Code Review of
The Software Project:

Hospital and Healthcare Management System

Course Title: Software Development Project
Course ID: CSE- 3106

Project By:

Md Tasbi Hassan
Student ID: 210216
Sanimun Maria
Student ID: 210235

Reviewed By:

Hridoy Hasan
Student ID: 200224
Jahidul Islam
Student ID: 210229

Submitted To:

Amit Kumar Mondol
Associate Professor
Computer Science & Engineering Discipline
Khulna University,
Khulna.

Code Review:

Code Smells

1. **Large or complex methods:**
   There are many large or complex methods which can be difficult to read and understand.

   1. initComponents method(Main class)
   2. jButton1ActionPerformed(Login class)
   3. initComponents method(Doctor class)
   4. jButton1ActionPerformed(Doctor class)
   5. jButton1ActionPerformed(User class)

2. **Long parameter lists:**
   There is long parameter lists in Main method
   1. Main(String username, String userType, String userID)

3. **Excessive comments:**
   In some modules there are excessive comments and some does not have any comment at all.

   1.user class
   2.Login class

4. Duplicate code:

There are duplicate code in many methods.

1.initcomponents.

5. Inconsistent naming conventions:

In some cases, naming conventions are standard and some cases are unstandard.

1.Variable name(main class, viewUser class, patient class, Login class)

6. Incomplete error handling:

Errors are mostly handled in each of the modules. There are mainly scope of running into error while doing file operations which seems to be handled carefully.

7. Too many if/else statements:

The use of if else statement is very few.

8. Poor use of inheritance:

There is no use of inheritance in this project .

9. Unnecessary dependencies:

There are various unnecessary external libraries and frameworks imported in various modules in this project which are not being used.

These libraries/ frameworks are not being used but still imported unnecessary

10. **Magic numbers or hard-coded values:**
    In most of the cases, there is no sign of hard coding or magic numbers. Instead, contents are introduced and used in the project.

Proposed Architecture Evaluation

The proposed architecture of the project is **"Layered Architecture"**. In the project, we can see the reflection of the proposed architecture. There are different layers or modules in the project.

There is a "**Main.java"**module which has the main window with different frames for the application, which serves as the basic user interface layer. The detailed user interface is actually enclosed in each of the modules.

The **User.java, Login.java,Patient.java,Doctor.java,Item.java and channel.java** modules serves as the main application functionality layer. These modules have their individual application functionalities included in them..

So, we can say that the project reflects the proposed **Layered Architecture** more or less.

Modularity Check

The project is divided into 7 modules which are **Main.java, User.java, Login.java,Patient.java,Doctor.java,Item.java and channel.java.**

Here are some example

Main class:

1. public Main(String username, String userType, String userID)

   Code smell: long parameter list

2. jToggleButton1 = new javax.swing.JToggleButton();

   jPanel1 = new javax.swing.JPanel();

   jButton1 = new javax.swing.JButton();

   jButton2 = new javax.swing.JButton();

   jButton3 = new javax.swing.JButton();

   jButton4 = new javax.swing.JButton();

   jButton5 = new javax.swing.JButton();

   jButton6 = new javax.swing.JButton();

   jButton7 = new javax.swing.JButton();

   jButton8 = new javax.swing.JButton();

   jButton9 = new javax.swing.JButton();

   jLabel1 = new javax.swing.JLabel();

   jPanel2 = new javax.swing.JPanel();

   jLabel2 = new javax.swing.JLabel();

   jLabel3 = new javax.swing.JLabel();

   jLabel4 = new javax.swing.JLabel();

   jLabel5 = new javax.swing.JLabel();

   Code smell: inconsistent naming conventions.

3. jButton5.setFont(new java.awt.Font("Calibri", 1, 16)); // NOI18N

   jButton5.setText("Prescription");
   jButton5.addActionListener(new java.awt.event.ActionListener() {

```
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton5ActionPerformed(evt);
            }
        });

        jButton6.setFont(new java.awt.Font("Calibri", 1, 16)); // NOI18N
        jButton6.setText("Create Item");
        jButton6.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton6ActionPerformed(evt);
            }
        });
```

Code smell: Duplicate code

4.

```
javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
    getContentPane().setLayout(layout);
    layout.setHorizontalGroup(
      layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
      .addGroup(layout.createSequentialGroup()
        .addGap(43, 43, 43)
        .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
          .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addComponent(jButton10, javax.swing.GroupLayout.PREFERRED_SIZE, 94,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(26, 26, 26))
          .addGroup(layout.createSequentialGroup()
            .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
              .addGroup(layout.createSequentialGroup()
                .addGap(170, 170, 170)
                .addComponent(jLabel1))
```

```
                    .addGroup(layout.createSequentialGroup()
                        .addGap(48, 48, 48)
                        .addComponent(jPanel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)))
                .addGap(94, 94, 94))))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
                .addGap(36, 36, 36)
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(layout.createSequentialGroup()
                        .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                        .addGap(32, 32, 32))
                    .addGroup(layout.createSequentialGroup()
                        .addComponent(jLabel1)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(jPanel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                        .addGap(220, 220, 220)
                        .addComponent(jButton10, javax.swing.GroupLayout.PREFERRED_SIZE, 35,
javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addGap(14, 14, 14))))
        );
```

Code smell: large and complex method

Class :login

5.

```
/**
```

```
    * This method is called from within the constructor to initialize the form.
    * WARNING: Do NOT modify this code. The content of this method is always
    * regenerated by the Form Editor.
    */
```

Code smell: excessive comments