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Subject: Design Patterns

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Mid Term Lab Exam

Code:

Note that the black background in the code is due to the IntelliJ Code editor

Subject:

```
package gof.Lab_Mid;

interface Subject {
    void registerObserver(Observer observer);
    void notifyObservers(String matchUpdate);
}
```

Observer:

```
package gof.Lab_Mid;

interface Observer {
    void update(String matchUpdate);
}
```

Cricket Match Concrete Subject:

```
package gof.Lab_Mid;

import java.util.ArrayList;
import java.util.List;

class CricketMatch implements Subject {
    private List<Observer> observers;
    private String matchUpdate;

    public CricketMatch() {
        this.observers = new ArrayList<>();
    }

    @Override
    public void registerObserver(Observer observer) {
        observers.add(observer);
    }

    @Override
    public void notifyObservers(String matchUpdate) {
        for (Observer observer : observers) {
            observer.update(matchUpdate);
        }
    }
}
```

```

    public void setMatchUpdate(String matchUpdate) {
        this.matchUpdate = matchUpdate;
        notifyObservers(matchUpdate);
    }
}

```

Concrete Observer Class:

```

package gof.Lab_Mid;

class SportsChannel implements Observer {
    private String name;

    public SportsChannel(String name) {
        this.name = name;
    }

    @Override
    public void update(String matchUpdate) {
        System.out.println(name + " received the update: " + matchUpdate);
    }
}

```

from this class we will make three observer objects:

Main:

```

package gof.Lab_Mid;

public class Main {
    public static void main(String[] args) {
        CricketMatch cricketMatch = new CricketMatch();

        // Three observers
        SportsChannel PtvSports = new SportsChannel("PTV Sports");
        SportsChannel TenCricket = new SportsChannel("Ten Cricket");
        SportsChannel CricBuzz = new SportsChannel("CricBuzz");

        cricketMatch.registerObserver(PtvSports);
        cricketMatch.registerObserver(TenCricket);
        cricketMatch.registerObserver(CricBuzz);

        // Updating the match status
        cricketMatch.setMatchUpdate("Match is in progress");

        // Updating the match status again
        cricketMatch.setMatchUpdate("Match is over");
    }
}

```