UNIVERSITY OF COLOMBO

IT 3003- Advanced Programming Techniques
2022

MINI PROJECT

SIMPLE HISTORY APPLICATION

Name: H.A.S.C.Piyumal

Index: s14851

Date: 10/11/2022

TABLE OF CONTENTS

1 INTRODUCTION

❖ Because of the current situation of the country, the education of the student has discouraged. And also, the process of physical teaching methods has failed. So, online teaching methods or non-physical teaching methods are occurred. But the lack of the connection facilities online teaching methods are discouraged. The program was developed for encourage offline learning methods. The program was an app for study great kings of Sri Lanka. There are two combo boxes label as kingdom & king. The combo box labeled as kingdom has several kingdoms of Sri Lanka. Another combo box labeled as king of Sri Lanka. When, the kingdom is selected from the combo box. Relevant kings are occurred in the combo box labeled as king. After selecting the king who want study, the search button could be clicked. Then some information are applied in a text area. It is the normal procedure of the application. To develop this application, Java Eclipse IDE was used. The swing application was used. The java graphic user interface was used for it. The project platform of the program is Java. The programming language is SWING. The IDE was Eclipse.

2 FUNCTIONALITIES

Graphic user interface of the Java application was used to design the window of the application. There are 3 labels, 2 combo boxes, one button & one text area included for application. There are some functionalities used for above components. The special functionalities were included for combo boxes, search button & text area among them.

2.1 Combo Boxes

Some functionalities are declared to select kingdom from the combo box. This combo box assigned as comboKingdom.

```
comboKingdom.setModel(new DefaultComboBoxModel(new String[] {"Anuradhapura",
"Polonnaruva", "Dhabadeniya", "Yapahuva","Kurunegala"}));
```

The names of the kingdom are declared to combo box like as above. Then used if statements to apply respective kings names in the combo box labeled as king. This combo box assigned as comboKing.

```
if(comboKingdom.getSelectedItem().equals("Anuradhapura")) {

    comboKing.removeAllItems();
    comboKing.addItem("King Dutugemunu");
    comboKing.addItem("King Walagambahu");
    comboKing.addItem("King Dhatusena");
    comboKing.setSelectedItem(null);


}else if(comboKingdom.getSelectedItem().equals("Polonnaruva")) {

    comboKing.removeAllItems();
    comboKing.addItem("King Vijayabahu I");
    comboKing.addItem("King Parakramabahu I");
    comboKing.addItem("King Nissanka Malla");
    comboKing.setSelectedItem(null);

}else if(comboKingdom.getSelectedItem().equals("Dhabadeniya")) {

    comboKing.removeAllItems();
    comboKing.addItem("King Vijayabahu III");
    comboKing.addItem("King Parakkamabahu II");
    comboKing.addItem("King Vijayabahu IV");
    comboKing.setSelectedItem(null);

}else if(comboKingdom.getSelectedItem().equals("Yapahuva")) {
```

Figure 1: If statements for combo box 2

Firstly check whether, the selected item of the comboKingdom combo box, if it equals "Anuradhapura" , the items of comboKing combo box were removed. Then add items as "King Dutugemunu", "King Walagambahu" & "King Dhatusena ". It has assigned default selected item as null.if this condition is false , next condition was considered.
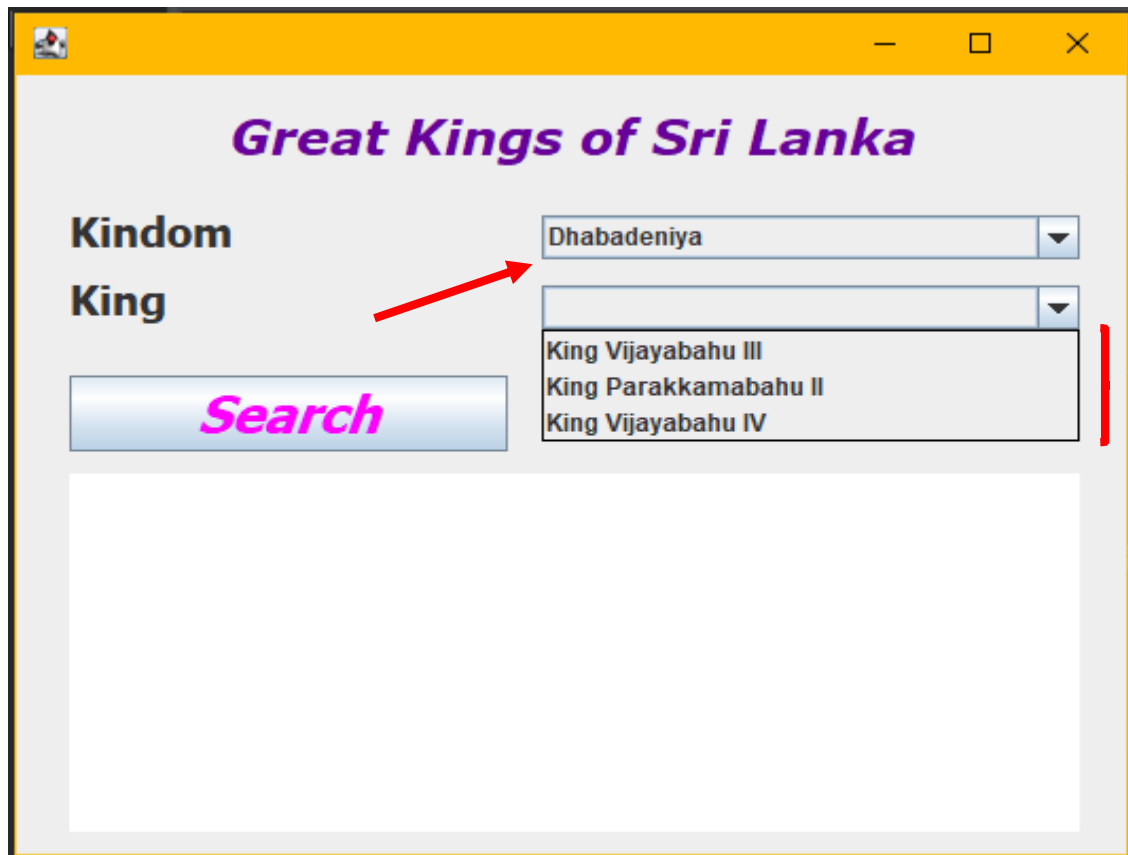

Figure 2: Selecting variables from combo boxes.

2.2   Text Area

After the king is selected & the button assigned as btnSubmit is clicked, some infomation is applied on text area assigned astextArea. For this procedure, if conditional statements are used.

```
if(comboKing.getSelectedItem().equals("King Dutugemunu")) {
    textArea.setText(null);
    textArea.setText("King Dutugamunu (161-137 BC.) was one of such great kings, who was able to rule the country in one sovereignty.
}else if(comboKing.getSelectedItem().equals("King Walagambahu")) {
    textArea.setText(null);
    textArea.setText("King Walagambahu (103-102 BC. and 89-77 BC.) was another king, who brought the country under one flag by defeat:
}else if(comboKing.getSelectedItem().equals("King Dhatusena")) {
    textArea.setText(null);
    textArea.setText("After the death of King Mahanama (410-432 AD.) South Indian invaders ruled the country and King Dhatusena (459-4

}else if(comboKing.getSelectedItem().equals("King Vijayabahu I")) {
    textArea.setText(null);
    textArea.setText("vijayabahu I (born, Prince Kitti ) (ruled 1055-1110) was a medieval king of Sri Lanka. Born to a royal bloodline
}else if(comboKing.getSelectedItem().equals("King Parakramabahu I")) {
    textArea.setText(null);
    textArea.setText("'Maha Parākramabāhu' (Parākramabāhu the Great);1123-1186 was king of Sri Lanka from 1153 to 1186. During his re:
}else if(comboKing.getSelectedItem().equals("King Nissanka Malla")) {
    textArea.setText(null);
    textArea.setText("Nissanka Malla, also known as Kirti Nissanka and Kalinga Lokesvara was a king of Sri Lanka who ruled the country

}else if(comboKing.getSelectedItem().equals("King Vijayabahu III")) {
    textArea.setText(null);
    textArea.setText("Vijayabahu III was the first King of Dambadeniya in the century, who ruled from 1220 to 1224. He was a member of
}else if(comboKing.getSelectedItem().equals("King Parakkamabahu II")) {
    textArea.setText(null);
    textArea.setText("Parakkamabahu II was King of Dambadeniya in the 13th century, who ruled from 1234 to 1269. He succeeded his fatl
```

Figure 3: If statements used for button

Firstly check whether what king has selected in the combo box assigned as comboKing.then set text in the text area about relevent king. As a example, Suppose that the selected variable for comboKing combobox is "King Vijayabahu 1" the text in the text area will be "vijayabahu I (born, Prince Kitti) (ruled 1055–1110) was a medieval king of Sri Lanka....".

2.3 Button

The button has connection with combKing combo box and text area combo box.For it, the method has created named as `actionPerformed` & has called if statements above discribed. When,clicking the search button with out selecting a King. There is a error occured. For fix it, the exception handling part is used. "try {} catch(){}" block has used for it.
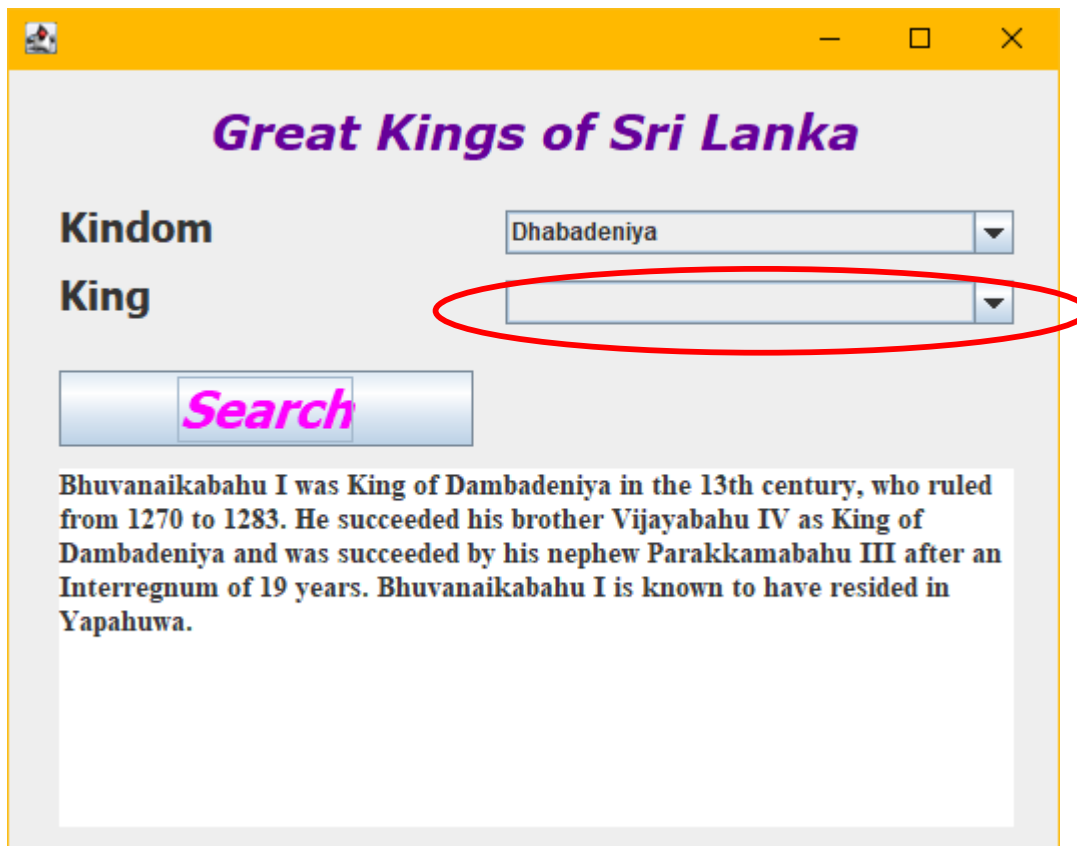

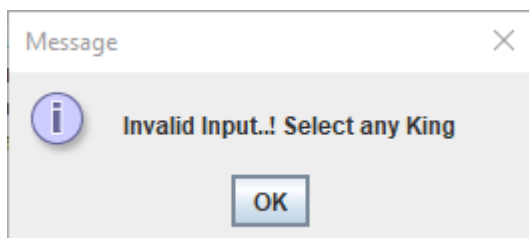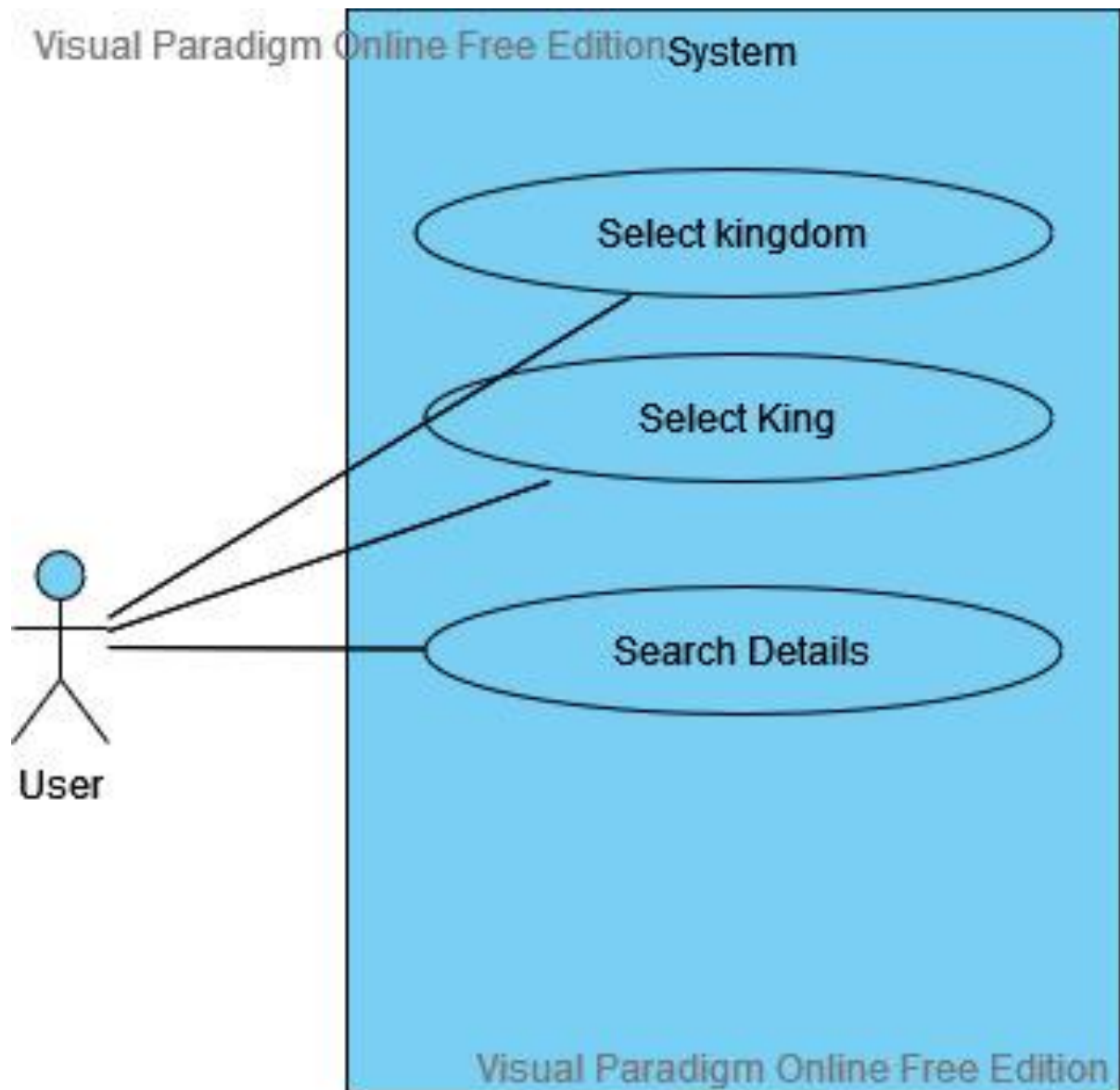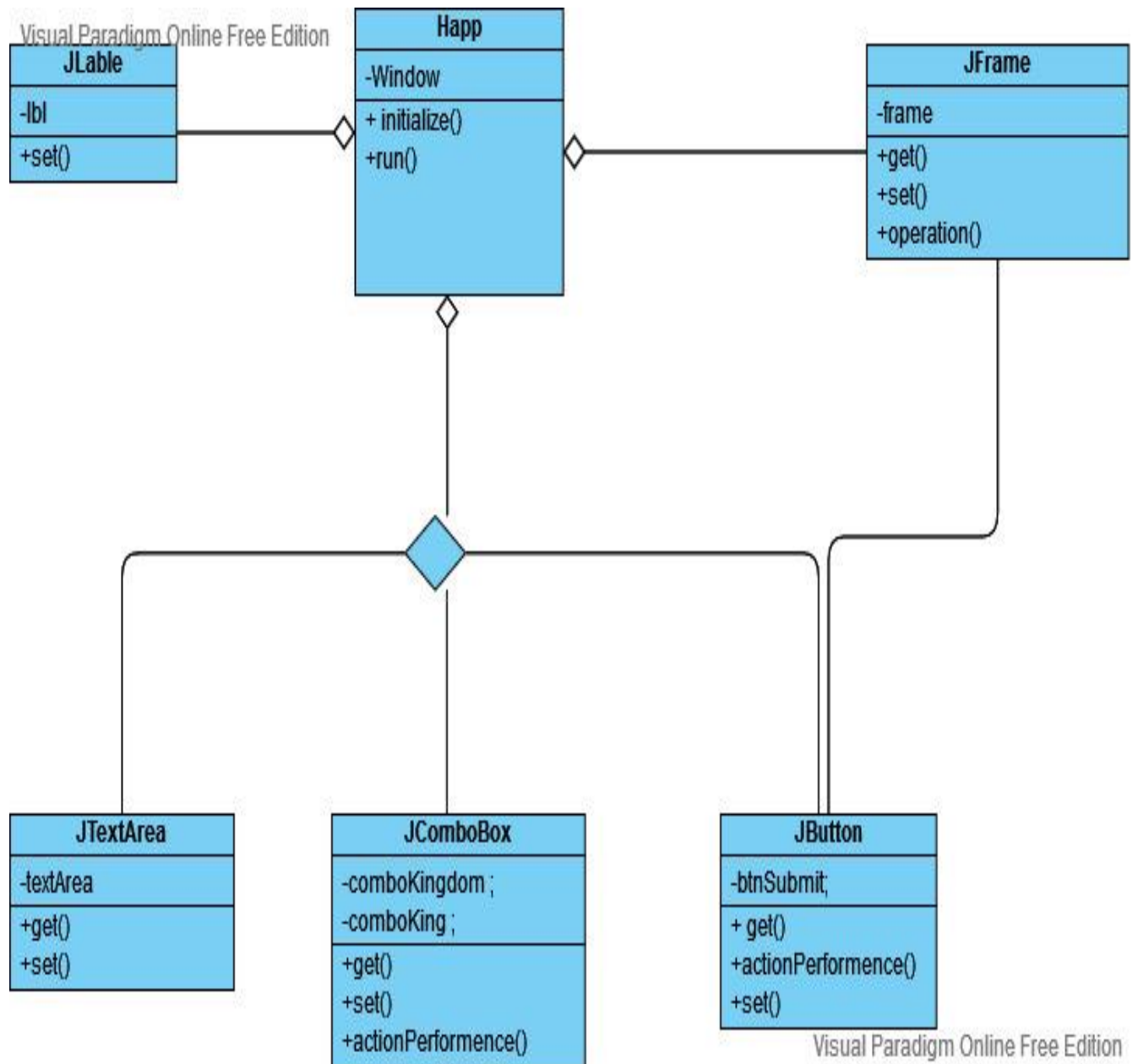*Figure 4: When null values searching*

The Message box is as follws,

Figure 5: Message box appier when error occured.

3 USE CASE DIAGRAME

4 CLASS DIAGRAME

JLable

-lbl

+set()

Happ

-Window

+ initialize()

+run()

JFrame

-frame

+get()

+set()

+operation()

JTextArea

-textArea

+get()

+set()

JComboBox

-comboKingdom ;

-comboKing ;

+get()

+set()

+actionPerformence()

JButton

-btnSubmit;

+ get()

+actionPerformence()

+set()

5 DISCUSSION

- The main purpose of this to develop any program to improve offline learning methods. This is simple and basic level small project for learning purpose.
- The end product is selecting Kingdom & King using two combo boxes. Then access to some information about Kings by clicking search button. The information will appear in the text area after click button.
- The program could be improved to several subjects, and also the program could be developed by using data base. Login window can be added.

6 REFERENCES

W3schools Programming Tutorials, Examples & Tests
https://www.w3schools.in

Java Tutorial | Learn Java Programming - javatpoint
https://www.javatpoint.com › java-tutorial

APPENDIX

```java
package mini;

import java.awt.EventQueue;

import javax.swing.JFrame;

import javax.swing.JComboBox;

import javax.swing.JLabel;

import javax.swing.JOptionPane;

import java.awt.Font;

import javax.swing.DefaultComboBoxModel;

import javax.swing.JEditorPane;

import javax.swing.SwingConstants;

import java.awt.event.ActionListener;

import java.awt.event.ActionEvent;

import javax.swing.JButton;

import java.awt.Color;

import javax.swing.JTextField;

import javax.swing.DropMode;

import javax.swing.JScrollPane;

import javax.swing.JTextArea;

public class Happ {

        private JFrame frame;

        private JComboBox<String> comboKingdom;

        public JComboBox<String> comboKing;

        private JLabel lbl;

        public JTextArea textArea;

        JButton btnSubmit;

        /**

        * Launch the application.

        */
```