UMS
UNIVERSITI MALAYSIA SABAH

KK14203 OBJECT ORIENTED PROGRAMMING
SEMESTER II
SESSION 2019/2020

EMPLOYEE PAYROLL SYSTEM

ASSIGNMENT 2

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Introduction

The term payroll encompasses every employee of a company.. Some employees may be paid a steady salary while others are paid for hours worked or the number of items produced. All of these different payment methods are calculated by a payroll specialist and the appropriate pay checks are issued. Companies often use objective measuring tools such as timecards or timesheets completed by supervisors to determine the total amount of payroll due each pay period.

A payroll system is software designed to organize all the tasks of employee payment and the filing of employee taxes. These tasks can include keeping track of hours, calculating gross salary and deductions, printing and delivering checks.

Payroll software often requires very little input from the employer. The employer is required to input employee wage information and hours then the software calculates the information and performs withholdings automatically.

Payroll system are used by many company of all size to check and record working hours of employees primarily to calculate and pay their wages. Some companies have a requirement to record the number of hours spent on a specific tasks to know the hours an employee worked so as to pay their wages.

The Objectives of The System are:

1. To design a system that tracks and optimizes the hours that employees spend on their job.

2. To design a system that will achieve company objectives and deliver a variety possibilities enforced both by the law and the company's policy.

3. To identify the requirements of the system

4. To design payroll system accurately.

5. To maintain the information regarding the employee and generates the pay slip

6. To provide a system that will ease and lessen the work of the secretary in writing salary reports of each employee. The secretary will be using a system with just a click on the mouse, all the salary reports will be done by the computer.

Scope/Proposed works

1. Employee Database

a. Employee Details

➢ Employee Id, Name.

b. Department

➢ Department , employee id, department name

2. Calculate salary

a. Employee Detail

➢ Employee id, Department, Employee Name

b. Gross pay calculation

➢ Rate per day, number of working days

c. Total Deduction calculation

➢ EPF , SOCSO

d. Total Gross pay calculation

➢ Gross salary, total overtime, day shift allowance, night shift allowance

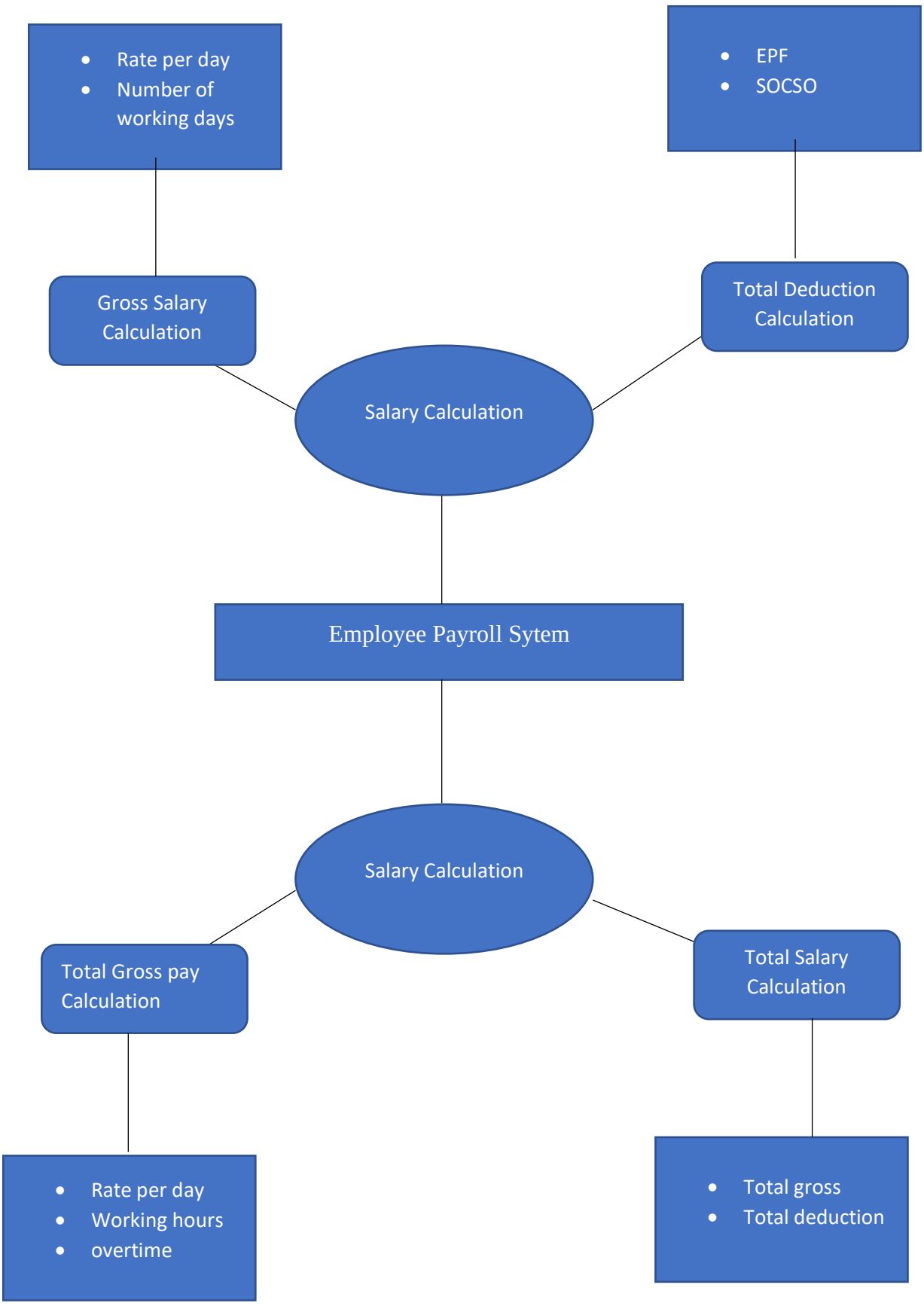
e. Total Salary pay calculation

➢ Total Gross salary, total deduction

Object Oriented Concept Implementation

1. Inheritance
2. Polymorphism
3. Object and classes
4. Interface
5. Exception Handling

Case diagram



Coding

```
/*
 * 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 BI19110155_EPS;

import javax.swing.JButton;

/**
 *
 * @author NUR FATIN AFIQAH BI19110155
 */
public class EmployeePayrollSystem extends javax.swing.JFrame {

    JButton Calculate = new JButton("Calculate");  //Create compute button
    JButton Clear   = new JButton("Clear"); //Create clear button


    double dsall = 100;
    double nsall= 200;
    double calculateot = 0.00;
    double grossolve =0.00;
    double calculateepf = 0.00;
    double totalgross = 0.00;
    double socso = 0.00;
    double totaldeduction = 0.00;
    double totalsalary = 0.00;

    public EmployeePayrollSystem() {
        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() {

    jLabel11 = new javax.swing.JLabel();
    Header = new javax.swing.JPanel();
    jLabel1 = new javax.swing.JLabel();
    jLabel2 = new javax.swing.JLabel();
    body = new javax.swing.JPanel();
    jLabel3 = new javax.swing.JLabel();
    jLabel4 = new javax.swing.JLabel();
    jLabel5 = new javax.swing.JLabel();
    jLabel6 = new javax.swing.JLabel();
    jLabel7 = new javax.swing.JLabel();
    jLabel8 = new javax.swing.JLabel();
    empname = new javax.swing.JTextField();
    empdepart = new javax.swing.JTextField();
    staffid = new javax.swing.JTextField();
    rpd = new javax.swing.JTextField();
    day = new javax.swing.JTextField();
    Ot = new javax.swing.JTextField();
    jButton1 = new javax.swing.JButton();
    jButton2 = new javax.swing.JButton();
    jLabel9 = new javax.swing.JLabel();
    jLabel10 = new javax.swing.JLabel();
    jLabel12 = new javax.swing.JLabel();
```

```
        jLabel11.setIcon(new javax.swing.ImageIcon(getClass().getResource("/BI19110155_EPS/icons8-flower-doodle-24.png"))); // NOI18N


        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);


        Header.setBackground(new java.awt.Color(51, 0, 255));


        jLabel1.setFont(new java.awt.Font("Book Antiqua", 1, 36)); // NOI18N
        jLabel1.setForeground(new java.awt.Color(255, 255, 255));
        jLabel1.setText("Employee Payroll System");


        jLabel2.setIcon(new javax.swing.ImageIcon(getClass().getResource("/BI19110155_EPS/icons8-payroll-64.png"))); // NOI18N


        javax.swing.GroupLayout HeaderLayout = new javax.swing.GroupLayout(Header);
        Header.setLayout(HeaderLayout);
        HeaderLayout.setHorizontalGroup(
            HeaderLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(HeaderLayout.createSequentialGroup()
                .addGap(58, 58, 58)
                .addComponent(jLabel1)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(jLabel2)
                .addGap(55, 55, 55))
        );
        HeaderLayout.setVerticalGroup(
            HeaderLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(HeaderLayout.createSequentialGroup()
                .addGroup(HeaderLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(HeaderLayout.createSequentialGroup()
                        .addGap(32, 32, 32)
                        .addComponent(jLabel1))
                    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, HeaderLayout.createSequentialGroup()
                        .addContainerGap()
                        .addComponent(jLabel2)))
```

```
        .addContainerGap(30, Short.MAX_VALUE))
);

body.setBackground(new java.awt.Color(102, 204, 255));

jLabel3.setFont(new java.awt.Font("Tahoma", 1, 15)); // NOI18N
jLabel3.setText("Name");

jLabel4.setFont(new java.awt.Font("Tahoma", 1, 15)); // NOI18N
jLabel4.setText("Department");

jLabel5.setFont(new java.awt.Font("Tahoma", 1, 15)); // NOI18N
jLabel5.setText("Staff ID");

jLabel6.setFont(new java.awt.Font("Tahoma", 1, 15)); // NOI18N
jLabel6.setText("Rate Per Day");

jLabel7.setFont(new java.awt.Font("Tahoma", 1, 15)); // NOI18N
jLabel7.setText("No of Working Days");

jLabel8.setFont(new java.awt.Font("Tahoma", 1, 15)); // NOI18N
jLabel8.setText("Overtime");

empname.setFont(new java.awt.Font("Cambria", 0, 14)); // NOI18N
empname.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        empnameActionPerformed(evt);
    }
});

empdepart.setFont(new java.awt.Font("Cambria Math", 0, 14)); // NOI18N
empdepart.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        empdepartActionPerformed(evt);
    }
});
```

```
staffid.setFont(new java.awt.Font("Cambria Math", 0, 14)); // NOI18N
staffid.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        staffidActionPerformed(evt);
    }
});

rpd.setFont(new java.awt.Font("Cambria Math", 0, 14)); // NOI18N
rpd.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        rpdActionPerformed(evt);
    }
});

day.setFont(new java.awt.Font("Cambria Math", 0, 14)); // NOI18N
day.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        dayActionPerformed(evt);
    }
});

Ot.setFont(new java.awt.Font("Cambria Math", 0, 14)); // NOI18N
Ot.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        OtActionPerformed(evt);
    }
});

jButton1.setFont(new java.awt.Font("Tahoma", 0, 16)); // NOI18N
jButton1.setText("Calculate");
jButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton1ActionPerformed(evt);
    }
});
```

```
        jButton2.setFont(new java.awt.Font("Tahoma", 0, 16)); // NOI18N
        jButton2.setText("Clear");
        jButton2.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton2ActionPerformed(evt);
            }
        });

        jLabel9.setIcon(new javax.swing.ImageIcon(getClass().getResource("/BI19110155_EPS/icons8-flower-64.png"))); // NOI18N

        jLabel10.setIcon(new javax.swing.ImageIcon(getClass().getResource("/BI19110155_EPS/icons8-flower-doodle-24.png"))); // NOI18N

        jLabel12.setIcon(new javax.swing.ImageIcon(getClass().getResource("/BI19110155_EPS/icons8-flower-doodle-24.png"))); // NOI18N

        javax.swing.GroupLayout bodyLayout = new javax.swing.GroupLayout(body);
        body.setLayout(bodyLayout);
        bodyLayout.setHorizontalGroup(
            bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(bodyLayout.createSequentialGroup()
                .addGap(36, 36, 36)
                .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(bodyLayout.createSequentialGroup()
                        .addGap(127, 127, 127)
                        .addComponent(jButton1)
                        .addGap(64, 64, 64)
                        .addComponent(jButton2)
                        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                    .addGroup(bodyLayout.createSequentialGroup()
                        .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                            .addGroup(bodyLayout.createSequentialGroup()
                                .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                                    .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
```

```
                        .addComponent(jLabel7)
                        .addComponent(jLabel4, javax.swing.GroupLayout.Alignment.LEADING)
                        .addComponent(jLabel5, javax.swing.GroupLayout.Alignment.LEADING)
                        .addComponent(jLabel6, javax.swing.GroupLayout.Alignment.LEADING)
                        .addComponent(jLabel8, javax.swing.GroupLayout.Alignment.LEADING))
                    .addComponent(jLabel3))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADIN
G, false)
                    .addComponent(day)
                    .addComponent(Ot)
                    .addComponent(empname, javax.swing.GroupLayout.DEFAULT_SIZE, 146,
Short.MAX_VALUE)
                    .addComponent(empdepart)
                    .addComponent(staffid)
                    .addComponent(rpd))
                .addGap(0, 0, Short.MAX_VALUE)
                .addComponent(jLabel12))
            .addGroup(bodyLayout.createSequentialGroup()
                .addGap(510, 510, 510)
                .addComponent(jLabel10)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                .addComponent(jLabel9)))
            .addGap(25, 25, 25))))
    );
    bodyLayout.setVerticalGroup(
        bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(bodyLayout.createSequentialGroup()
            .addGap(25, 25, 25)
            .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addGroup(bodyLayout.createSequentialGroup()
                    .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                        .addComponent(jLabel3)
                        .addComponent(empname, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
                    .addGap(33, 33, 33)
                    .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
```

```
                .addComponent(jLabel4)
                .addComponent(empdepart, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(32, 32, 32)
            .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(jLabel5)
                .addComponent(staffid, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(31, 31, 31)
            .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(jLabel6)
                .addComponent(rpd, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(28, 28, 28)
            .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(jLabel7)
                .addComponent(day, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(29, 29, 29)
            .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(jLabel8)
                .addComponent(Ot, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 50,
Short.MAX_VALUE)
            .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(jButton1)
                .addComponent(jButton2))
            .addGap(27, 27, 27))
        .addGroup(bodyLayout.createSequentialGroup()
            .addGroup(bodyLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addComponent(jLabel9)
                .addGroup(bodyLayout.createSequentialGroup()
                    .addGap(29, 29, 29)
                    .addComponent(jLabel10)))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
            .addComponent(jLabel12)
            .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))))
```

```
        );

        javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(Header, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addComponent(body, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addComponent(Header, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(body, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
        );

        Header.getAccessibleContext().setAccessibleName("");

        pack();
        setLocationRelativeTo(null);
    }// </editor-fold>

    private void empnameActionPerformed(java.awt.event.ActionEvent evt) {
        String name = empname.getText();
    }

    private void staffidActionPerformed(java.awt.event.ActionEvent evt) {
         String id2 = staffid.getText();
    }

    private void OtActionPerformed(java.awt.event.ActionEvent evt) {
        int ot_days = Integer.parseInt(Ot.getText());
```

```
}

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    empname.setText(" ");
    empdepart.setText(" ");
    staffid.setText(" ");
    rpd.setText(" ");
    day.setText(" ");
    Ot.setText(" ");
}

private void empdepartActionPerformed(java.awt.event.ActionEvent evt) {
     String depart2 = empdepart.getText();
}

private void rpdActionPerformed(java.awt.event.ActionEvent evt) {
    double emp_rate = Double.parseDouble(rpd.getText());
}

private void dayActionPerformed(java.awt.event.ActionEvent evt) {
    int emp_days = Integer.parseInt(day.getText());
}

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {


        String name = empname.getText(); //To get employee's name text
        String depart2 = empdepart.getText(); //To get employee's department text
        String id2 = staffid.getText(); //To get employee's id text

        double emp_rate = Double.parseDouble(rpd.getText());  //To get rate per day text
        int emp_days = Integer.parseInt(day.getText());  //To get number of working days text
        int ot_days = Integer.parseInt(Ot.getText());  //To get overtime text

        calculateot = (emp_rate / 8 * ot_days); //overtime calculation formula
        totalgross = (emp_rate * emp_days); //gross salary calculation formula
```

```
        totalgross = (calculateot + dsall + nsall + totalgross); //total gross salary calculation formula
        calculateepf = (emp_rate * 7 / 100) * emp_days; //epf calculation formula
        socso = (emp_rate * 2 / 100) * emp_days; //socso calculation formula
        totaldeduction = calculateepf + socso; //total deduction calculation formula
        totalsalary = totalgross - totaldeduction; //total salary calculation formula



        Payroll_frame nfl = new Payroll_frame();
        Payroll_frame.empname_label.setText(this.empname.getText());
        Payroll_frame.empdepart_label.setText(this.empdepart.getText());
        Payroll_frame.staffid_label.setText(this.staffid.getText());

        Payroll_frame.epf_label.setText(this.calculateepf());
        Payroll_frame.socso_label.setText(this.socso());
        Payroll_frame.tgs_label.setText(this.totalgross());
        Payroll_frame.td_label.setText(this.totaldeduction());
        Payroll_frame.ts_label.setText(this.totalsalary());



        nfl.setVisible(true);
        dispose();


}

/**
 * @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(EmployeePayrollSystem.class.getName()).log(java.util.logging.Level.SEVE
RE, null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(EmployeePayrollSystem.class.getName()).log(java.util.logging.Level.SEVE
RE, null, ex);
        } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(EmployeePayrollSystem.class.getName()).log(java.util.logging.Level.SEVE
RE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(EmployeePayrollSystem.class.getName()).log(java.util.logging.Level.SEVE
RE, null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new EmployeePayrollSystem().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JPanel Header;
    private javax.swing.JTextField Ot;
    private javax.swing.JPanel body;
    private javax.swing.JTextField day;
```

```
private javax.swing.JTextField empdepart;
private javax.swing.JTextField empname;
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel10;
private javax.swing.JLabel jLabel11;
private javax.swing.JLabel jLabel12;
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.JLabel jLabel7;
private javax.swing.JLabel jLabel8;
private javax.swing.JLabel jLabel9;
private javax.swing.JTextField rpd;
private javax.swing.JTextField staffid;
// End of variables declaration

private String calculateepf() {
    return null;
    //add appropiate code here
}

private String socso() {
    return null;
    //add appropiate code here
}

private String totalgross() {
    return null;
    //add appropiate code here
}

private String totaldeduction() {
```

```
        return null;
        //add appropiate code here
    }

    private String totalsalary() {
        return null;
        //add appropiate code here
    }
}
```

Conclusion

In conclusion, this payroll system is designed for the enhancement or development of Computerized Payroll System. It includes the features that can Add Employees record, Edit Employees information, Clear Employees record, print / Save the Pay Slip of each employee as well as the rate per day, overtime, allowances, Gross salary, Total Gross payment, and Deduction of EPF and SOCSO, adding up with , a log-in log-out process for security purpose. Moreover, with help file can be used by the users to know how to use the payroll software.