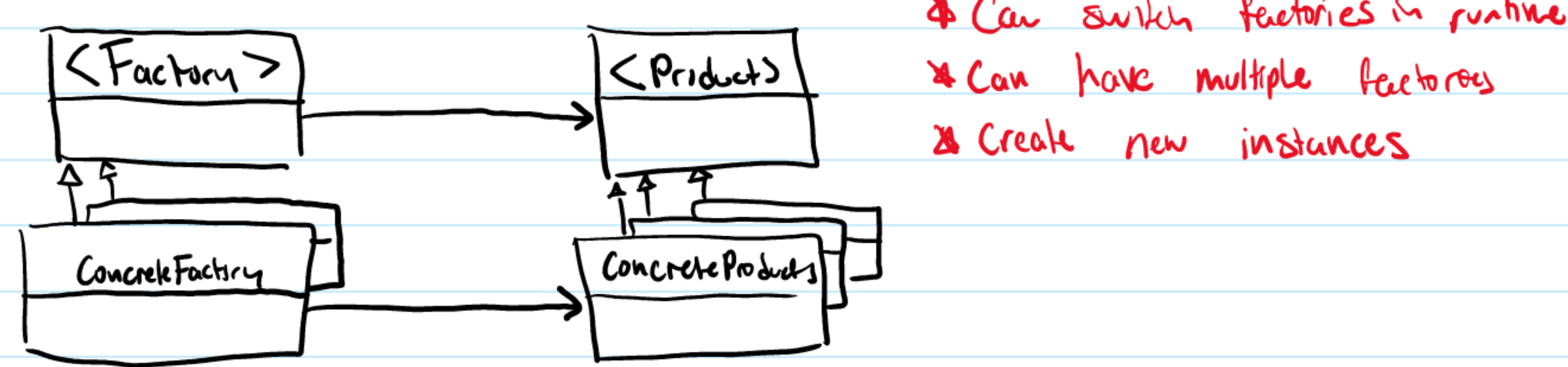
\* No writing a full MIS

\* Don't use the local functions in spec

**Design Patterns**

- 1) Decorator
- 2) Factory
  - Abstract Factory
- 3) Adapter
- 4) singleton
- 5) proxy
- 6) observer
- 7) Strategy
- ~~8) Facade~~
- 9) Command

NOT ON EXAM

**Decorator****Factory****Abstract Factory****SOLID****Single Responsibility** (information hiding / separation of concern)

- modular
- break down the responsibilities
- single responsibility

**Open / Closed**

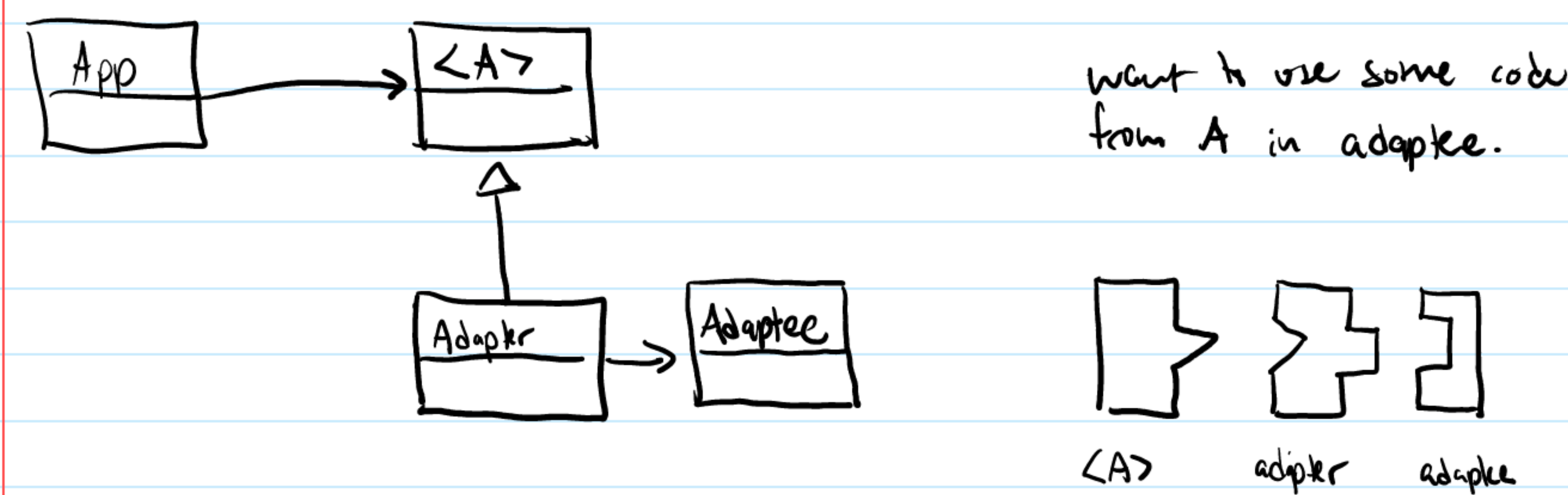
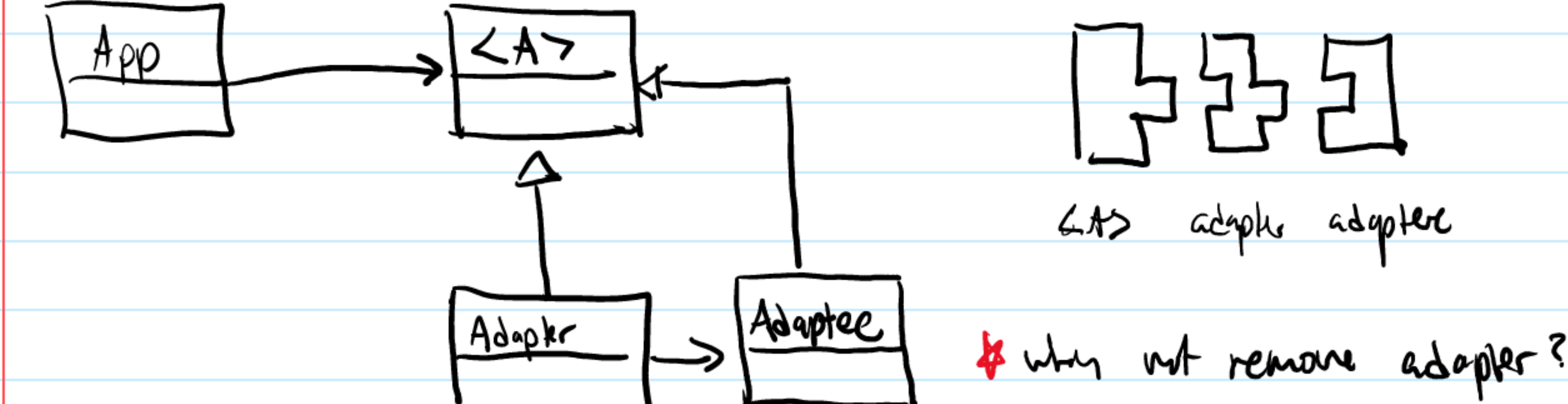
- open for extension
- closed for modification

**Interface Segregation**

- many small interfaces but one big one

**Dependence Inversion**

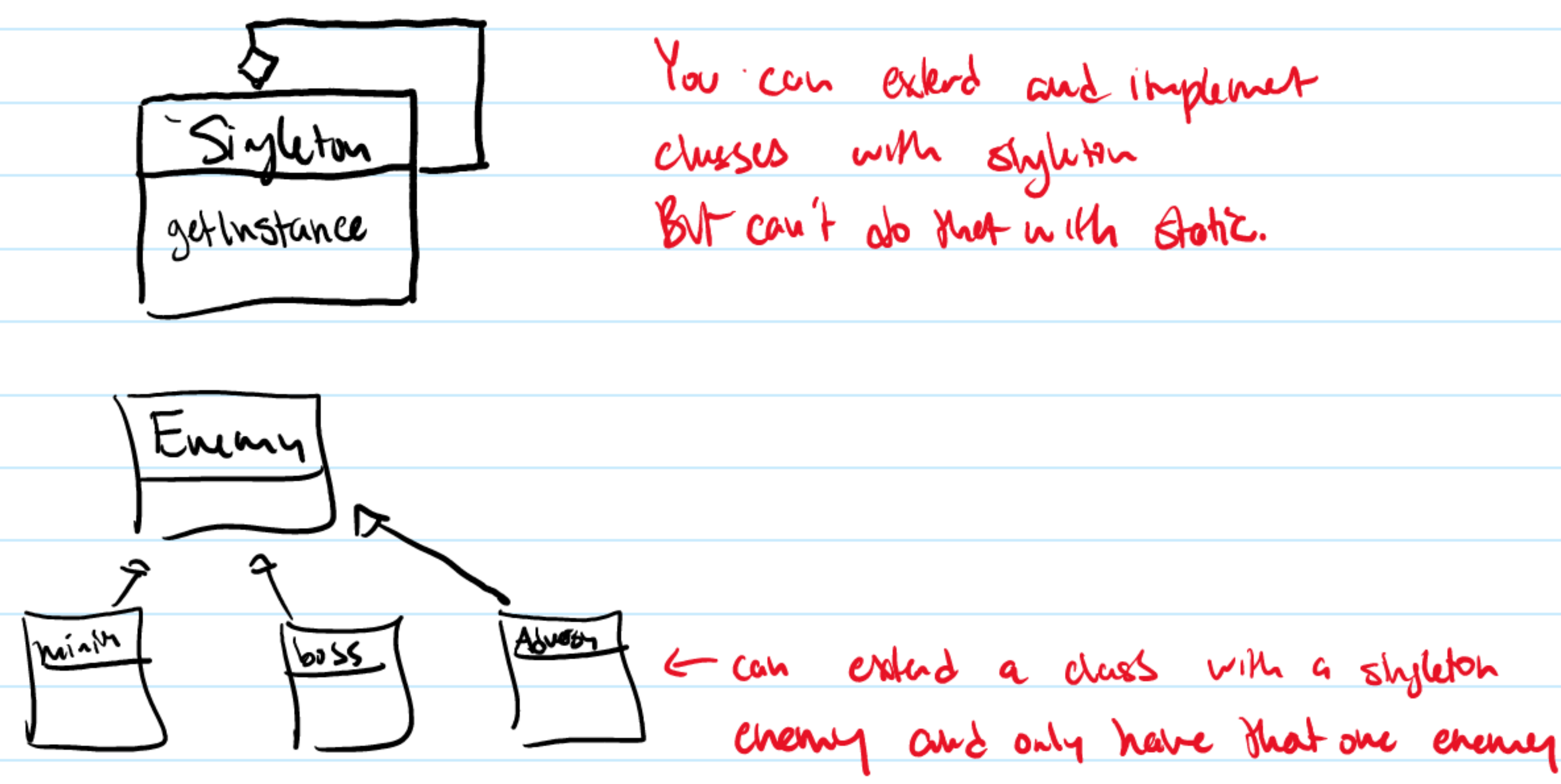
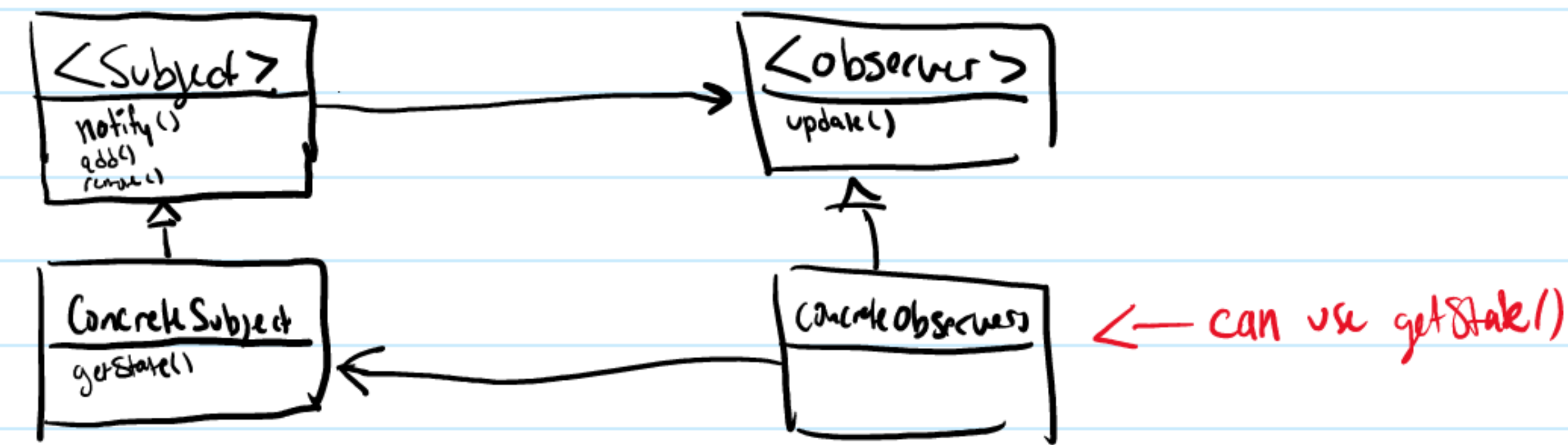
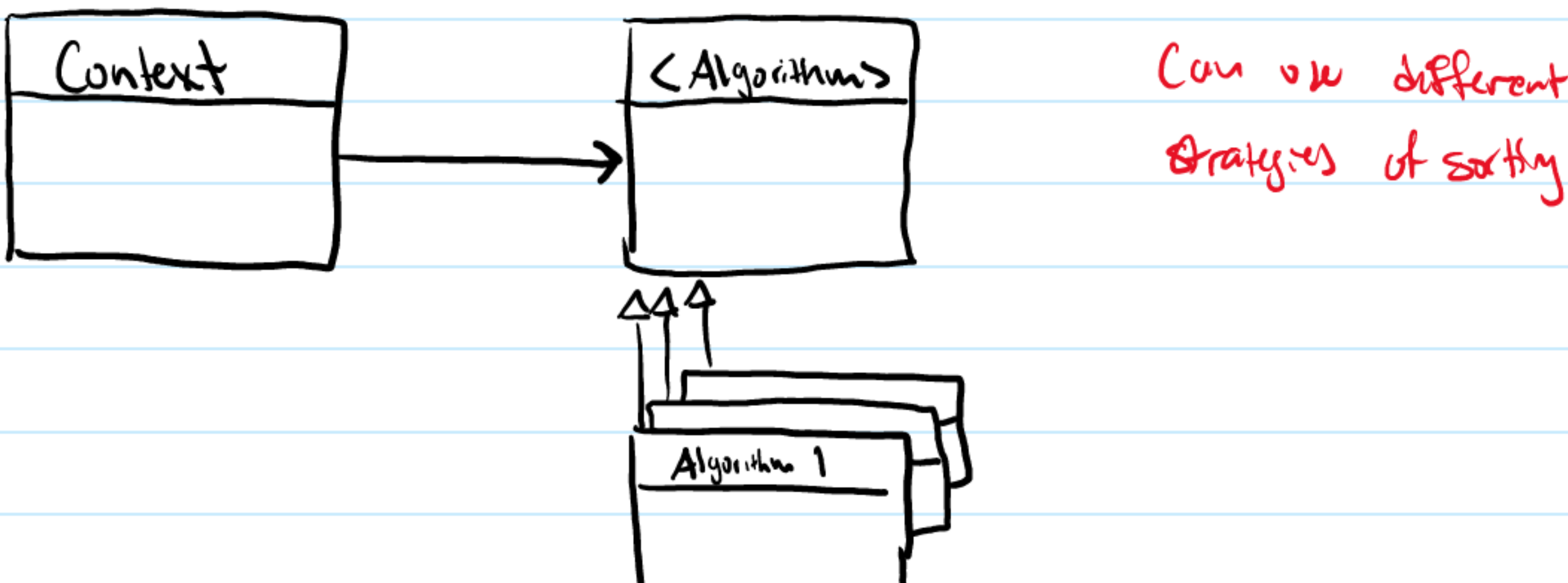
- like to design for interfaces not concretions

**Adapter / Wrapper****Proxy****\* Why use proxy?**

- performance (for query)
- security

**Singleton**

Can we limit a Class to a single instance?

**Observer****Strategy** (incapsulating algorithm)**Command**