# **Railway Management System**

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Semester: Fall

**Course:** Database Management Systems

**Instructor name**: Dr. Suhair H Amer

## HARDWARE AND SOFTWARE COMPONENTS

## **HARDWARE COMPONENTS**

**RAM**: 412 MB or more

Hard disk: 10 GB or more

## **SOFTWARE COMPONENTS**

Operating System: Windows 10

Front end: NetBeans IDE 8.2

**Back end**: My SQL Workbench 8.0 CE

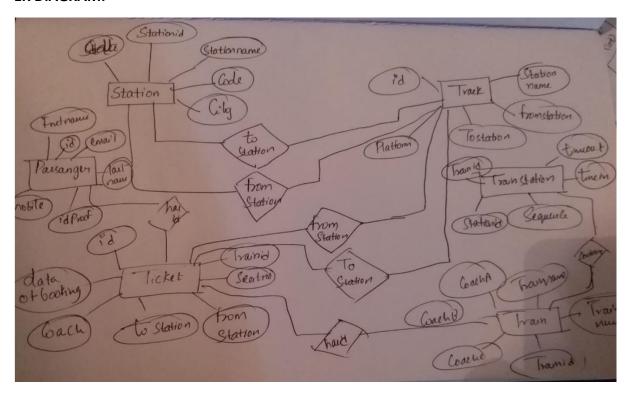
## **DESCRIPTION**

Application built to handle few operations such as displaying the train schedule and Enabling the user to book tickets for his/her journey from desired locations. Tools used are MySQL Work bench, Visual Studio code IDE. Languages used are MySQL.

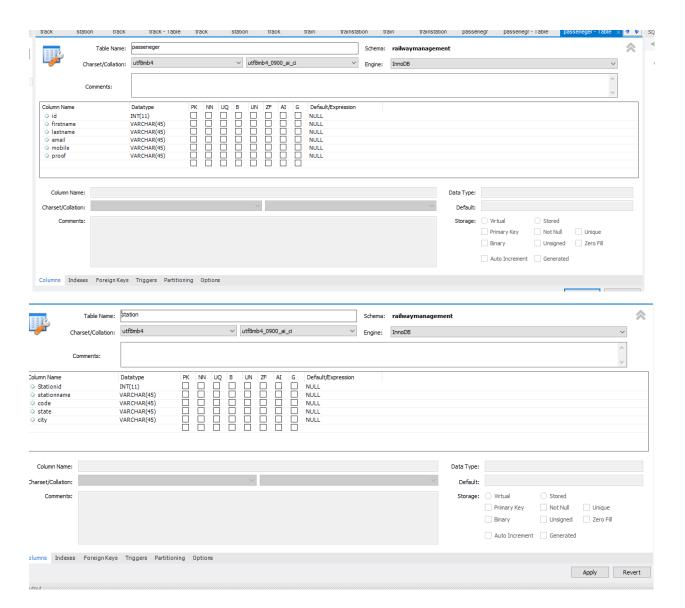
The below tables are created to suit the requirements of searching the trains and booking a ticket. The track table is created in relation with stations with a unique constrain on both The train table is created with 3 coaches which will be used to store the availability of seats in that coach for that train.

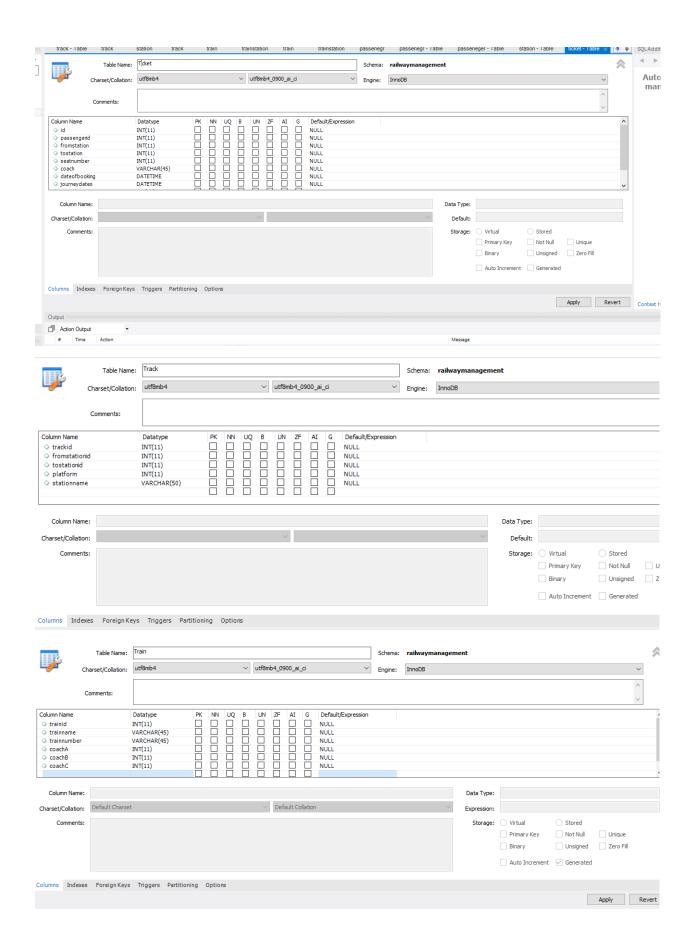
For maintaining the train schedule trainsstations is used along with the sequence for the order of the stations in the route.

## **ER DIAGRAM:**



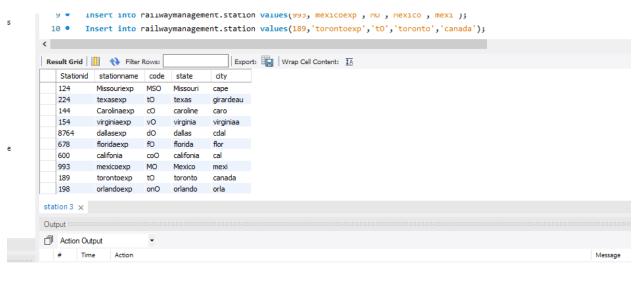
## **TABLES CREATION:**

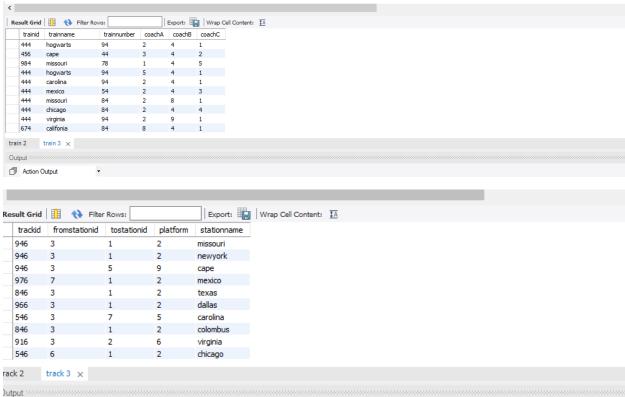




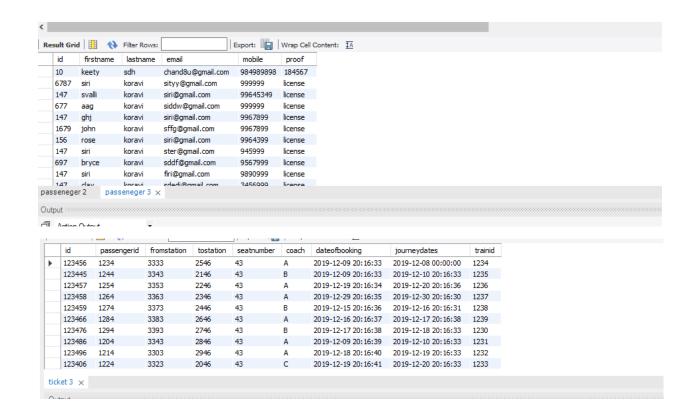
- TC	Table Name:	Trainstation										railwaymanagement				
	Charset/Collation:	utf8mb4				v utf8mb4_0900_ai_ci				~	Engine:	InnoDB				
	Comments:															
Column Name     trainid     stationid     timein     timeout     sequencen		Datatype INT(11) INT(11) TIME TIME INT(11)	PK	NN	UQ B	i i	ZF	AI	G 	Default/Expression NULL NULL NULL NULL NULL NULL						
Column Nam	ie:												Data Type:			
Charset/Collatio	n: Default Charse	t				V	Defau	ult Coll	lation			~	Expression:			
Comment	is:												Storage:	Virtual Primary Key Binary Auto Increment	Stored Not Null Unsigned Generated	
Columns Inde	xes Foreign Keys	Triggers Parti	tioning	Options	S										_	

## Insertion of data:









## **GUI INTERFACE:**



## LABELS:

## Copy of code:

/\*

- \* To change this license header, choose License Headers in Project Properties.
- \* To change this template file, choose Tools | Templates
- \* and open the template in the editor.

\*/

package javaapplication6;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.PreparedStatement;

import javax.swing.JOptionPane;

/\*\*

\*

```
* @author Srivalli
*/
public class trainstation extends javax.swing.JFrame {
  /**
  * Creates new form trainstation
  */
  public trainstation() {
    initComponents();
  }
  /**
  * 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.
  */
  @SuppressWarnings("unchecked")
  // <editor-fold defaultstate="collapsed" desc="Generated Code">
  private void initComponents() {
    jLabel1 = new javax.swing.JLabel();
    jLabel2 = new javax.swing.JLabel();
    jLabel3 = new javax.swing.JLabel();
    jLabel4 = new javax.swing.JLabel();
    jLabel5 = new javax.swing.JLabel();
    jLabel6 = new javax.swing.JLabel();
    trainid = new javax.swing.JTextField();
    stationid = new javax.swing.JTextField();
    timein = new javax.swing.JTextField();
```

```
timeout = new javax.swing.JTextField();
    sequence = new javax.swing.JTextField();
    submit = new javax.swing.JButton();
    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
    getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());
    jLabel1.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
    jLabel1.setText("Train Station");
    getContentPane().add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(294,
38, -1, -1));
    jLabel2.setText("Train Id");
    getContentPane().add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(133,
105, -1, -1));
    ¡Label3.setText("Station Id");
    getContentPane().add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(133,
156, -1, -1));
    ¡Label4.setText("Time In");
    getContentPane().add(jLabel4, new org.netbeans.lib.awtextra.AbsoluteConstraints(133,
210, -1, -1));
    jLabel5.setText("Time Out");
    getContentPane().add(jLabel5, new org.netbeans.lib.awtextra.AbsoluteConstraints(133,
271, -1, -1));
    ¡Label6.setText("Sequence");
    getContentPane().add(jLabel6, new org.netbeans.lib.awtextra.AbsoluteConstraints(133,
334, -1, -1));
```

```
getContentPane().add(trainid, new org.netbeans.lib.awtextra.AbsoluteConstraints(511,
105, 69, -1));
    getContentPane().add(stationid, new
org.netbeans.lib.awtextra.AbsoluteConstraints(511, 164, 69, -1));
    getContentPane().add(timein, new org.netbeans.lib.awtextra.AbsoluteConstraints(511,
210, 69, -1));
    getContentPane().add(timeout, new
org.netbeans.lib.awtextra.AbsoluteConstraints(511, 268, 69, -1));
    getContentPane().add(sequence, new
org.netbeans.lib.awtextra.AbsoluteConstraints(511, 331, 69, -1));
    submit.setText("Submit");
    submit.addActionListener(new java.awt.event.ActionListener() {
      public void actionPerformed(java.awt.event.ActionEvent evt) {
        submitActionPerformed(evt);
      }
    });
    getContentPane().add(submit, new org.netbeans.lib.awtextra.AbsoluteConstraints(294,
392, -1, -1));
    pack();
 }// </editor-fold>
  private void submitActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    int TrainId=Integer.parseInt(trainid.getText());
    int stationId=Integer.parseInt(stationid.getText());
   String Timein = timein.getText();
   String Timeout = timeout.getText();
   int Sequence=Integer.parseInt(sequence.getText());
```

```
Connection conn=null;
   PreparedStatement pstmt=null;
try{
Class.forName("com.mysql.jdbc.Driver");
//demo is the name of the database
conn= DriverManager.getConnection("jdbc:mysql:///javaapplication6", "root",
"Sriva11i");//replace XXXXXX with you password
//employees is the name of the table
//4 questions marks for 4 fields in the table that i want to insert into
pstmt=conn.prepareStatement("insert into Station values(?,?,?,?)");
pstmt.TrainId(1,trainid);
 pstmt.stationId(2, stationid);
    pstmt.Timein(3, timein);
    pstmt.Timeout(4, timeout);
         pstmt.Sequence(4, sequence);
   int i=pstmt.executeUpdate();//will update database
    if (i>0) {
 JOptionPane.showMessageDialog(null, "Data is saved");
    }
else {
      JOptionPane.showMessageDialog(null, "Data not saved");
    }
          }
catch(Exception e){
     JOptionPane.showMessageDialog(null, e);
```

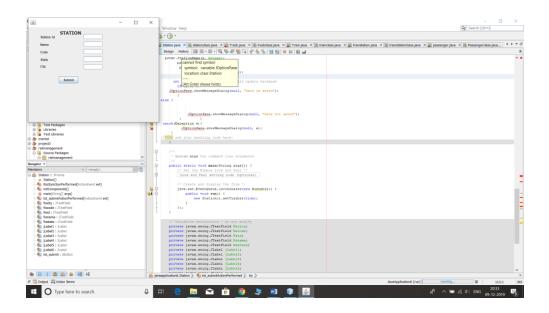
```
}
  }
  /**
   * @param args the command line arguments
   */
  public static void main(String args[]) {
    /* Set the Nimbus look and feel */
    //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
    /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and
feel.
     * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
     */
    try {
      for (javax.swing.UIManager.LookAndFeelInfo info:
javax.swing.UIManager.getInstalledLookAndFeels()) {
         if ("Nimbus".equals(info.getName())) {
           javax.swing.UIManager.setLookAndFeel(info.getClassName());
           break;
        }
      }
    } catch (ClassNotFoundException ex) {
java.util.logging.Logger.getLogger(trainstation.class.getName()).log(java.util.logging.Level.SE
VERE, null, ex);
    } catch (InstantiationException ex) {
java.util.logging.Logger.getLogger(trainstation.class.getName()).log(java.util.logging.Level.SE
VERE, null, ex);
    } catch (IllegalAccessException ex) {
```

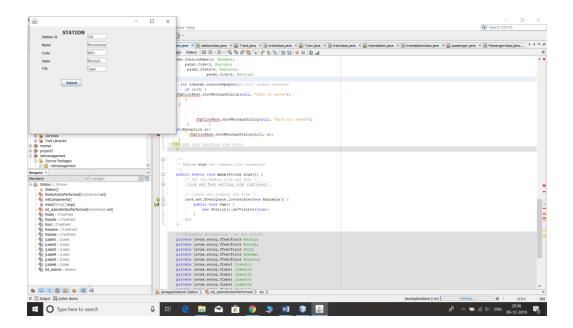
```
java.util.logging.Logger.getLogger(trainstation.class.getName()).log(java.util.logging.Level.SE
VERE, null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(trainstation.class.getName()).log(java.util.logging.Level.SE
VERE, null, ex);
    }
    //</editor-fold>
    /* Create and display the form */
    java.awt.EventQueue.invokeLater(new Runnable() {
      public void run() {
         new trainstation().setVisible(true);
      }
    });
  }
  // Variables declaration - do not modify
  private javax.swing.JLabel jLabel1;
  private javax.swing.JLabel jLabel2;
  private javax.swing.JLabel jLabel3;
  private javax.swing.JLabel jLabel4;
  private javax.swing.JLabel jLabel5;
  private javax.swing.JLabel jLabel6;
  private javax.swing.JTextField sequence;
  private javax.swing.JTextField stationid;
  private javax.swing.JButton submit;
  private javax.swing.JTextField timein;
  private javax.swing.JTextField timeout;
  private javax.swing.JTextField trainid;
```

```
// End of variables declaration
```

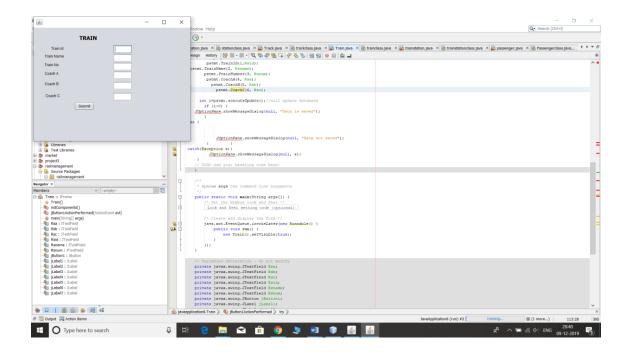
}

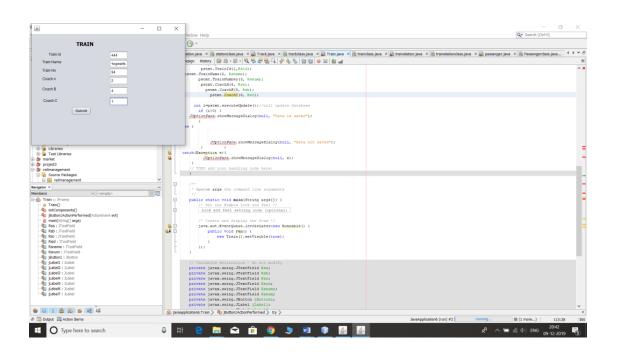
## Station:



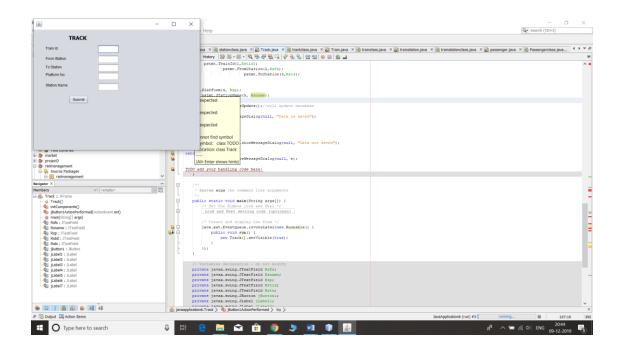


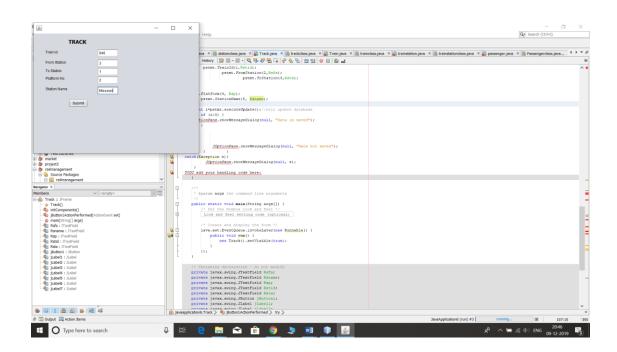
## Train:



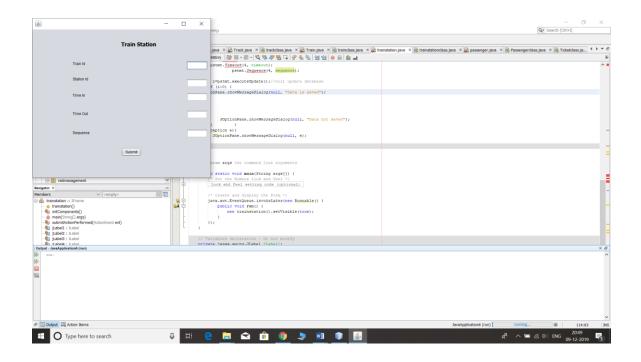


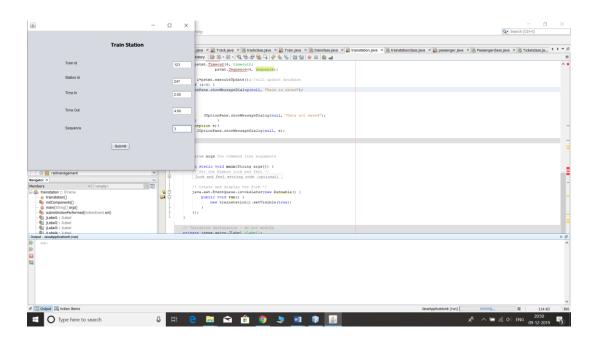
## Track:



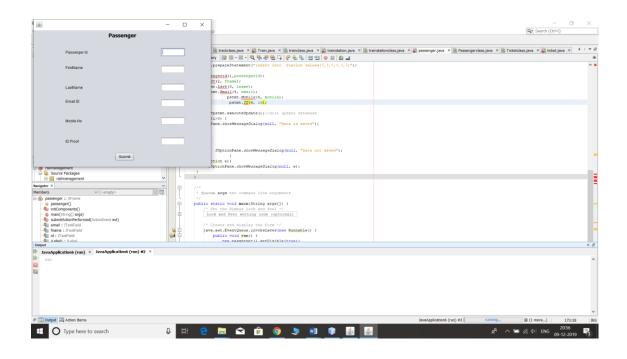


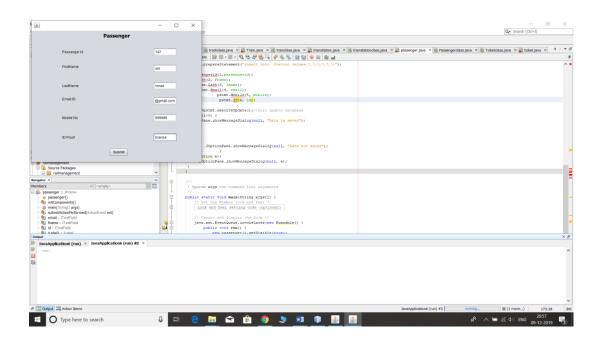
## **Train Station:**



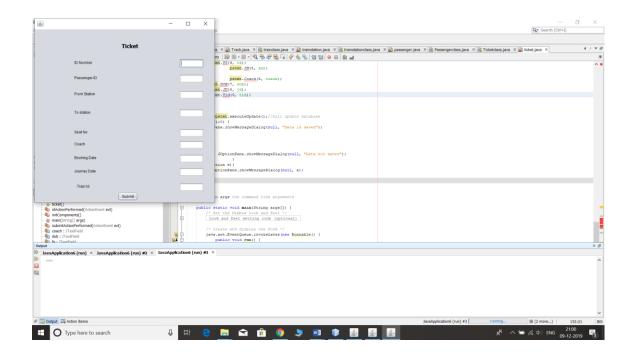


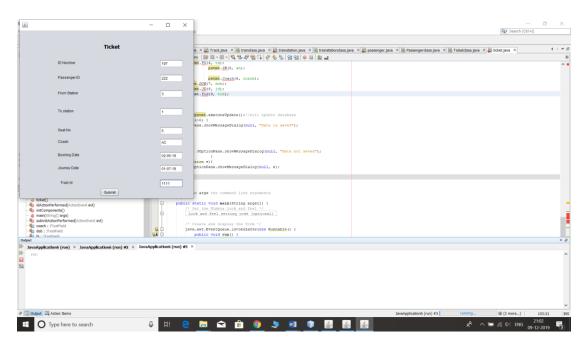
## Passenger:





#### Ticket:





#### **Conclusion:**

As per the requirement the Database designing has been .I have used the mysql package available for connecting to the MySQL database.

I was able to create a MYSQL connection pool and query the data using the pool. It has been prepared which lets the users search for the trains and book tickets. For the front end part I have used java template and customized it to fit the needs. The form data was sent to the node service by making calls from front end using Jquery.

The stations names in the dropdown are also fetched directly from the database, which makes it easy to add new stations directly into the database.

Overall, I got good exposure on MySQL and NetBeans with this project.