

Mediator

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Name and Classification:

Mediator (Object Behavioural)

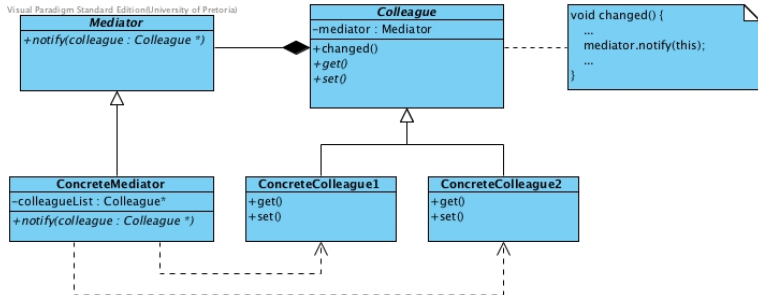
Intent:

“Define an object that encapsulates how a set of objects interact. Mediator promotes loose coupling by keeping objects from referring to each other explicitly, and it lets you vary the interaction independently.”

GoF(273)

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Visual Paradigm Standard Edition (University of Pretoria)



Mediator

- defines an interface for communicating with Colleague objects

Concrete Mediator

- implements cooperative behaviour by coordinating Colleague objects
- knows and maintains colleagues

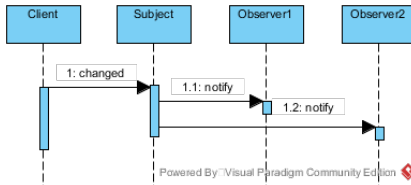
Colleagues

- each Colleague class knows its Mediator object
- each colleague communicates with its mediator whenever it would have otherwise communicated with another object

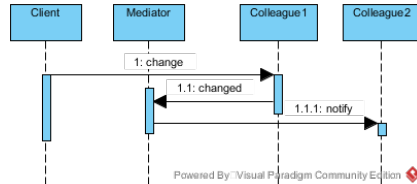
- **Façade** (105): has unidirectional behaviour - between the Facade interface to the subsystem objects, but not back. Mediator allows multidirectional communication.
- **Observer** (293): Colleagues can use the Observer pattern to communicate with the mediator.

The Mediator design pattern extends the Observer pattern.

- The Observer registers observers that get updated whenever the subject changes,
- The Mediator registers colleagues that get updated whenever one of the other colleagues notifies the mediator of an update.

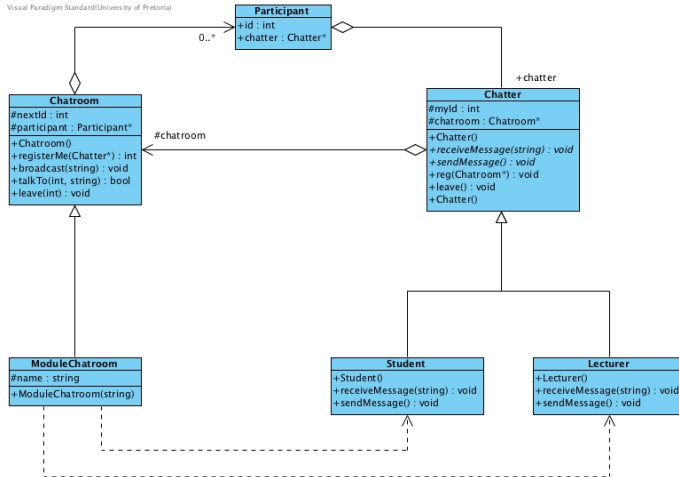


Observer



Mediator

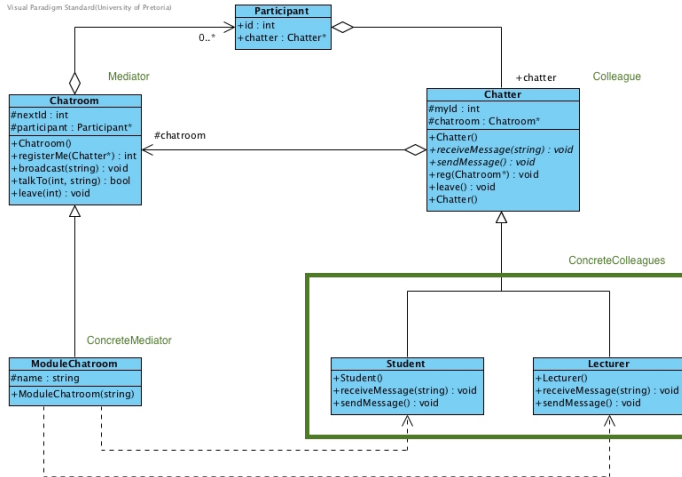
Visual Paradigm Standard(University of Pretoria)



Participants

- Mediator - Chatroom
- ConcreteMediator - ModuleChatroom
- Colleague - Chatter
- ConcreteColleague - Student, Lecturer

Visual Paradigm Standard(University of Pretoria)



Draw a UML Sequence diagram for the following main program

```
int main() {
    Chatroom* cr = new ModuleChatroom(" COS121" );
    Chatter* student [2];

    Chatter* lecturer = new Lecturer();
    student[0] = new Student();  student[1] = new Student();

    lecturer->reg(cr);  student[0]->reg(cr);  student[1]->reg(cr);

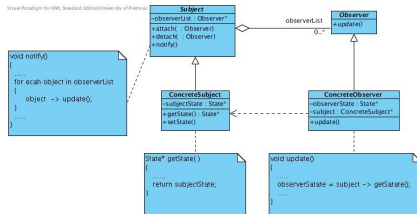
    student[0]->sendMessage();  student[0]->sendMessage();
    student[1]->sendMessage();  lecturer->sendMessage();

    student[1]->leave();  lecturer->leave();
    lecturer->sendMessage();

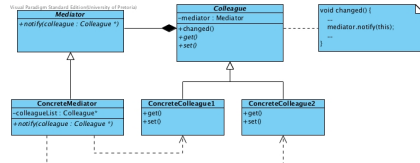
    delete lecturer;
    for (int i = 0; i < 2; i++)  delete student[i];
    delete cr;

    return 0;
}
```

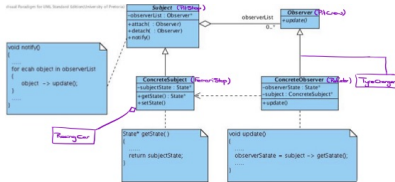
What do we have?



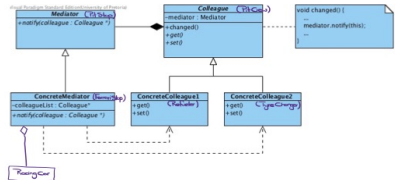
Observer



Mediator



Observer



Mediator