

## Case Study Title: Hospital Management System

Code:

Patient.java

```
package com.hospital;

public class Patient {

    public void registerPatient() {

        System.out.println("Patient registered successfully.");

    }

    public void getPatientDetails() {

        System.out.println("Fetching patient details...");

    }

}
```

Appointment.java

```
package com.hospital;

public class Appointment {

    public void bookAppointment() {

        System.out.println("Appointment booked successfully.");

    }

    public void cancelAppointment() {

        System.out.println("Appointment canceled.");

    }

}
```

Billing.java

```
package com.hospital;

public class Billing {

    public void generateBill() {

        System.out.println("Bill generated successfully.");

    }

}
```

```
}  
  
public void sendBill() {  
    System.out.println("Bill sent via email.");  
}
```

```
}
```

HospitalService.java

```
package com.hospital;
```

```
public class HospitalService {  
    private Patient patient;  
    private Appointment appointment;  
    private Billing billing;  
  
    // Setters for dependency injection  
    public void setPatient(Patient patient) {  
        this.patient = patient;  
    }  
  
    public void setAppointment(Appointment appointment) {  
        this.appointment = appointment;  
    }  
  
    public void setBilling(Billing billing) {  
        this.billing = billing;  
    }  
  
    public void handlePatientRegistration() {
```

```

    patient.registerPatient();

    patient.getPatientDetails();
}

public void handleAppointment() {
    appointment.bookAppointment();
    appointment.cancelAppointment();
}

public void handleBilling() {
    billing.generateBill();
    billing.sendBill();
}
}

```

applicationContext.xml

```

<?xml version="1.0" encoding="UTF-8"?>

<beans xmlns="http://www.springframework.org/schema/beans"
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xsi:schemaLocation="
http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans.xsd">

<!-- Bean definitions -->

<bean id="patient" class="com.hospital.Patient" />

<bean id="appointment" class="com.hospital.Appointment" />

<bean id="billing" class="com.hospital.Billing" />

```

```

<!-- Service with injected dependencies -->

<bean id="hospitalService" class="com.hospital.HospitalService">

<property name="patient" ref="patient" />

<property name="appointment" ref="appointment" />

<property name="billing" ref="billing" />

</bean>

</beans>

```

pom.xml

```

<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
http://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<groupId>com.example</groupId>

<artifactId>hospital-management-xml</artifactId>

<version>1.0-SNAPSHOT</version>

<dependencies>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.33</version>

</dependency>

</dependencies>

</project>

```

Main.java

```

package com.hospital;

import org.springframework.context.ApplicationContext;

```

```
import org.springframework.context.support.ClassPathXmlApplicationContext;

public class Main {

    public static void main(String[] args) {

        ApplicationContext context = new

        ClassPathXmlApplicationContext("applicationContext.xml");

        HospitalService service = (HospitalService) context.getBean("hospitalService");

        service.handlePatientRegistration();

        service.handleAppointment();

        service.handleBilling();

    }

}
```