**PROJECT** (**Reading from a Sequential File**)

**Source code:**

/\*

Program to read payroll information

from payroll.txt data file and display

it to the user.

Programmer: Hong Zhang,

File Name: ReadData.java

\*/

**import** javax.swing.JOptionPane;

**import** java.io.\*;

**import** java.text.DecimalFormat;

**public** **class** ReadData {

DecimalFormat twoDecimal = **new** DecimalFormat("0.00");

**public** ReadData () {

**try** {

// declare variables

String[] firstLine = **new** String[100],

secondLine = **new** String[100],

thirdLine = **new** String[100];

**double** hours[] = **new** **double**[100],

wages[] = **new** **double**[100],

overTimePay[] = **new** **double**[100],

grossPay[] = **new** **double**[100];

**int** index;

**for** (index = 0; index < 100; index++) {

firstLine[index] = "";

secondLine[index] = "";

thirdLine[index ] = "";

hours[index] = 0.0;

wages[index]= 0.0;

overTimePay[index]= 0.0;

grossPay[index]= 0.0;

}

FileReader file = **new** FileReader("payroll.txt");

BufferedReader buffer = **new** BufferedReader(file);

index = 0;

String line;

File check = **new** File("Overtime.txt");

FileWriter fileOvertime;

**if**(check.exists())

fileOvertime = **new** FileWriter("Overtime.txt", **true**);

**else**

fileOvertime = **new** FileWriter("Overtime.txt");

BufferedWriter bufferOvertime = **new** BufferedWriter(fileOvertime);

**while**((line = buffer.readLine()) != **null**) {

// read data from payroll.txt

firstLine[index] = line;

secondLine[index] = buffer.readLine();

thirdLine[index ] = buffer.readLine();

hours[index] = Double.*parseDouble*(secondLine[index]);

wages[index] = Double.*parseDouble*(thirdLine[index]);

// calculate overtime pay and gross pay

**if** (hours[index] <= 40)

overTimePay[index] = 0.0;

**else** **if** (hours[index] > 40)

overTimePay[index] =

(hours[index] - 40) \* wages[index] \* 1.5;

**if** (hours[index] <= 40)

grossPay[index] = hours[index] \* wages[index];

**else** **if** (hours[index] > 40)

grossPay[index] = 40 \* wages[index]

+ overTimePay[index];

// write data into Overtime.txt

bufferOvertime.write(line);

bufferOvertime.newLine();

bufferOvertime.write(twoDecimal.format(overTimePay[index]));

bufferOvertime.newLine();

JOptionPane.*showMessageDialog*(**null**,

"Name: " + firstLine[index] + "\n"

+ "Hours: " + hours[index] + "\n"

+ "Wages: $" + twoDecimal.format(wages[index]) + "\n"

+ "Gross Pay: $" + twoDecimal.format(grossPay[index]),

"Result", JOptionPane.***PLAIN\_MESSAGE*** );

index++;

}

buffer.close();

bufferOvertime.close();

}

**catch** (IOException e ) {

System.***out***.println(e);

}

} // end ReadData ()

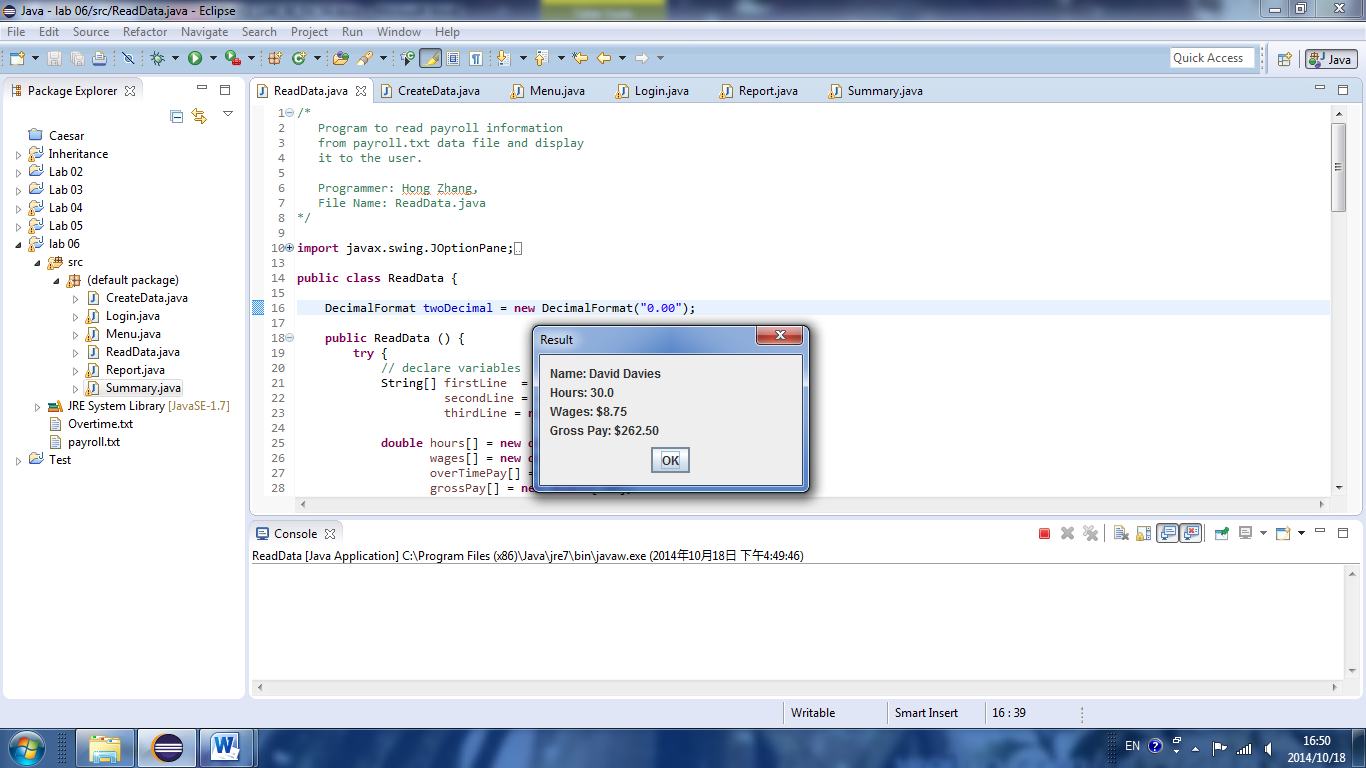
**public** **static** **void** main(String[] args) {

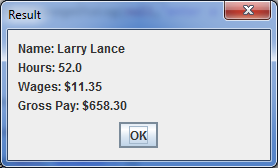
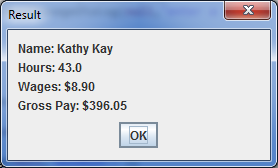
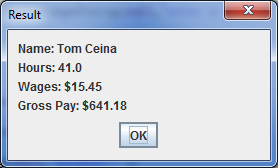
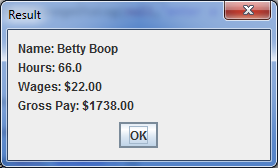
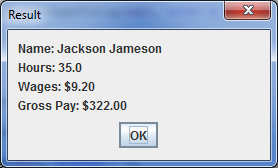
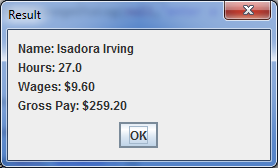
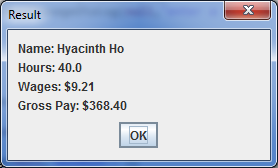
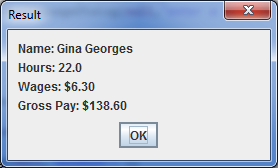
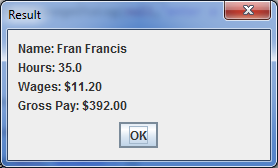
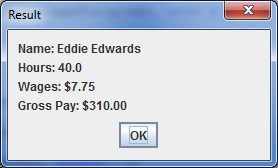
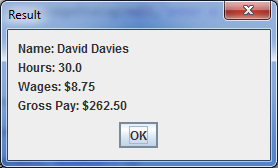
**new** ReadData();

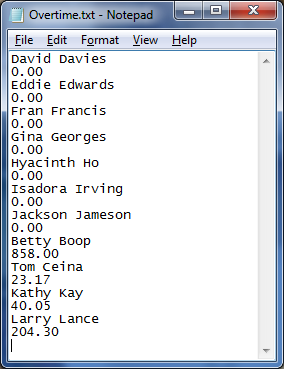
} // end main

} // end class

**Sample Output:**







**PROJECT** ( **Report Writing** )

**Source code:**

/\*

program to generate a report for each individual

employee whose payroll data is requested.

Programmer: Hong Zhang,

File Name: Report.java

\*/

**import** java.io.\*;

**import** javax.swing.JOptionPane;

**import** java.text.DecimalFormat;

**import** java.util.ArrayList;

**import** java.util.Collections;

**import** java.util.List;

**public** **class** Report {

// declare variables

String firstLine = " ",

secondLine = " ",

thirdLine = " ";

**int** hours = 0;

**double** wages = 0,

grosspay = 0,

overpay = 0;

DecimalFormat twoDecimal = **new** DecimalFormat("0.00");

**static** ArrayList<String> *empNames* = **new** ArrayList<String>();

**public** Report() **throws** Exception {

//code here the logic to create a report for the user

FileReader file = **new** FileReader("payroll.txt");

BufferedReader buffer = **new** BufferedReader(file);

String line;

// read the file from payroll.txt

**while** ((line = buffer.readLine()) != **null**) {

firstLine = line;

secondLine = buffer.readLine();

thirdLine = buffer.readLine();

*empNames*.add(line);

}//end while

buffer.close();

file.close();

String empList = "";

Collections.*sort*(*empNames*);

**for** (String str : *empNames*)

empList += str + "\n";

//Employee Listing (names)

JOptionPane.*showMessageDialog*(**null**, "Name:\n" + empList,

"Employee Listing", JOptionPane.***PLAIN\_MESSAGE***);

//Get input then of desired employee name to save employee data to a file

String userInput = " ";

userInput = JOptionPane.*showInputDialog*("To get a payroll report, "

+ "enter a name from the list: \n" + empList);

**while** (userInput == **null** || userInput.equals(""))

userInput = JOptionPane.*showInputDialog*("To get a payroll report, "

+ "enter a name from the list: \n" + empList);

// find the name if it exists in the list

**boolean** isExist = **false**;

**for**(String string : *empNames*){

**if**((string.toUpperCase()).matches(userInput.toUpperCase())) {

isExist = **true**;

**break**;

}

}

// if exists, create the file to store the report

**if**(isExist) {

// search this employee's information from payroll.txt

FileReader file1 = **new** FileReader("payroll.txt");

BufferedReader buffer1 = **new** BufferedReader(file1);

**while**((line = buffer1.readLine()) != **null**) {

firstLine = line;

secondLine = buffer1.readLine();

thirdLine = buffer1.readLine();

**if**((userInput.toUpperCase()).matches(line.toUpperCase())) {

File check = **new** File(line.charAt(0) +

userInput.substring(line.indexOf(' ') + 1)

+ ".txt");

FileWriter file2;

**if**(check.exists())

file2 = **new** FileWriter(line.charAt(0) +

userInput.substring(line.indexOf(' ') + 1)

+ ".txt", **true**);

**else**

file2 = **new** FileWriter(line.charAt(0) +

userInput.substring(line.indexOf(' ') + 1)

+ ".txt");

BufferedWriter buffer2 = **new** BufferedWriter(file2);

hours = Integer.*parseInt*(secondLine);

wages = Double.*parseDouble*(thirdLine);

**if** (hours <= 40)

overpay = 0.0;

**else** **if** (hours > 40)

overpay = (hours - 40) \* wages \* 1.5;

**if** (hours <= 40)

grosspay = hours \* wages;

**else** **if** (hours > 40)

grosspay = 40 \* wages + overpay;

// write this report to his file

buffer2.write("\*\*\*\*\*\*\*\*\*\* Payroll Report \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

buffer2.newLine();

buffer2.write("");

buffer2.newLine();

buffer2.write("Employee Name: " + line);

buffer2.newLine();

buffer2.write("Hours: " + hours);

buffer2.newLine();

buffer2.write("Wages: $" + twoDecimal.format(wages));

buffer2.newLine();

buffer2.write("Gross Pay: $" + twoDecimal.format(grosspay));

buffer2.newLine();

buffer2.write("Overtime Pay: $" + twoDecimal.format(overpay) +

" (include in gross pay)");

buffer2.newLine();

buffer2.write("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

buffer2.newLine();

buffer2.close();

**break**;

}

}

buffer1.close();

file1.close();

// show this report in GUI dialog box

JOptionPane.*showMessageDialog*(**null**,

"\*\*\*\*\*\*\*\*\*\* Payroll Replort \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n"

+ "Employee Name: " + line + "\n"

+ "Hours: " + hours + "\n"

+ "Wages: $" + twoDecimal.format(wages) + "\n"

+ "Gross Pay: $" + twoDecimal.format(grosspay) + "\n"

+ "Overtime Pay: $" + twoDecimal.format(overpay) + "\n" +

"\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*",

"Result", JOptionPane.***PLAIN\_MESSAGE*** );

// "Report Generated" Notification

JOptionPane.*showMessageDialog*(**null**, "Report Generated.",

"Result", JOptionPane.***PLAIN\_MESSAGE***);

}

//Error Message

**else** {

JOptionPane.*showMessageDialog*(**null**,

"Error!! Name invalid or doesn't exist, please try again.");

}

// clear the whole data in empNames

*empNames*.clear();

} //END of Public Report ()

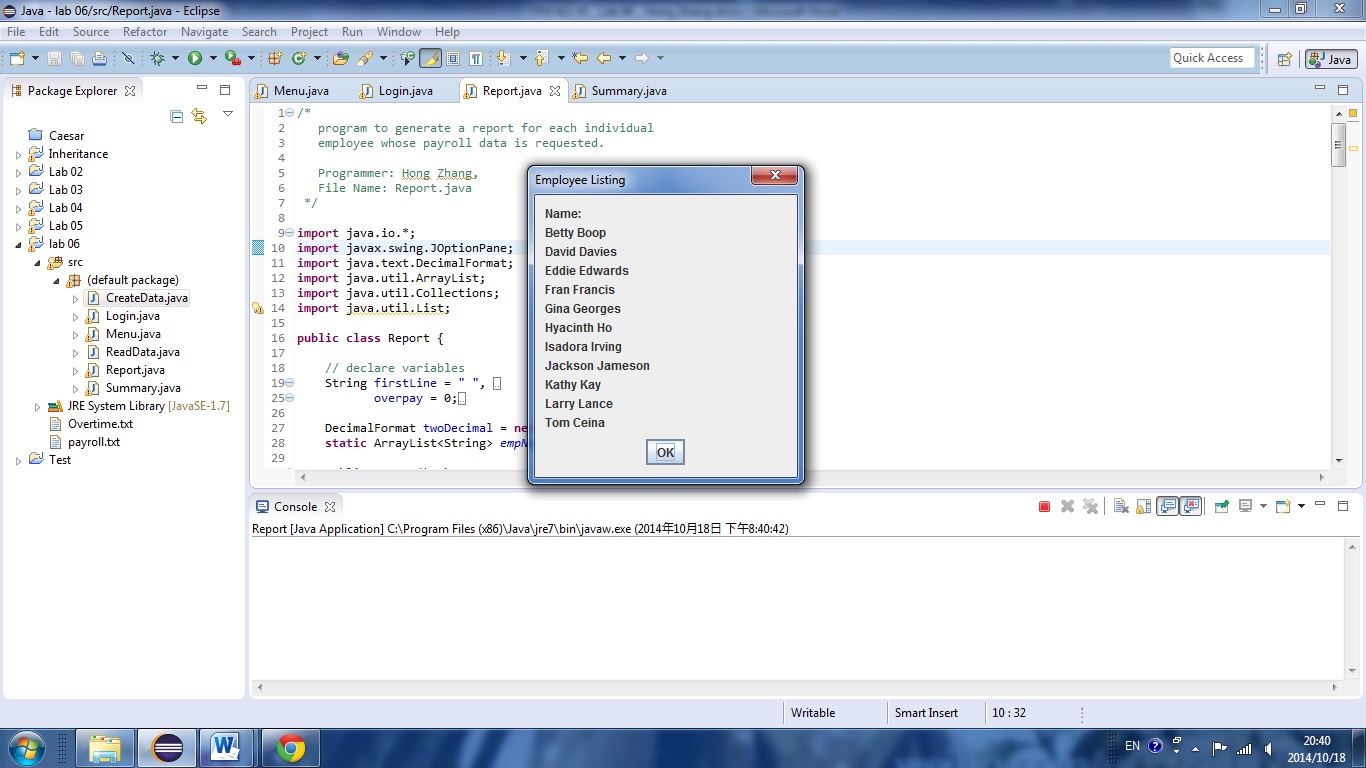
**public** **static** **void** main(String[] args) **throws** Exception {

**new** Report();

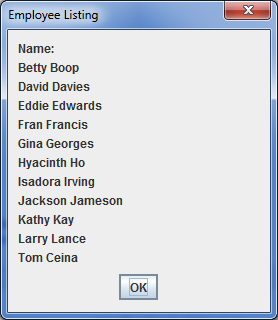
} //End of Main

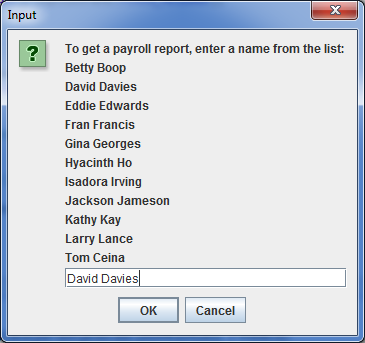
} // End of Report Class

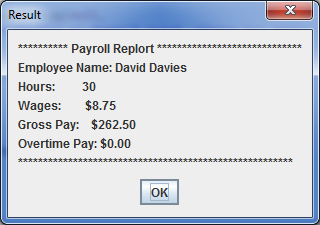
**Sample Output:**

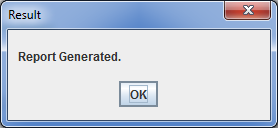


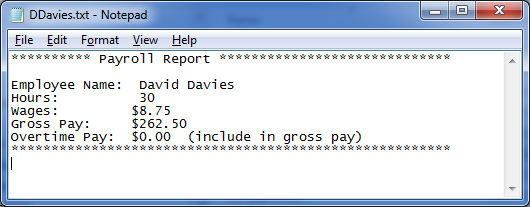
**payroll report for an employee without overtime pay:**



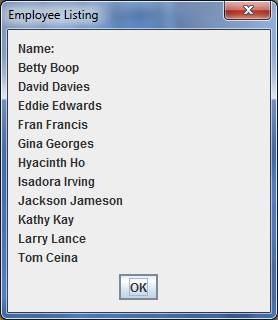


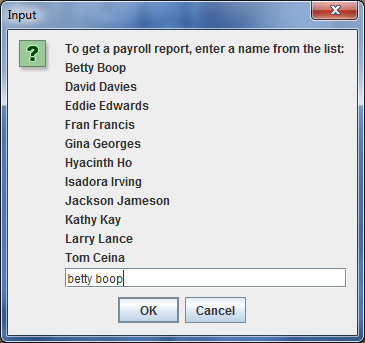


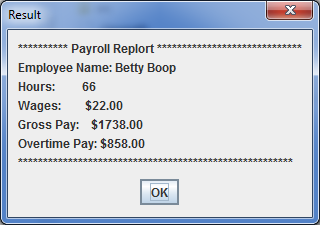


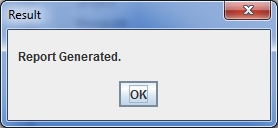


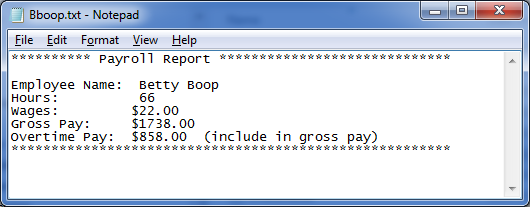
**payroll report for an employee with overtime pay:**



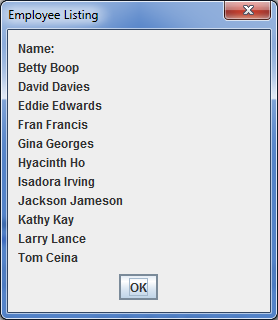


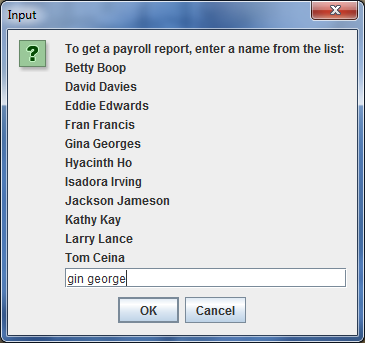


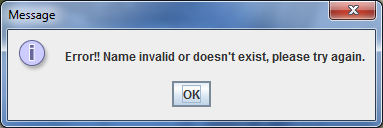




**an example search request when an employee’s name is not on the list:**







**PROJECT ( Creating a Menu Dialog Box )**

**Source code:**

/\*

Program to creates a menu

Programmer: Hong Zhang,

File Name: Menu.java

\*/

**import** java.awt.Graphics;

**import** java.util.regex.Pattern;

**import** javax.swing.JOptionPane;

//programmer: Hong Zhang

**public** **class** Menu {

**public** Menu() {

String message = "welcome" + "\n", response;

message += "\n" + "enter...";

message += "\n" + " 1 to enter payroll data";

message += "\n" + " 2 to view payroll data";

message += "\n" + " 3 to generate report by employee";

message += "\n" + " 4 to exit" + "\n" + " ";

**char** answer = 'Y';

**do** {

**try** {

response = JOptionPane.*showInputDialog*(message);

**while** (response == **null** || response.equals(""))

response = JOptionPane.*showInputDialog*(message);

// judge if input is string or number

**boolean** isNumeric = **true**;

**for** (**int** i = response.length(); --i >=0;) {

**if**(!Character.*isDigit*(response.charAt(i))) {

isNumeric = **false**;

}

}

**if** (isNumeric == **false**) {

JOptionPane.*showMessageDialog*(**null**,

"Please enter 1-4 and try again", "Result",

JOptionPane.***PLAIN\_MESSAGE*** );

}

**else**

{

**int** choice = Integer.*parseInt*(response);

**switch** (choice) {

**case** 1: CreateData cd = **new** CreateData();

answer = 'Y'; //System.exit(1);

**break**;

**case** 2: ReadData rd = **new** ReadData();

answer = 'Y'; //System.exit(1);

**break**;

**case** 3: Report rpt = **new** Report();

answer = 'Y'; //System.exit(1);

**break**;

**case** 4: answer = 'N'; //System.exit(1);

**break**;

**default**: { answer = 'Y'; choice = 0;

JOptionPane.*showMessageDialog*(**null**,"enter a number: 1 - 4");

}

}//end switch

}

}//end try

**catch** (Exception e ) { System.***out***.println(e); }

} **while**(answer == 'Y' || answer == 'y');

JOptionPane.*showMessageDialog*(**null**,"Goodbye!!");

}

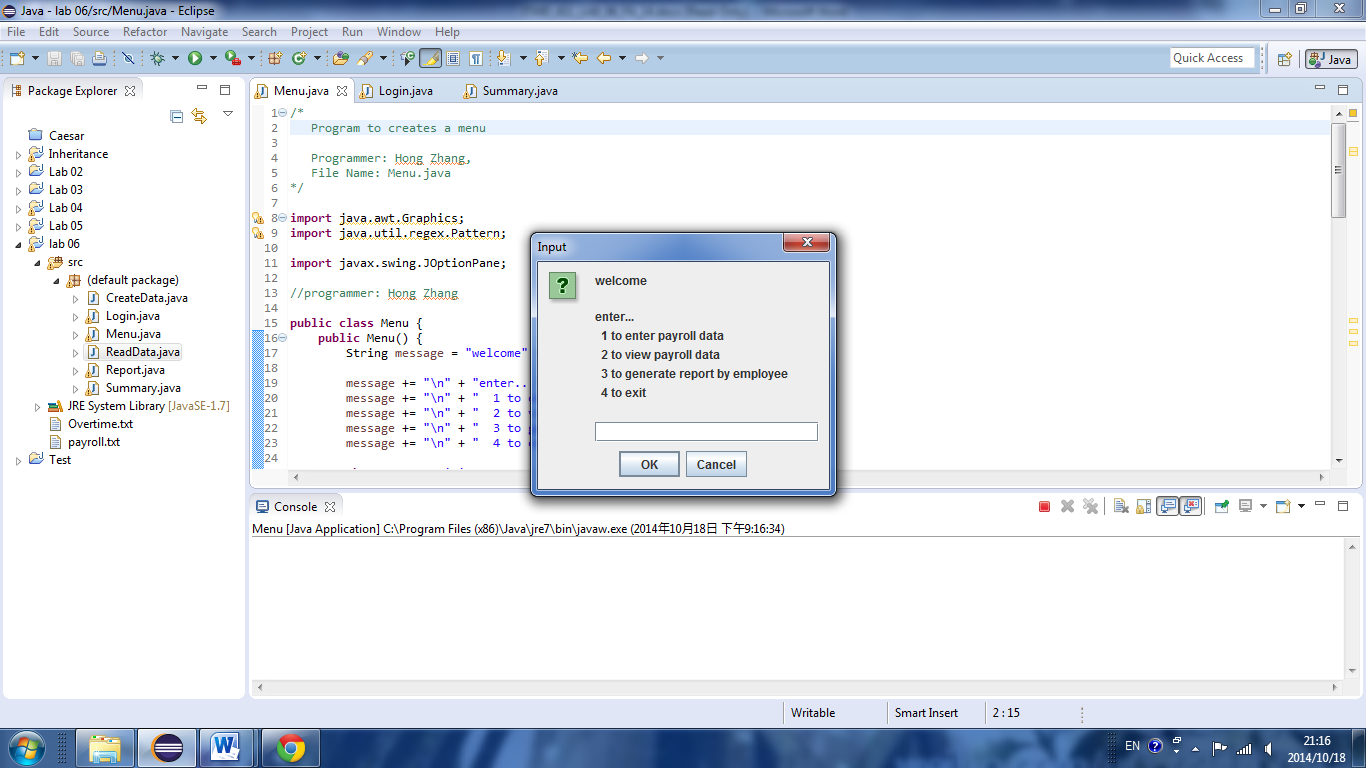
**public** **static** **void** main(String[] args) {

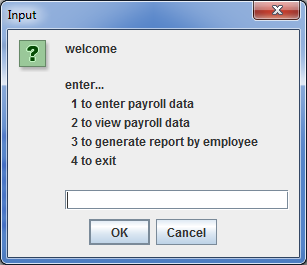
**new** Menu();

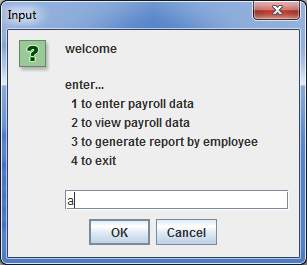
}//end main

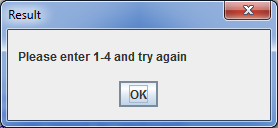
}//end class

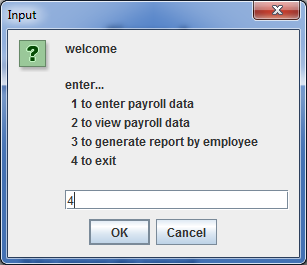
**Sample Output:**

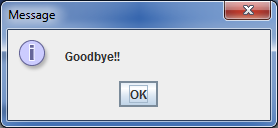












**PROJECT (Creating an Login Entry Dialog Box)**

**Source code:**

/\*

Program to require a login entry screen

to access a main program

Programmer: Hong Zhang,

File Name: Login.java

\*/

**import** java.awt.Graphics;

**import** javax.swing.JOptionPane;

**import** java.lang.String;

**public** **class** Login {

**public** **static** **void** main(String[] args) {

// declare variables

**boolean** access = **false**;

**boolean** nameMatch = **false**;

**boolean** passwordMatch = **false**;

**int** nameAttempts = 0;

**int** passwordAttempts = 0;

String name;

String password;

// enter username

String message = "welcome" + "\n", response;

message += "enter your name";

message += "\n" + " ";

**do** {

name = JOptionPane.*showInputDialog*(message);

name = name.trim();

name = name.toUpperCase();

**if** (name.equals("SAMMY")){

nameMatch = **true**;

JOptionPane.*showMessageDialog*(**null**,"hello " + name);

**break**;

}

**else**

JOptionPane.*showMessageDialog*(**null**, "Incorrect login name!");

nameAttempts++;

} **while**(nameAttempts < 3 && nameMatch == **false**);

**if** (nameAttempts == 3 && nameMatch == **false**)

System.*exit*(1);;

// enter password

message = "enter your password";

message += "\n" + " ";

**do** {

password = JOptionPane.*showInputDialog*(message);

password = password.trim();

password = password.toUpperCase();

**if** (password.equals("AUTUMN")){

passwordMatch = **true**;

access = **true**;

**break**;

}

**else**

JOptionPane.*showMessageDialog*(**null**, "Incorrect Password!");

passwordAttempts++;

} **while**(passwordAttempts < 3 && passwordMatch == **false**);

**if**(access == **true**) {

**try** {

Menu m = **new** Menu();

System.*exit*(1);

}

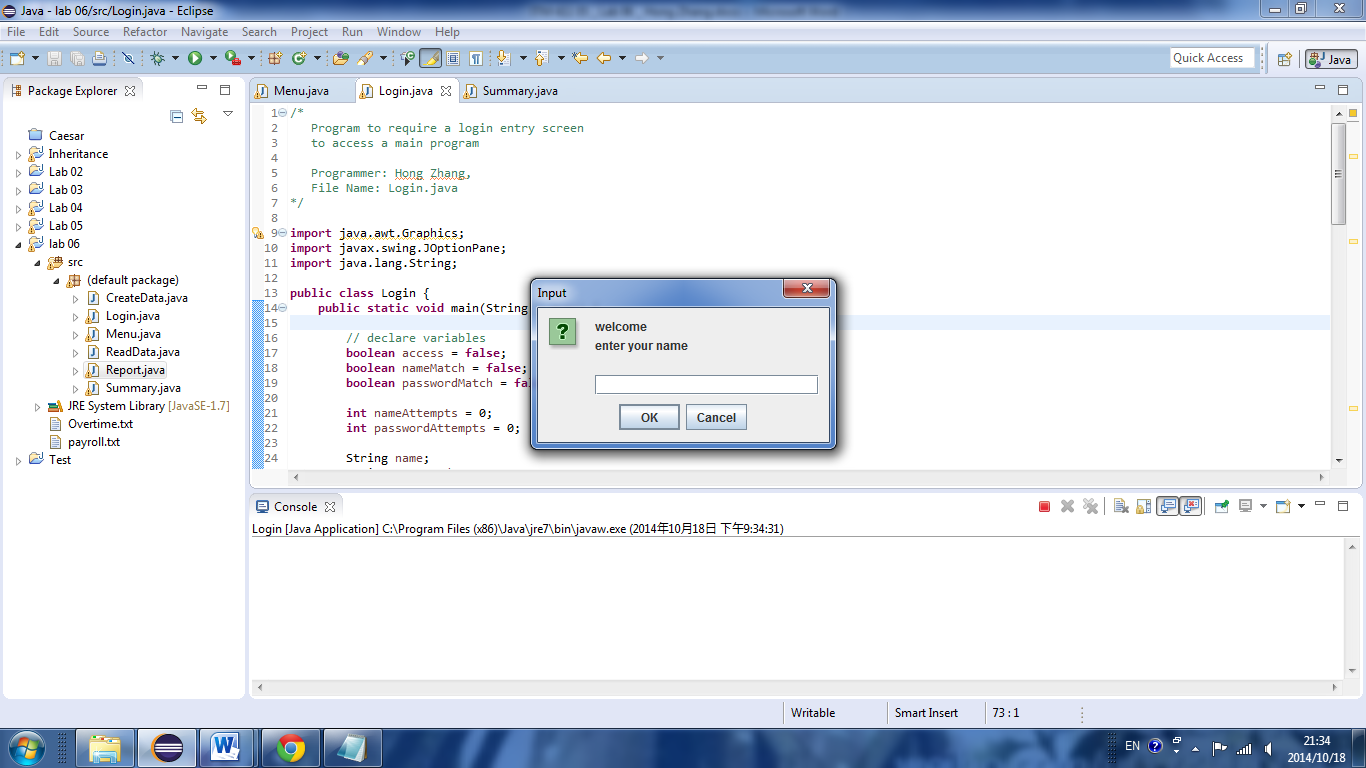
**catch** (Exception e) { System.***out***.println(e);}

}

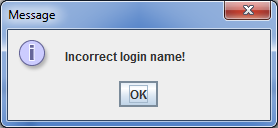
}//end main

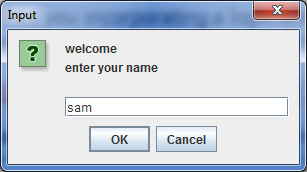
}//end class

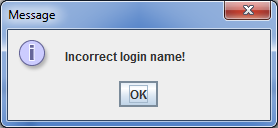
**Sample Output:**

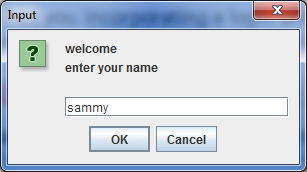


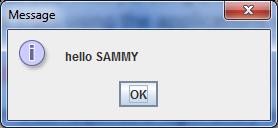


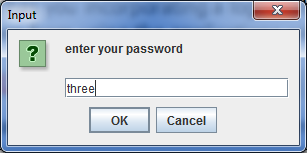


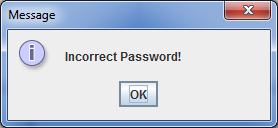


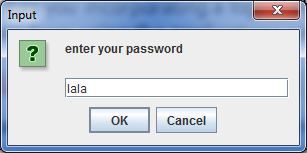


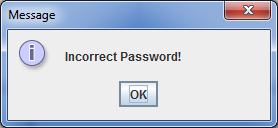


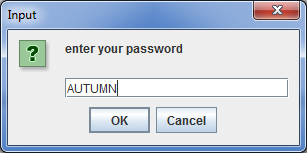


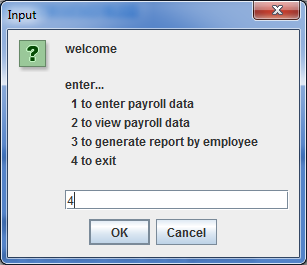


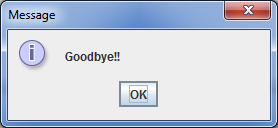












**PROJECT (Implementing Control - Break Logic)**

**Source code:**

/\*

Program to creates a menu

Programmer: Hong Zhang,

File Name: Menu.java

\*/

**import** java.awt.Graphics;

**import** java.util.regex.Pattern;

**import** javax.swing.JOptionPane;

//programmer: Hong Zhang

**public** **class** Menu {

**public** Menu() {

String message = "welcome" + "\n", response;

message += "\n" + "enter...";

message += "\n" + " 1 to enter payroll data";

message += "\n" + " 2 to view payroll data";

message += "\n" + " 3 to generate report by employee";

message += "\n" + " 4 to view overtime pay data";

message += "\n" + " 5 to exit" + "\n" + " ";

**char** answer = 'Y';

**do** {

**try** {

response = JOptionPane.*showInputDialog*(message);

**while** (response == **null** || response.equals(""))

response = JOptionPane.*showInputDialog*(message);

// judge if input is string or number

**boolean** isNumeric = **true**;

**for** (**int** i = response.length(); --i >=0;) {

**if**(!Character.*isDigit*(response.charAt(i))) {

isNumeric = **false**;

}

}

**if** (isNumeric == **false**) {

JOptionPane.*showMessageDialog*(**null**,

"Please enter 1-5and try again", "Result",

JOptionPane.***PLAIN\_MESSAGE*** );

}

**else**

{

**int** choice = Integer.*parseInt*(response);

**switch** (choice) {

**case** 1: CreateData cd = **new** CreateData();

answer = 'Y'; //System.exit(1);

**break**;

**case** 2: ReadData rd = **new** ReadData();

answer = 'Y'; //System.exit(1);

**break**;

**case** 3: Report rpt = **new** Report();

answer = 'Y'; //System.exit(1);

**break**;

**case** 4: Summary op = **new** Summary();

answer = 'Y'; //System.exit(1);

**break**;

**case** 5: answer = 'N'; //System.exit(1);

**break**;

**default**: { answer = 'Y'; choice = 0;

JOptionPane.*showMessageDialog*(**null**,"enter a number: 1 - 4");

}

}//end switch

}

}//end try

**catch** (Exception e ) { System.***out***.println(e); }

} **while**(answer == 'Y' || answer == 'y');

JOptionPane.*showMessageDialog*(**null**,"Goodbye!!");

}

**public** **static** **void** main(String[] args) {

**new** Menu();

}//end main

}//end class

**Sample Output:**

