

Source Code Latihan01:

```
package Praktikum_04_Array1;
import java.util.ArrayList;
import javax.swing.JOptionPane;

public class latihan01 {

    public static void main(String[] args) {
        ArrayList<ArrayList<Integer>> matriks = new ArrayList<ArrayList<Integer>>();

        for (int i = 0; i < 2; i++) {
            for (int j = 0; j < 2; j++) {
                String value = JOptionPane.showInputDialog(null, "masukkan
element A [ " + i + " ] [ " + j + " ]");
                matriks.add(new ArrayList<Integer>());
                matriks.get(i).add(j, Integer.parseInt(value));
            }
        }
        String output = "";
        System.out.println("Matriks A");
        output += "Matriks A \n";
        for (int i = 0; i < 2; i++) {
            for (int j = 0; j < 2; j++) {
                output += matriks.get(i).get(j) + " ";
            }
            output += "\n";
        }
        for (int a = 0; a < 2; a++) {
            for (int b = 0; b < 2; b++) {
                String value = JOptionPane.showInputDialog(null, "masukkan
element B [ " + a + " ] [ " + b + " ]");

                matriks.add(new ArrayList<Integer>());
                matriks.get(a).add(b, Integer.parseInt(value));
            }
        }
        System.out.println("Matriks B");
        output += "Matriks B \n";

        for (int a = 0; a < 2; a++) {
            for (int b = 0; b < 2; b++) {
                output += matriks.get(a).get(b) + " ";
            }

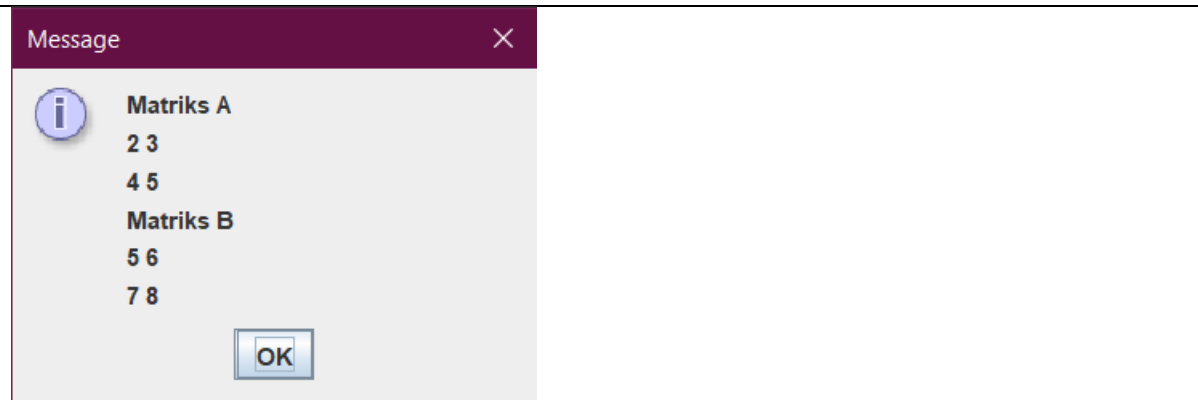
            output += "\n";
        }
    }
}
```

```

        JOptionPane.showMessageDialog(null, output);
    }
}

```

Hasil:



Source Code Latihan02:

```

package Praktikum_04_Array1;
import java.util.ArrayList;
import javax.swing.JOptionPane;

public class latihan02 {

    public static void main(String[] args) {
        latihan02 mainApps = new latihan02();

        ArrayList<ArrayList<Integer>> matriks_a = new ArrayList<ArrayList<Integer>>();
        ArrayList<ArrayList<Integer>> matriks_b = new ArrayList<ArrayList<Integer>>();
        ArrayList<ArrayList<Integer>> total = new ArrayList<ArrayList<Integer>>();

        for(int i = 0; i < 2; i++) {
            matriks_a.add(new ArrayList<Integer>());
            for(int j = 0; j < 2; j++) {
                String values_matriks_a = JOptionPane.showInputDialog(null,
                    "Masukkan angka:",
                    "Matriks A[" + i + "][" + j + "]",
                    JOptionPane.QUESTION_MESSAGE);
                matriks_a.get(i).add(j, Integer.parseInt(values_matriks_a));
            }
        }

        for(int k = 0; k < 2; k++) {
            matriks_b.add(new ArrayList<Integer>());
            for(int l = 0; l < 2; l++) {
                String values_matriks_b = JOptionPane.showInputDialog(null,
                    "Masukkan angka:",
                    "Matriks B[" + k + "][" + l + "]",
                    JOptionPane.QUESTION_MESSAGE);
            }
        }
    }
}

```

```

        matriks_b.get(k).add(l, Integer.parseInt(values_matriks_b));
    }
}

int jumlahArr = 0;

for(int i = 0; i < 2; i++) {
    total.add(new ArrayList<Integer>());
    for(int j = 0; j < 2; j++) {
        for(int k = 0; k < 2; k++) {
            jumlahArr = jumlahArr + matriks_a.get(i).get(k) * matriks_b.get(k).get(j);
        }
        total.get(i).add(j, jumlahArr);
        jumlahArr = 0;
    }
}

String print_matriks = "Matriks A:\n" + mainApps.PrintArr(matriks_a)
    + "\nMatriks B:\n" + mainApps.PrintArr(matriks_b)
    + "\nHasil Perkalian:\n" + mainApps.PrintArr(total);

JOptionPane.showMessageDialog(null, print_matriks);
}

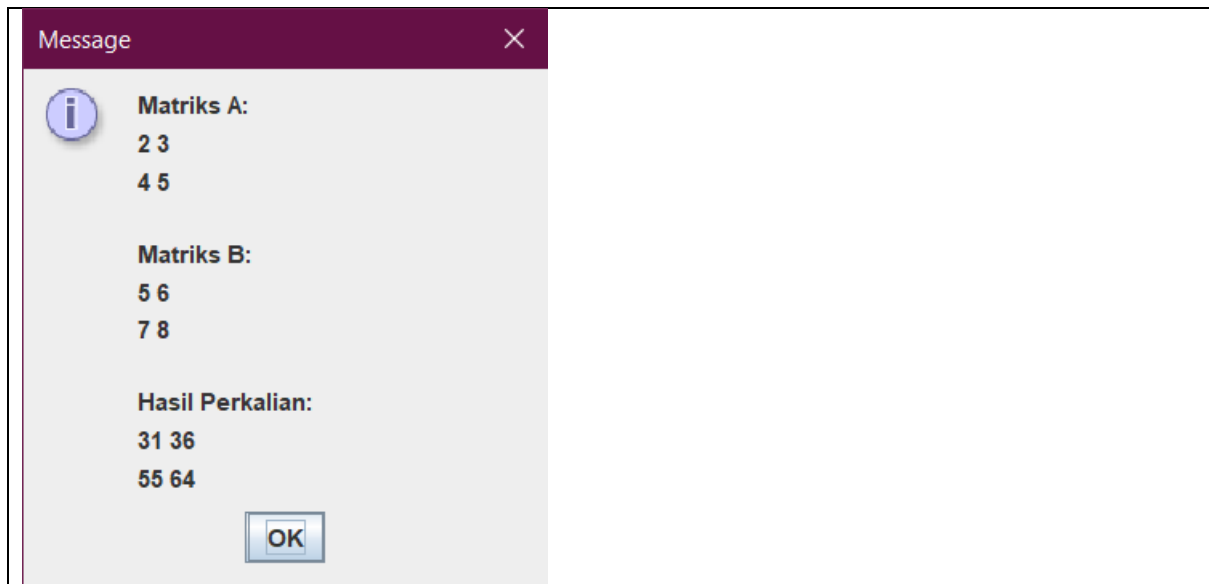
private String PrintArr(ArrayList<ArrayList<Integer>> val) {
    String output = "";

    for(int i = 0; i < 2; i++) {
        for(int j = 0; j < 2; j++) {
            output += val.get(i).get(j) + " ";
        }
        output += "\n";
    }

    return output;
}
}

```

Hasil:



Source Code Latihan04:

```
package Praktikum_04_Array1;

import javax.swing.JOptionPane;
import java.util.ArrayList;

public class latihan04 {

    public static ArrayList<String> head = new ArrayList<String>();

    public static void main(String[] args) {
        head.add("Nama Lengkap");
        head.add("Alamat");
        head.add("No. Telp");

        ArrayList<ArrayList<String>> title_values = new ArrayList<ArrayList<String>>();

        for(int i = 0; i < head.size(); i++) {
            title_values.add(new ArrayList<String>());
            for(int j = 0; j < head.size(); j++) {
                String values = JOptionPane.showInputDialog(null,
                    "Masukkan " + head.get(j) + ":",
                    "Data input ke - " + i,
                    JOptionPane.QUESTION_MESSAGE);
                title_values.get(i).add(j, values);
            }
        }

        String print_data = PrintArr(title_values);

        JOptionPane.showMessageDialog(null, print_data, "Output",
            JOptionPane.INFORMATION_MESSAGE);
    }
}
```

```

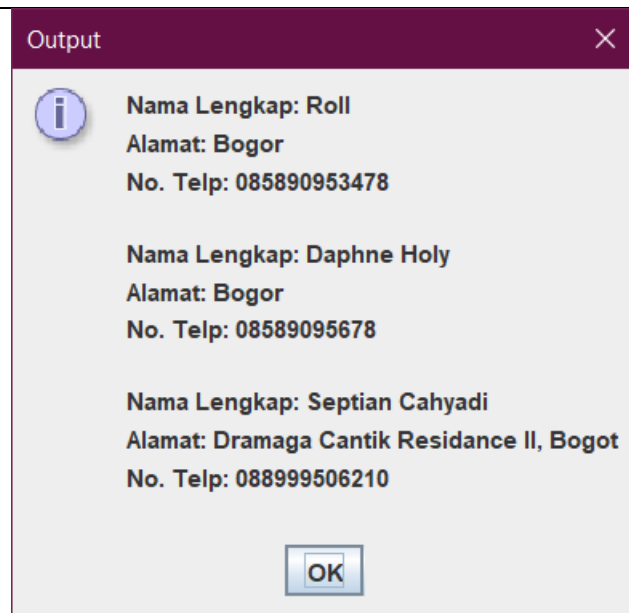
private static String PrintArr(ArrayList<ArrayList<String>> val) {
    String output = "";

    for(int i = 0; i < head.size(); i++) {
        for(int j = 0; j < head.size(); j++) {
            output += head.get(j) + ": " + val.get(i).get(j) + "\n";
        }
        output += "\n";
    }

    return output;
}
}

```

Hasil:



Source Code Latihan03:

```

package Praktikum_04_Array1;
import javax.swing.JOptionPane;
import java.util.ArrayList;
import java.util.Collections;
import java.util.Comparator;

public class latihan03 {

    public static ArrayList<String> head = new ArrayList<String>();

    public static void main(String[] args) {
        head.add("Nama Lengkap");
        head.add("Alamat");
        head.add("No. Telp");
    }
}

```

```

ArrayList<ArrayList<String>> title_values = new ArrayList<ArrayList<String>>();

for(int i = 0; i < head.size(); i++) {
    title_values.add(new ArrayList<String>());
    for(int j = 0; j < head.size(); j++) {
        String values = JOptionPane.showInputDialog(null,
            "Masukkan " + head.get(j) + ":",
            "Data input ke - " + i,
            JOptionPane.QUESTION_MESSAGE);
        title_values.get(i).add(j, values);
    }
}

Collections.sort(title_values, new Comparator<ArrayList<String>>() {
    @Override
    public int compare(ArrayList<String> o1, ArrayList<String> o2) {
        return o1.get(0).compareTo(o2.get(0));
    }
});

String print_data = PrintArr(title_values);

JOptionPane.showMessageDialog(null, print_data, "Output",
JOptionPane.INFORMATION_MESSAGE);
}

private static String PrintArr(ArrayList<ArrayList<String>> val) {
    String output = "";

    for(int i = 0; i < head.size(); i++) {
        for(int j = 0; j < head.size(); j++) {
            output += head.get(j) + ": " + val.get(i).get(j) + "\n";
        }
        output += "\n";
    }

    return output;
}
}

```

Hasil:

Output



Nama Lengkap: Edi Nurachmad

Alamat: Taman Cimanggu Permai, Bogor

No. Telp: 085693800384

Nama Lengkap: Isnan Mulia

Alamat: Jl. Manunggal, Bogor

No. Telp: 081932080875

Nama Lengkap: Septian Cahyadi

Alamat: Dramaga Cantik Residance II, Bogor

No. Telp: 088999506210

OK