

Laboratorium Informatika

Junior Project (Teknik Basis Data, Pemrograman Berbasis Objek)

Worksheet Responsi

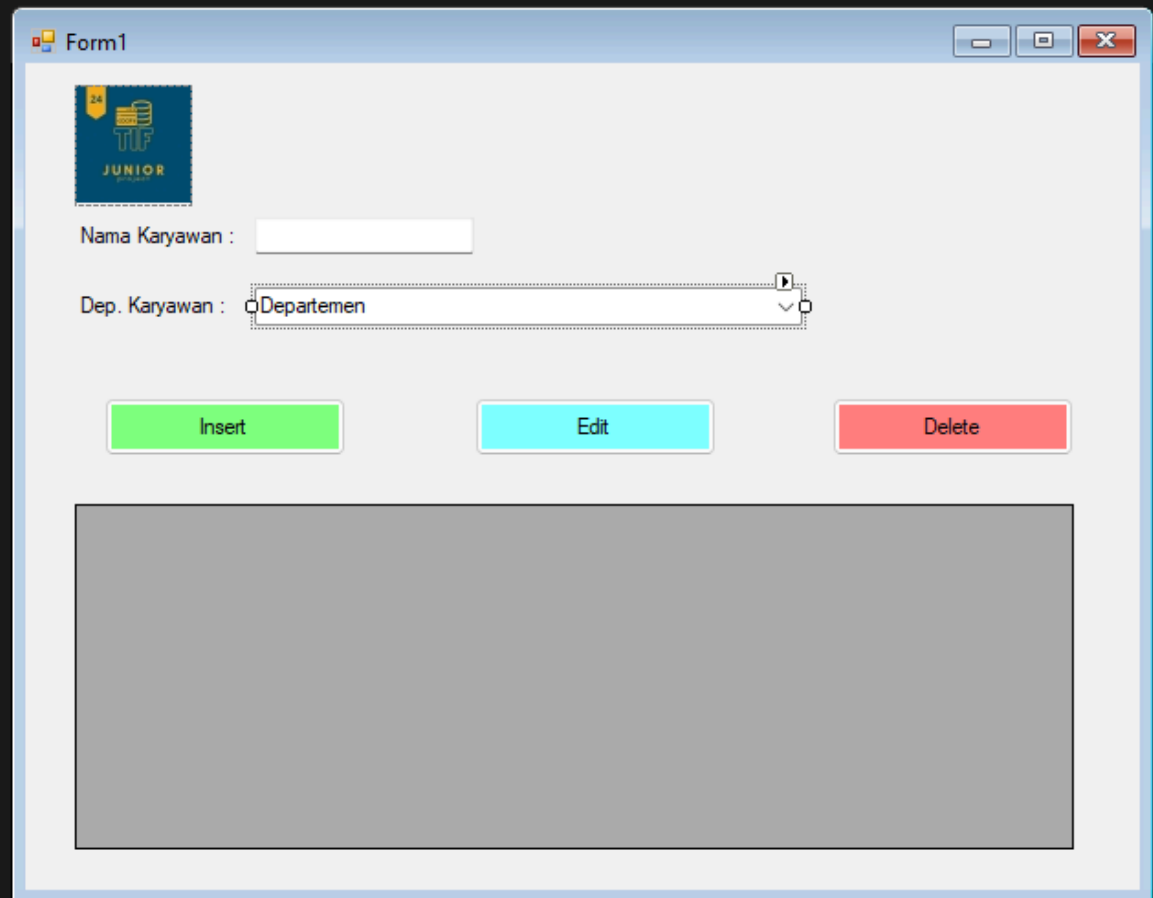
RESPONSI

TUGAS WAJIB

Link Github: [sulaimanfawwazak/Responsi-2-Junior-Project](https://github.com/sulaimanfawwazak/Responsi-2-Junior-Project)

Screenshot file Tampilan:


1. Forms1.cs [Design]



The screenshot displays the Visual Studio IDE window titled "Form1". The form contains a logo in the top-left corner with the text "24 TIF JUNIOR". Below the logo, there are two input fields: "Nama Karyawan :" followed by a text box, and "Dep. Karyawan :" followed by a dropdown menu currently showing "Departemen". Below these fields are three buttons: "Insert" (green), "Edit" (cyan), and "Delete" (red). At the bottom of the form is a large, empty gray rectangular area, likely intended for a data grid or list.

2. Hasil Build

Form1



Nama Karyawan :

Dep. Karyawan :

	id_karyawan	nama	id_dep	kode_dep	nama_dep
▶	101	Sulaiman	1	HR	HR
	102	Fawwaz	2	ENG	Engineer
	103	Abdillah	3	DEV	Developer
	104	Karim	4	PM	Product Manager
	105	Eben	5	FIN	Finance
	106	Deren	3	DEV	Developer
	107	Hilmi	4	PM	Product Manager

Screenshot Konsep OOP (Enkapsulasi dan *Inheritance*):

1. Enkapsulasi

```

1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Text;
5  using System.Threading.Tasks;
6
7  namespace Responsi2Junpro
8  {
9      6 references
10     class DepartemenDropDown
11     {
12         5 references
13         public int ID { get; set; }
14         5 references
15         public string Name { get; set; }
16     }
17 }

```

```

1 reference
public Form1()
{
    InitializeComponent();

    cbDepKaryawan.DataSource = new DepartemenDropDown[]
    {
        new DepartemenDropDown{ ID = 1, Name = "HR"},
        new DepartemenDropDown{ ID = 2, Name = "Engineer"},
        new DepartemenDropDown{ ID = 3, Name = "Developer"},
        new DepartemenDropDown{ ID = 4, Name = "Product Manager"},
        new DepartemenDropDown{ ID = 5, Name = "Finance"}
    };
}

```

2. Inheritance

```

namespace Responsi2Junpro
{
    4 references
    public partial class Form1 : Form
    {
        private NpgsqlConnection conn;
        string connstring = "Host=localhost;port=5432;Username=postgres;Password=informatika;Database=Perusahaan";

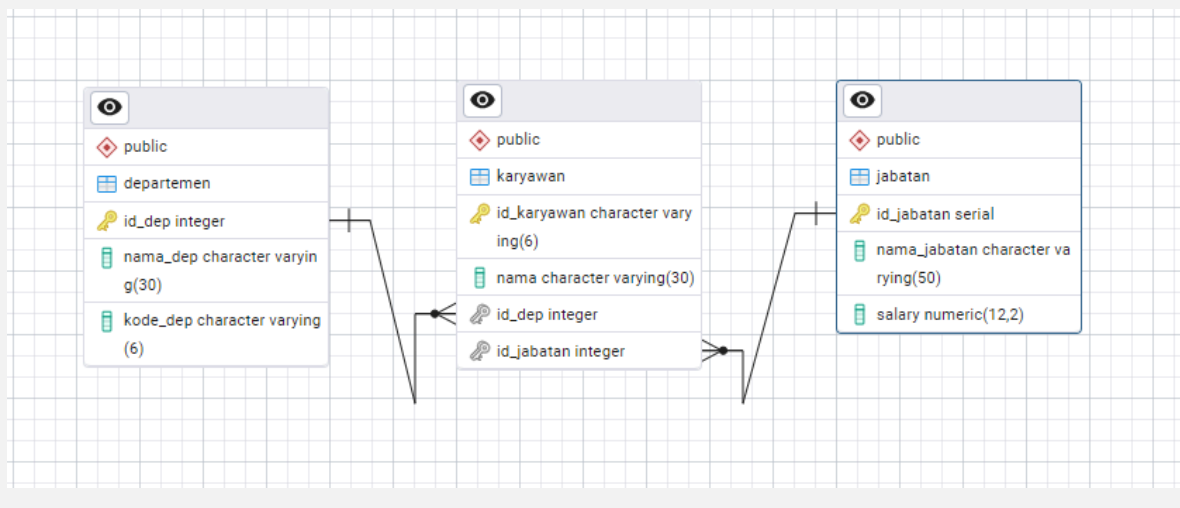
        public DataTable dt;
        public static NpgsqlCommand cmd;
        private string sql = null;
        private DataGridViewRow r;

        1 reference
        public Form1()
        {
            InitializeComponent();

            cbDepKaryawan.DataSource = new DepartemenDropDown[]
            {
                new DepartemenDropDown{ ID = 1, Name = "HR"},
                new DepartemenDropDown{ ID = 2, Name = "Engineer"},
                new DepartemenDropDown{ ID = 3, Name = "Developer"},
                new DepartemenDropDown{ ID = 4, Name = "Product Manager"},
                new DepartemenDropDown{ ID = 5, Name = "Finance"}
            };
        }
    }
}

```

Screenshot ERD Databases pada PgAdmin (klik kanan databases -> ERD For Database):



Implementasi Kode CRUD:

1. Insert

```
1 reference
private void btnInsert_Click(object sender, EventArgs e)
{
    try
    {
        conn.Open();
        sql = @"INSERT INTO karyawan (id_karyawan, nama, id_dep) VALUES (_id_karyawan, _nama, _id_dep)";
        cmd = new NpgsqlCommand(sql, conn);
        cmd.Parameters.AddWithValue("_id_karyawan", tbNamaKaryawan.Text[0] + tbNamaKaryawan.Text[1] + tbNamaKaryawan.Text[2] + tbNamaKaryawan.Text[3] + tbNamaKaryawan.Text[4] + tbNamaKaryawan.Text[5]);
        cmd.Parameters.AddWithValue("_nama", tbNamaKaryawan.Text);
        cmd.Parameters.AddWithValue("_id_dep", tbNamaKaryawan.Text);
        dt = new DataTable();
        NpgsqlDataReader rd = cmd.ExecuteReader();
        dt.Load(rd);
        dgvTableData.DataSource = dt;

        conn.Close();
    }
    catch (Exception ex)
    {
        MessageBox.Show("Error:" + ex.Message, "Select failed!", MessageBoxButtons.OK, MessageBoxIcon.Error);
    }
}
1 reference
```

2. Update

```
1 reference
private void btnEdit_Click(object sender, EventArgs e)
{
    conn.Open();
    sql = "UPDATE TABLE karyawan SET nama = _nama, id_dep = _id_dep";
    cmd = new NpgsqlCommand(sql, conn);
    cmd.Parameters.AddWithValue("_nama", tbNamaKaryawan.Text);
    cmd.Parameters.AddWithValue("_id_dep", (int)cbDepKaryawan.SelectedValue);

    if ((int)cmd.ExecuteScalar() == 1)
    {
        MessageBox.Show("Data Karyawan berhasil di-update", "Well Done!", MessageBoxButtons.OK, MessageBoxIcon.Information);

        conn.Close();
        tbNamaKaryawan.Text = null;
    }
}
1 reference
```

3. Delete

```
1 reference
private void btnDelete_Click(object sender, EventArgs e)
{
    try
    {
        conn.Open();
        sql = @"DELETE FROM karyawan WHERE nama = _nama AND dep_id = _dep_id";
        cmd = new NpgsqlCommand(sql, conn);
        cmd.Parameters.AddWithValue("_nama", tbNamaKaryawan.Text);
        cmd.Parameters.AddWithValue("_dep_id", (int)cbDepKaryawan.SelectedValue);
    }
    catch (Exception ex)
    {
        MessageBox.Show("Error:" + ex.Message, "Gagal menghapus data karyawan!", MessageBoxButtons.OK, MessageBoxIcon.Error);
    }
    if ((int)cmd.ExecuteScalar() == 1)
    {
        MessageBox.Show("Data Karyawan berhasil dihapus", "Well Done!", MessageBoxButtons.OK, MessageBoxIcon.Information);

        conn.Close();
        tbNamaKaryawan.Text = null;
    }
}
1 reference
```

TUGAS OPSIONAL

Screenshot Konsep OOP (Polimorfisme dan Abstraksi):

Screenshot Fungsi pada Postgres:

1. get_karyawan_with_id

```
1 1 ✓ CREATE FUNCTION get_karyawan_with_id(id_kar VARCHAR(6))  
2 RETURNS TABLE(karyawan_id VARCHAR(6), karyawan_nama VARCHAR(30))  
3 AS $$  
4 BEGIN  
5     RETURN QUERY  
6     SELECT id_karyawan, nama  
7     FROM karyawan  
8     WHERE id_karyawan = id_kar;  
9 END;  
10 $$ LANGUAGE plpgsql;
```

2. get_departemen_with_id

```
1 1 ✓ CREATE FUNCTION get_departemen_with_id(id_departemen INT)  
2 RETURNS TABLE(departemen_id INT, departemen_nama VARCHAR(30))  
3 AS $$  
4 BEGIN  
5     RETURN QUERY  
6     SELECT *  
7     FROM departemen  
8     WHERE id_dep = id_departemen;  
9 END;  
10 $$ LANGUAGE plpgsql;
```