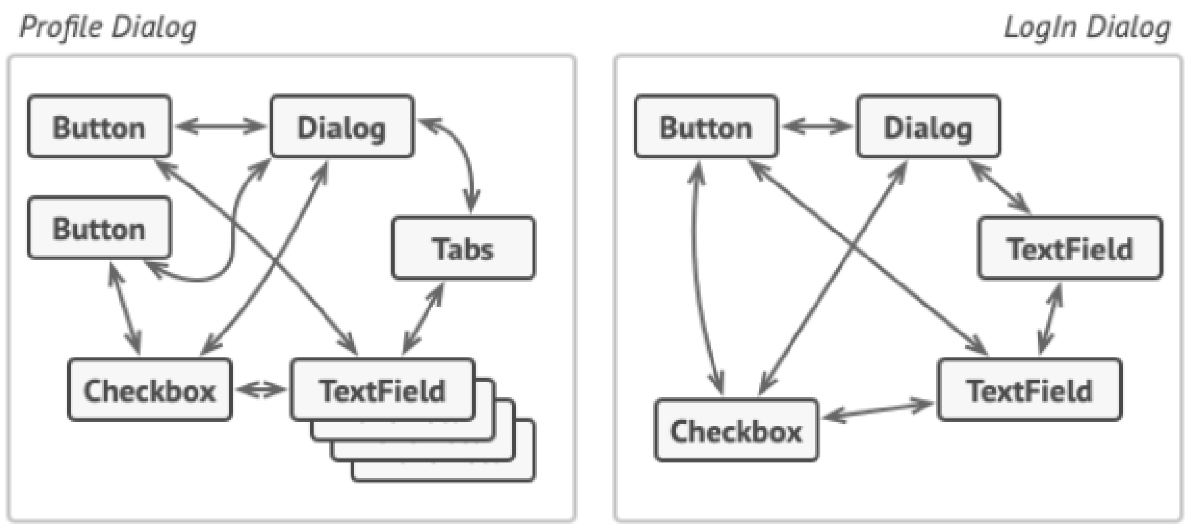
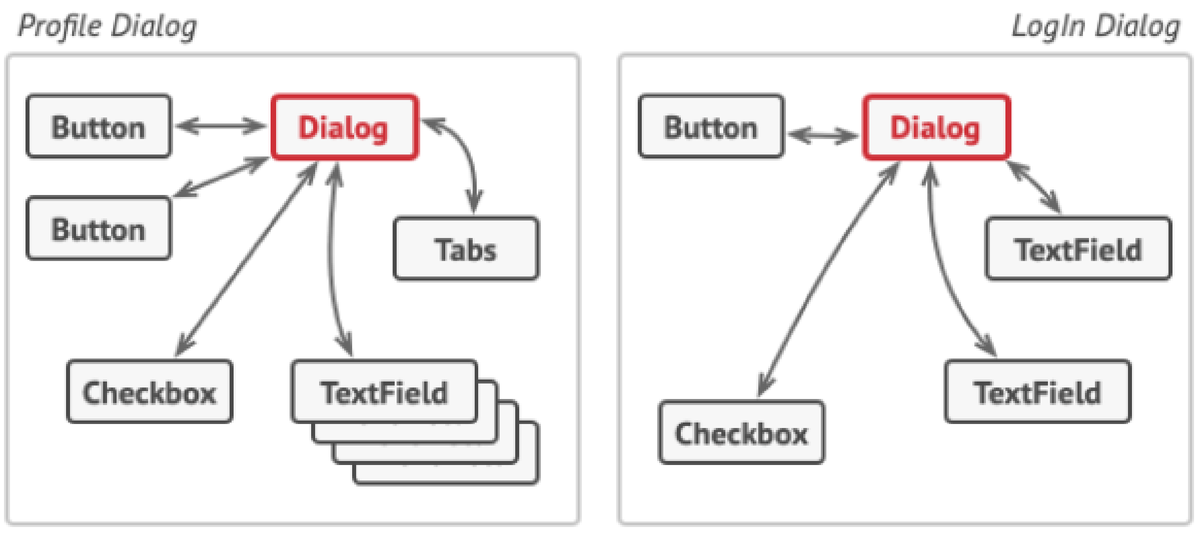
Intent

Mediator is a behavioral design pattern that lets you reduce chaotic dependencies between objects. The pattern restricts direct communications between the objects and forces them to collaborate only via a mediator object.

Problem & Solution

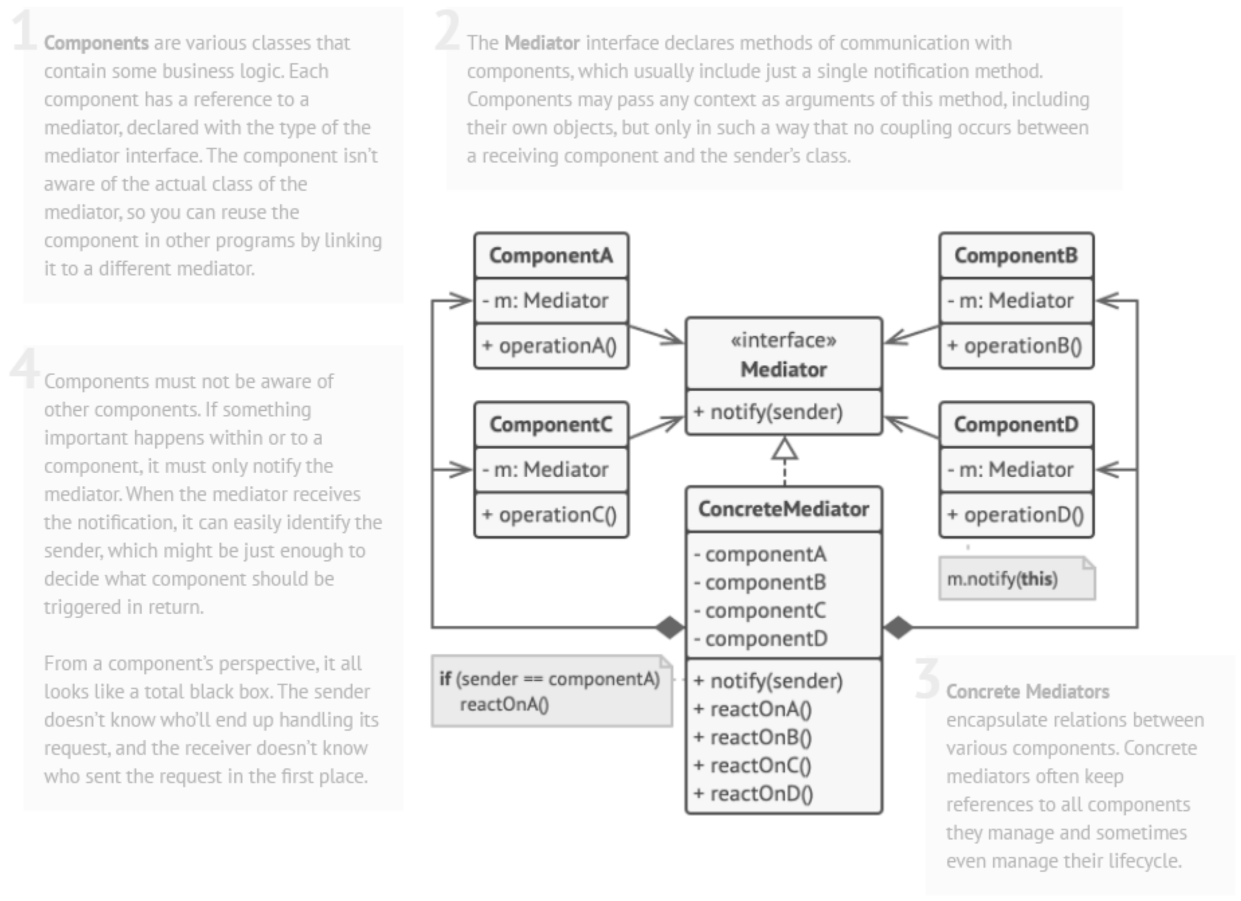


Relations between elements of the user interface can become chaotic as the application evolves.



UI elements should communicate indirectly, via the mediator object.

Structure


1 **Components** are various classes that contain some business logic. Each component has a reference to a mediator, declared with the type of the mediator interface. The component isn't aware of the actual class of the mediator, so you can reuse the component in other programs by linking it to a different mediator.

2 The **Mediator** interface declares methods of communication with components, which usually include just a single notification method. Components may pass any context as arguments of this method, including their own objects, but only in such a way that no coupling occurs between a receiving component and the sender's class.

3 **Concrete Mediators** encapsulate relations between various components. Concrete mediators often keep references to all components they manage and sometimes even manage their lifecycle.

4 Components must not be aware of other components. If something important happens within or to a component, it must only notify the mediator. When the mediator receives the notification, it can easily identify the sender, which might be just enough to decide what component should be triggered in return.

From a component's perspective, it all looks like a total black box. The sender doesn't know who'll end up handling its request, and the receiver doesn't know who sent the request in the first place.

Applicability

- Use the Mediator pattern when it's hard to change some of the classes because they are tightly coupled to a bunch of other classes.
- Use the pattern when you can't reuse a component in a different program because it's too dependent on other components.
- Use the Mediator when you find yourself creating tons of component subclasses just to reuse some basic behavior in various contexts.