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AFFILIATED TO BENGALURU NORTH UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE (PG)

MCA

1ST YEAR PROJECT REPORT ON JAVA MINI PROJECT

"PASSWORD PROTECTOR"

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1. INTRODUCTION:

Password Protector is an GUI based application that allows users to store and generate random passwords. It is created in Java using Mysql database to manage passwords for several application. A password manager is a program that houses all your passwords, as well as other information, in one convenient location with one master password.

The benefits of using Password Manager are:

- A Password Manager will do the work of creating the complicated passwords you need to help protect your online accounts.

- You need to remember only the password protector's password. That single password will give you access to all of your others.

Not only do password protector help securely house your passwords, but they can also generate passwords that are unique and complex, which makes them more difficult to crack or guess. It also simplifies your life by making account access easier for you and more difficult for hackers. You don't have to memorize any passwords except for the password to your password protector.
That means you can actually follow unpleasant but useful security advice, like never reusing a password and always using long, strong and complex passwords.

2. TOOLS AND TECHNOLOGIES USED:

Basically, we are using swing, why they are used because:

Swing: Java Swing tutorial is a part of Java Foundation Classes (JFC) that is used to create window-based applications.

2.1) JAVA:

Java is a programming language created by James Gosling from Sun Microsystems (Sun) in 1991. The first publicly available version of Java (Java 1.0) was released in 1995. Sun Microsystems was acquired by the Oracle Corporation in 2010. Over time new enhanced versions of Java have been released. The current version of Java is Java 1.7 which is also known as Java 7. From the Java programming language, the Java platform evolved. The Java platform allows software developers to write program code in other languages than the Java programming language and still runs on the Java virtual machine. The Java platform is usually associated with the Java virtual machine and the Java core libraries.

We have used different application like:

JButton: The JButton class is used to create a labeled button that has platform independent implementation

JLabel: The object of JLabel class is a component for placing text in a container.

JRadioButton: The JRadioButton class is used to create a radio button.

JOptionButton: The JOptionPane class is used to provide standard dialog boxes such as message dialog box, confirm dialog box and input dialog box.

JScrollbar: The object of JScrollbar class is used to add horizontal and vertical scrollbar.

JTextField: The object of a JTextField class is a text component that allows the editing of a single line text.

So, at the start after running the program it directly opens the "Password Manager", and here we could see 2 buttons like "ALL ITEMS, ADD ITEMS". And in the next section we can see edit area. And next if we can enter and save our credentials in the add item page, it will be automatically get saved in the all-items list (Arrays) after clicking on the add button. So, in this way we can save all our important credentials in our manager and also edit and change the required ones.

3. HARDWARE AND SOFTWARE REQUIREMENTS:

3.1. HARDWARE REQUIREMENT:

Hardware type	**Specification**
Computer processor	i-3,i-5 or Ryzen-5 and above.
Computer Storage	2 GB of available disk space minimum, 4 GB recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image).
Computer RAM	2 GB RAM minimum, 8 GB recommended.

3.2. SOFTWARE REQUIREMENTS:

Software type	**Specification**
Operating system- OS	64-bit Microsoft® Windows® 8/10/11
Logic design	Java
Editors / Tools	Command Prompt or Visual Studio

4.CODING AND IMPLEMENTATION:

```
import javax.swing.table.*;
class NewJFrame extends javax.swing.JFrame
{
        public NewJFrame()
        {
             initComponents();
        }
        DefaultTableModel dm = new DefaultTableModel();

            @SuppressWarnings("unchecked")
             private void initComponents()
            {
                jLabel1 = new javax.swing.JLabel();
                jTabbedPane1 = new javax.swing.JTabbedPane();
                jPanel1 = new javax.swing.JPanel();
                jScrollPane1 = new javax.swing.JScrollPane();
                jTable1 = new javax.swing.JTable();
                jPanel2 = new javax.swing.JPanel();
                jLabel2 = new javax.swing.JLabel();
                jLabel3 = new javax.swing.JLabel();
                jTextField2 = new javax.swing.JTextField();
                jButton1 = new javax.swing.JButton();
                jLabel5 = new javax.swing.JLabel();
                jTextField3 = new javax.swing.JTextField();
                jTextField1 = new javax.swing.JTextField();
                jSeparator1 = new javax.swing.JSeparator();
                jLabel4 = new javax.swing.JLabel();
                jLabel6 = new javax.swing.JLabel();
                jLabel7 = new javax.swing.JLabel();
                jTextField4 = new javax.swing.JTextField();
                jButton2 = new javax.swing.JButton();
                jPanel3 = new javax.swing.JPanel();
                jLabel8 = new javax.swing.JLabel();

               setLocation(500, 250);
               setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

               jLabel1.setBackground(new java.awt.Color(259, 147, 51));
               jLabel1.setFont(new java.awt.Font("Droid Sans", 1, 24)); // NOI18N
               jLabel1.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
               jLabel1.setText("Password Protector");
               jTable1.setModel(new javax.swing.table.DefaultTableModel(
                     new Object [][]
                     {
                           {null, null, null, null},
                           {null, null, null, null},
                           {null, null, null, null},
                           {null, null, null, null},
                           {null, null, null, null},
                           {null, null, null, null},
```

```
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null}
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null}
 },
new String []
                {
                  "SI.No", "Name", "Username", "Password"
                })
                {
   Class[] types = new Class []
                {
                        java.lang.Integer.class, java.lang.String.class, java.lang.String.class,
                        java.lang.String.class
                };
   boolean[] canEdit = new boolean []
   {
          false, false, true, false
   };
                public Class getColumnClass(int columnIndex)
                {
      return types [columnIndex];
   }

   public boolean isCellEditable(int rowIndex, int columnIndex)
                {
      return canEdit [columnIndex];
                 }
});
jTable1.setToolTipText("");
jTable1.addMouseListener(new java.awt.event.MouseAdapter()
  {
   public void mouseClicked(java.awt.event.MouseEvent evt)
                {
      jTable1MouseClicked(evt);
                }
 });
jScrollPane1.setViewportView(jTable1);
 if (jTable1.getColumnModel().getColumnCount() > 0)
 {
                jTable1.getColumnModel().getColumn(0).setResizable(false);
```

```
                jTable1.getColumnModel().getColumn(0).setPreferredWidth(5);
                jTable1.getColumnModel().getColumn(1).setResizable(false);
                jTable1.getColumnModel().getColumn(2).setResizable(false);
                jTable1.getColumnModel().getColumn(3).setResizable(false);
            }
            javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
            jPanel1.setLayout(jPanel1Layout);
            jPanel1Layout.setHorizontalGroup(

            jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jScrollPane1, javax.swing.GroupLayout.Alignment.TRAILING,
            javax.swing.GroupLayout.DEFAULT_SIZE, 595, Short.MAX_VALUE));

            jPanel1Layout.setVerticalGroup(jPanel1Layout.createParallelGroup(javax.swing.Group
            Layout.Alignment.LEADING)
            .addComponent(jScrollPane1, javax.swing.GroupLayout.DEFAULT_SIZE, 255,
            Short.MAX_VALUE));

            jTabbedPane1.addTab("All Accounts", jPanel1);

            jLabel2.setText("Username");

            jLabel3.setText("Password");

            jTextField2.addActionListener(new java.awt.event.ActionListener()
              {
               public void actionPerformed(java.awt.event.ActionEvent evt)
                    {
                jTextField2ActionPerformed(evt);
                    }
             });

            jButton1.setText("Add");
            jButton1.addActionListener(new java.awt.event.ActionListener()
              {
               public void actionPerformed(java.awt.event.ActionEvent evt)
                    {
                jButton1ActionPerformed(evt);
                     }
             });
        jLabel5.setText("Name");

        jSeparator1.setOrientation(javax.swing.SwingConstants.VERTICAL);

        jLabel4.setText("Add Account");

        jLabel6.setText("Remove Account");

        jLabel7.setText("Id");

        jButton2.setText("Remove");
```

```
        jButton2.addActionListener(new java.awt.event.ActionListener()
          {
                public void actionPerformed(java.awt.event.ActionEvent evt)
                 {
                      jButton2ActionPerformed(evt);
                 }
    });
        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);

       jPanel2Layout.setHorizontalGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayo
       ut.Alignment.LEADING)
                        .addGroup(jPanel2Layout.createSequentialGroup()
                        .addGap(19, 19, 19)
                        .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Align
                        ment.LEADING)
                        .addGroup(jPanel2Layout.createSequentialGroup()

                        .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Align
                        ment.LEADING)
                                              .addComponent(jLabel2)
                                              .addComponent(jLabel5)
                                              .addComponent(jLabel3))
                                               .addGap(35, 35, 35)

          .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADI
          NG, false)
                                              .addComponent(jTextField2)
                                              .addComponent(jTextField3)
                                              .addComponent(jTextField1,
          javax.swing.GroupLayout.DEFAULT_SIZE, 100, Short.MAX_VALUE)))
                                    .addComponent(jButton1)
                                    .addComponent(jLabel4))
                               .addGap(55, 55, 55)
                               .addComponent(jSeparator1,
          javax.swing.GroupLayout.PREFERRED_SIZE,  javax.swing.GroupLayout.DEFAULT_SIZE,
          javax.swing.GroupLayout.PREFERRED_SIZE)

          .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

          .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADI
          NG)
                                    .addComponent(jLabel6)
                                    .addGroup(jPanel2Layout.createSequentialGroup()
                                          .addComponent(jLabel7)
                                          .addGap(67, 67, 67)
                                          .addComponent(jTextField4,
          javax.swing.GroupLayout.PREFERRED_SIZE,                                    100,
          javax.swing.GroupLayout.PREFERRED_SIZE))
                                    .addComponent(jButton2))
                               .addContainerGap(124, Short.MAX_VALUE))
        );
```

```
jTabbedPane1.addTab("Add Account", jPanel2);

        javax.swing.GroupLayout jPanel3Layout = new javax.swing.GroupLayout(jPanel3);
        jPanel3.setLayout(jPanel3Layout);
        jPanel3Layout.setHorizontalGroup(

jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addGroup(jPanel3Layout.createSequentialGroup()
                    .addGap(50, 50, 50)
                    .addComponent(jLabel8, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addContainerGap(348, Short.MAX_VALUE))
        );
        jPanel3Layout.setVerticalGroup(

jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addGroup(jPanel3Layout.createSequentialGroup()
                    .addGap(40, 40, 40)
                    .addComponent(jLabel8, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addContainerGap(195, 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(jTabbedPane1)
                .addComponent(jLabel1, 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(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE,
66, javax.swing.GroupLayout.PREFERRED_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                    .addComponent(jTabbedPane1,
javax.swing.GroupLayout.PREFERRED_SIZE, 320,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        );

        pack();
    }

    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt)
        {
        // TODO add your handling code here:
```

```
        logArr[i] = new Login(jTextField1.getText(), jTextField2.getText(),
jTextField3.getText());
        i++;
        updateTable();
        }

    private void jTextField2ActionPerformed(java.awt.event.ActionEvent evt)
    {
       // TODO add your handling code here:
    }

    private void jTable1MouseClicked(java.awt.event.MouseEvent evt)
    {
       // TODO add your handling code here:
    }

    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt)
    {
       // TODO add your handling code here:
       int index = Integer.parseInt(jTextField4.getText());
       if(index <= i)
                {
                for(int n=index-1; n< i-1; n++)
                        {
                        logArr[n] = logArr[n+1];
                }
                logArr[i-1] = null;
                i--;
                updateTable();
        }
        }

    private void updateTable()
        {
       int j = 0;

       for(j=0; j<20; j++){
          jTable1.setValueAt("", j, 0);
          jTable1.setValueAt("", j, 1);
          jTable1.setValueAt("", j, 2);
          jTable1.setValueAt("", j, 3);
       }

       for (j = 0; j < i; j++)
         {
          jTable1.setValueAt(j + 1, j, 0);
          jTable1.setValueAt(logArr[j].name, j, 1);
          jTable1.setValueAt(logArr[j].username, j, 2);
          jTable1.setValueAt(logArr[j].password, j, 3);

        }
```

```
    }

    class Login
        {
        String name, username, password;

        Login(String n, String uname, String pass)
                {
                name = n;
                username = uname;
                password = pass;
        }
        }

    Login logArr[] = new Login[20];
    int i = 0;

    public static void main(String args[])
        {
       try
                {
                for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels())
                        {
                        if ("Darcula".equals(info.getName()))
                                {
                        javax.swing.UIManager.setLookAndFeel(info.getClassName());
                        break;
                        }
                }
        }
         catch (ClassNotFoundException ex)
         {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Level.
SEVERE, null, ex);
        } catch (InstantiationException ex)
          {

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

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

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Level.
SEVERE, null, ex);
        }
```

```
        java.awt.EventQueue.invokeLater(new Runnable()
          {
           public void run()
                 {
              new NewJFrame().setVisible(true);
           }
        });
    }

    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    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.JLabel jLabel7;
    private javax.swing.JLabel jLabel8;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JPanel jPanel3;
    private javax.swing.JScrollPane jScrollPane1;
    private javax.swing.JSeparator jSeparator1;
    private javax.swing.JTabbedPane jTabbedPane1;
    private javax.swing.JTable jTable1;
    private javax.swing.JTextField jTextField1;
    private javax.swing.JTextField jTextField2;
    private javax.swing.JTextField jTextField3;
    private javax.swing.JTextField jTextField4;
}
```

4. SCREEN SHOTS:

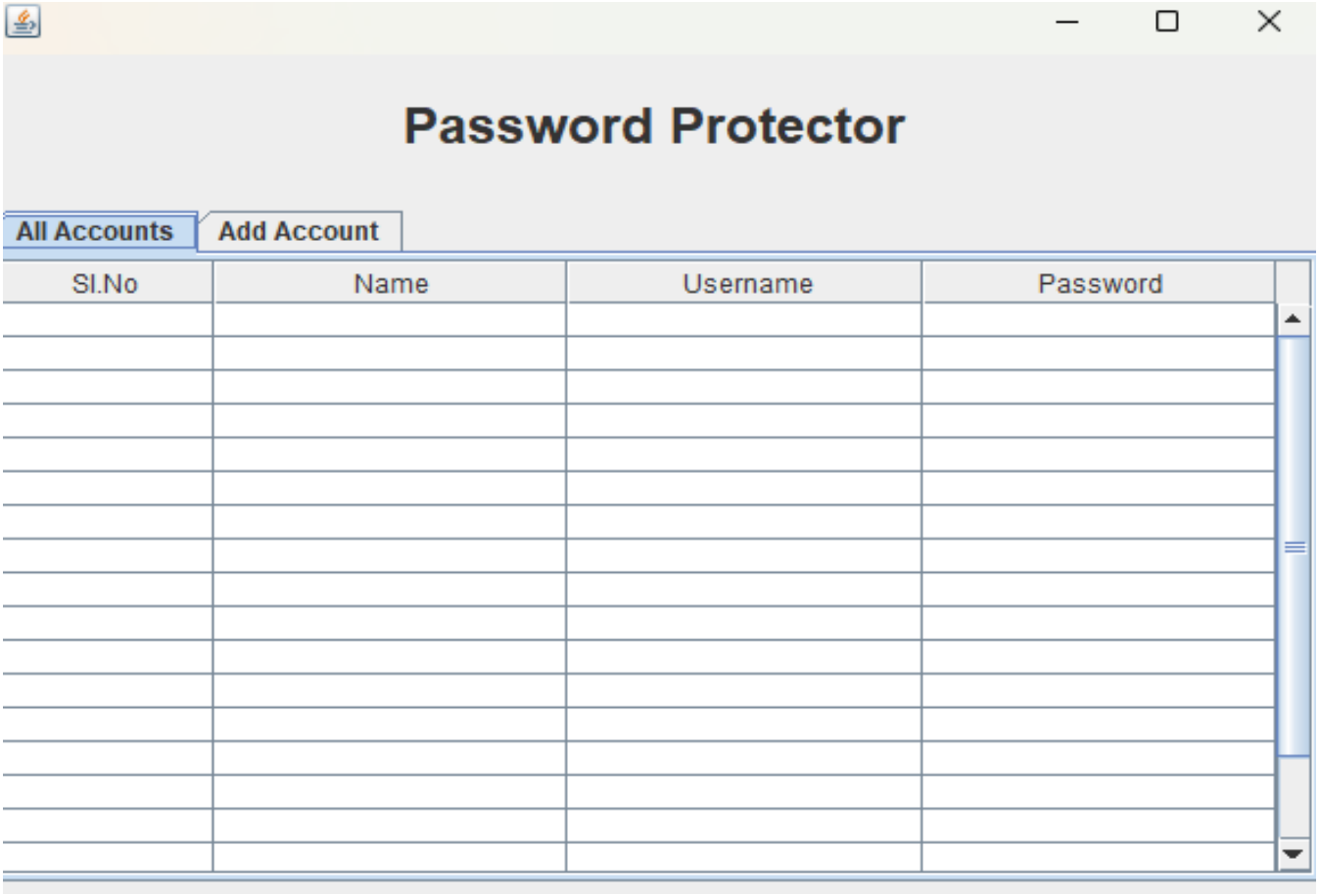

FIGURE 1. LIST OF USERS AND THEIR ACCOUNT INFORMATION

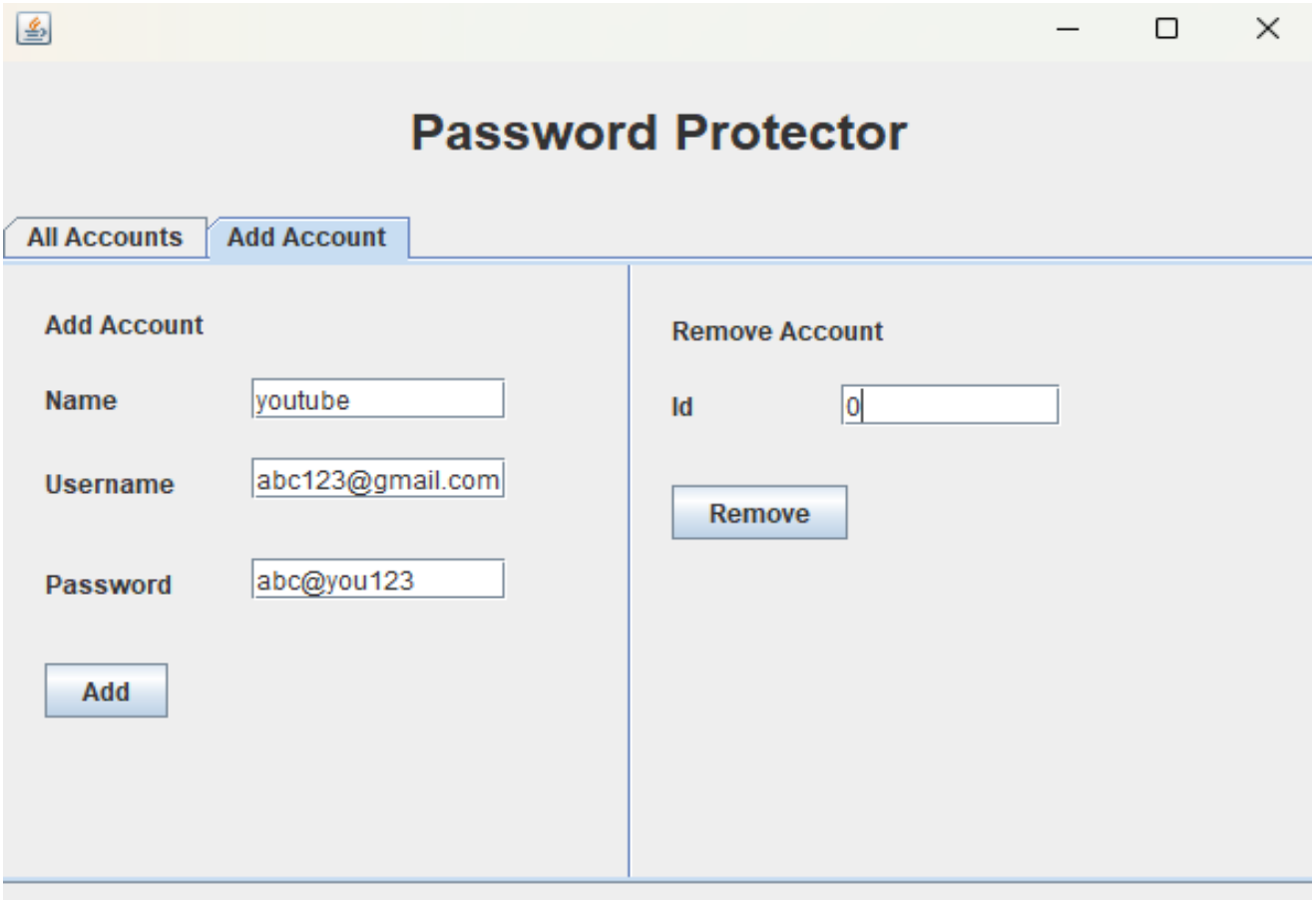

FIGURE 2. ADDING ACCOUNT INFORMATION

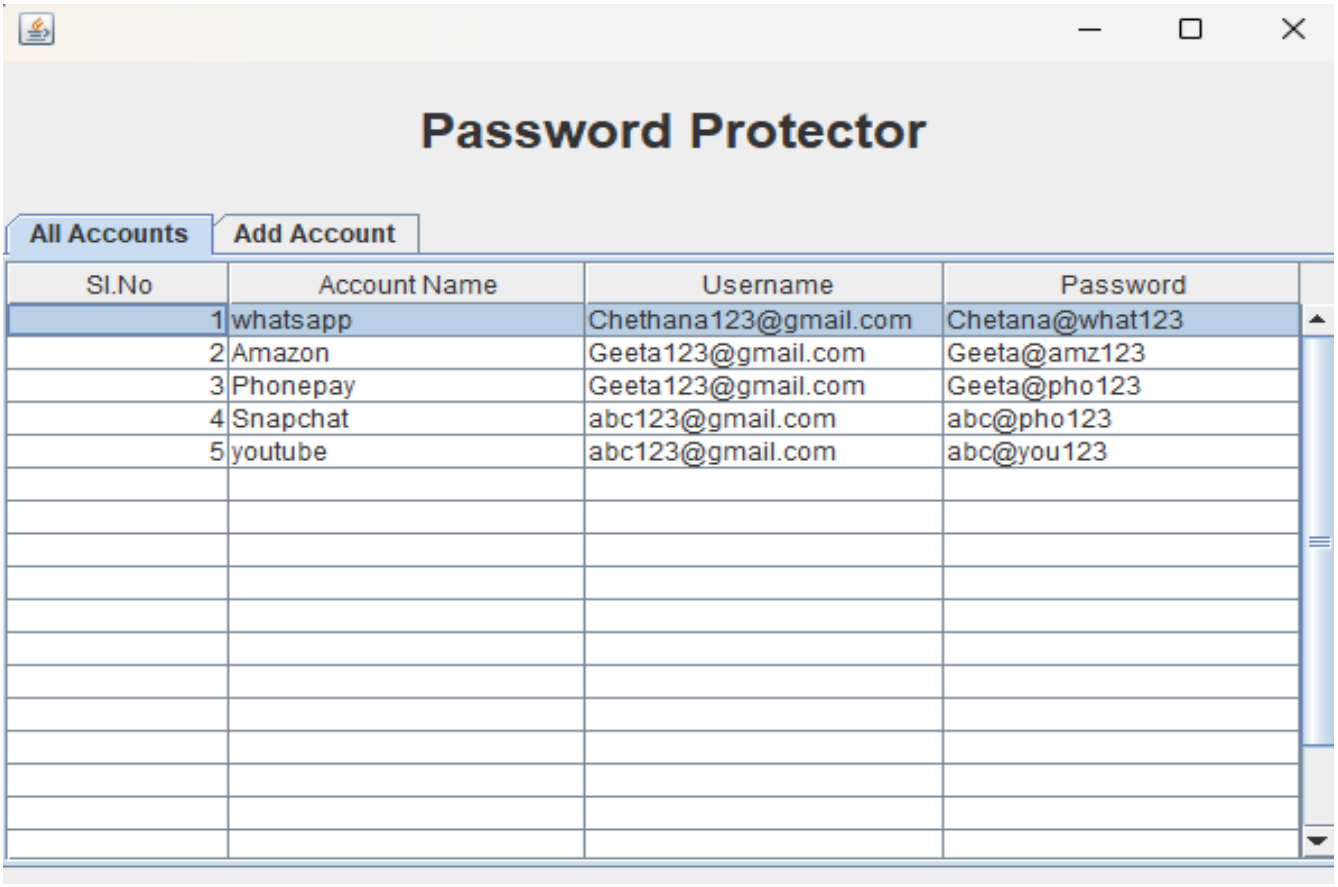

FIGURE 3. STORED INFORMATION OF USE

CONCLUSION :

A password protector is a software that will help us to store password, save your login information, and manage them. There are risks of both not using and using a password protector, but for most people, the risk of not using one far outweighs the risk of using one.

If you decided to use a password protector/manager, then you should reduce the risk of using it by activating 2FA, Plan your master password recovery method, and not saving a high-risk password in your password protector/manager.

These password managers prevent different attacks. The approach is to store all the passwords. This approach will prevent attacks which are based on the internet. One of the requirements is to be easy to use therefore it contains a UI application to add other entries in the database. Being easy to use let any kind of users to use it, from IT professional to simple computer users. Therefore this password manager can be used by everyone but they have to know that there are possible attacks against the it