Case Study Title: Hospital Management System

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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...");
}
}
Appoinment.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.");
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}
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() {
```

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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"</pre>
    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">
cproperty name="patient" ref="patient" />
cproperty name="appointment" ref="appointment" />
cproperty 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();
}
```