Java Programming II

Lab4

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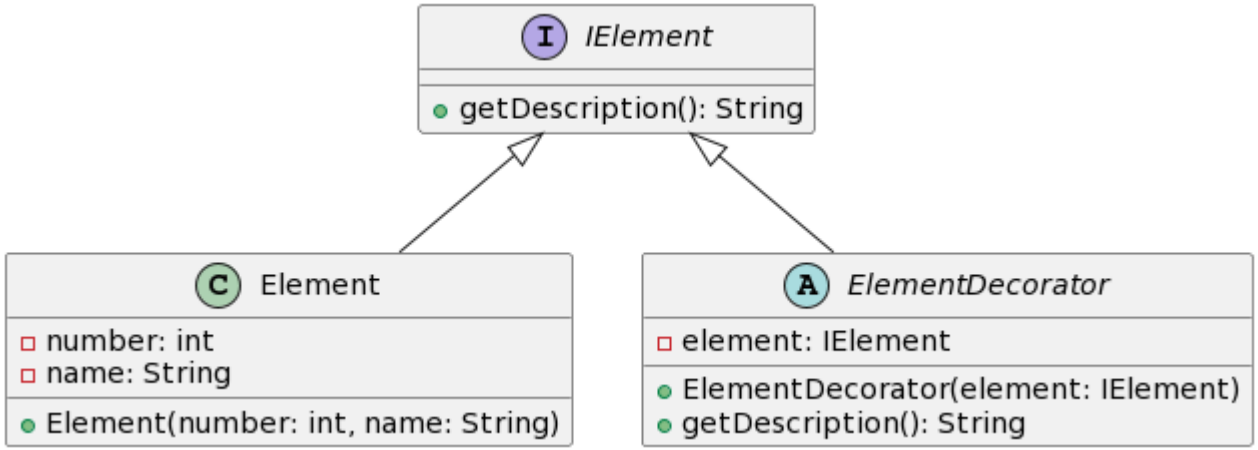
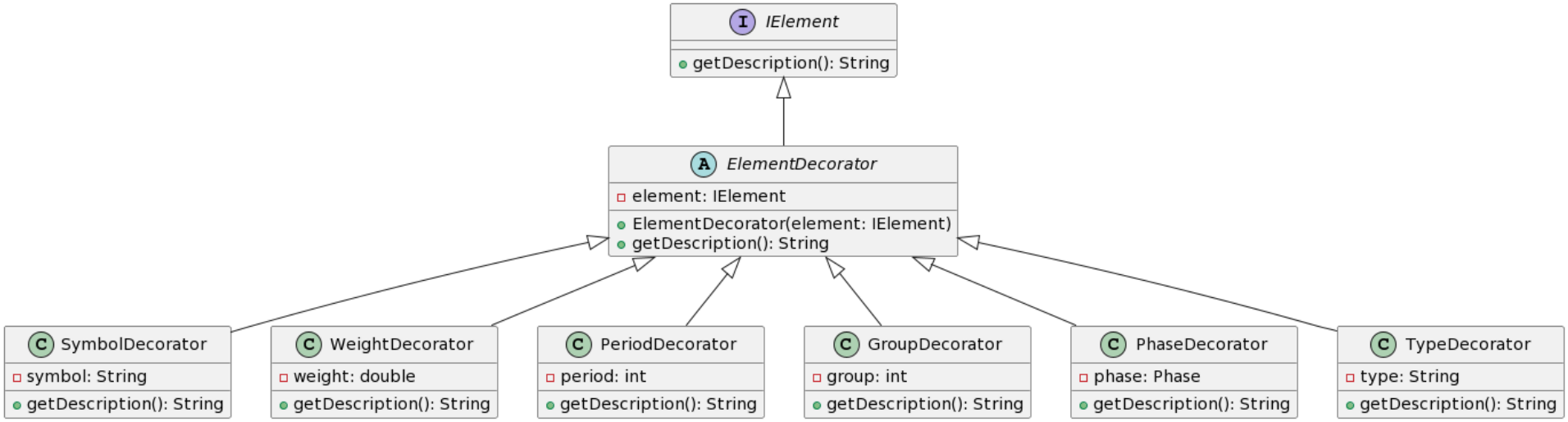
Lab4

- Practice to write a program that decorate **Element** using **Decorator pattern.**
  - **Element** implements **IElement**. It has to implement **String getDescription()** that returns string of csv(comma separated version) member fields.
  - **ElementDecorator** implements **IElement**. It has **IElement element** member field. It has to implement String getDescription().



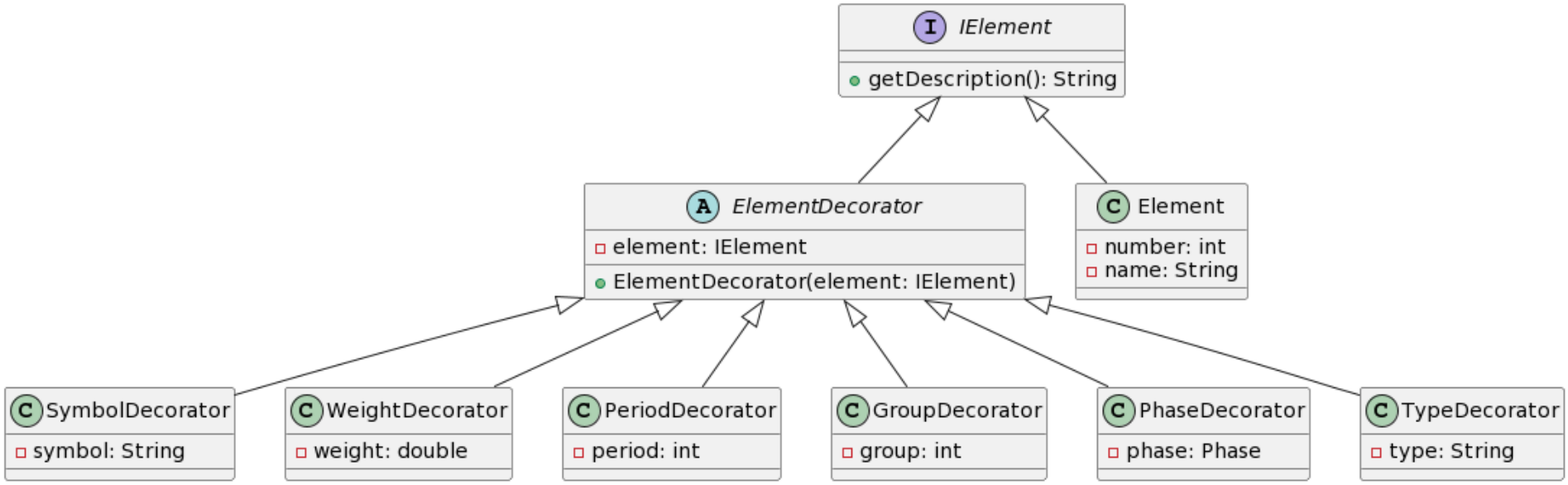
Lab4

- **SymbolDecorator, WeightDecorator, PeriodDecorator, GroupDecorator, PhaseDecorator, TypeDecorator** extends ElementDecorator and sets its description.
  - Constructor **set its own member.**
  - getDescription() **returns decorated description**.



Lab4

- Class Diagram



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- MainTest class tests adding decorators differently.
  - First, create **List<Element>** using **List<PeriodicElement>**
  - Then, create **List<IElement>** using **List<Element>**, and find PeriodicElement that is matched with Element, and then (1) WeightDecorator and (2) SymbolDecorator, and then save it to "**Elements1.csv**" file with the firstline **"#AtomicNumber,Element,AtomicMass,Symbol"**.
  - Then, create another **List<IElement>** using **List<Element>**, and find PeriodicElement that is matched with Element, and then (1) SymbolDecorator, (2) WeightDecorator, (3) PeriodDecorator, (4) GroupDecorator, (5) PhaseDecorator, (6) TypeDecorator, and then save it to "**Elements2.csv**" file with the firstline **"#AtomicNumber,Element,Symbol,AtomicMass,Period,Group,Phase,Type"**.
  - Then, try different decoration.

Submit to e-learning

- Add your code (e.g., additional method, class, routine, etc) in the Lab4 assignment.
- Submit the Lab4 assignment (JAVA23-2-Lab4-YourID-YourName.zip including the report) to e-learning (due by 10/16).