

Laboratorium Informatika

Junior Project (Teknik Basis Data, Pemrograman Berbasis Objek)

Worksheet Responsi

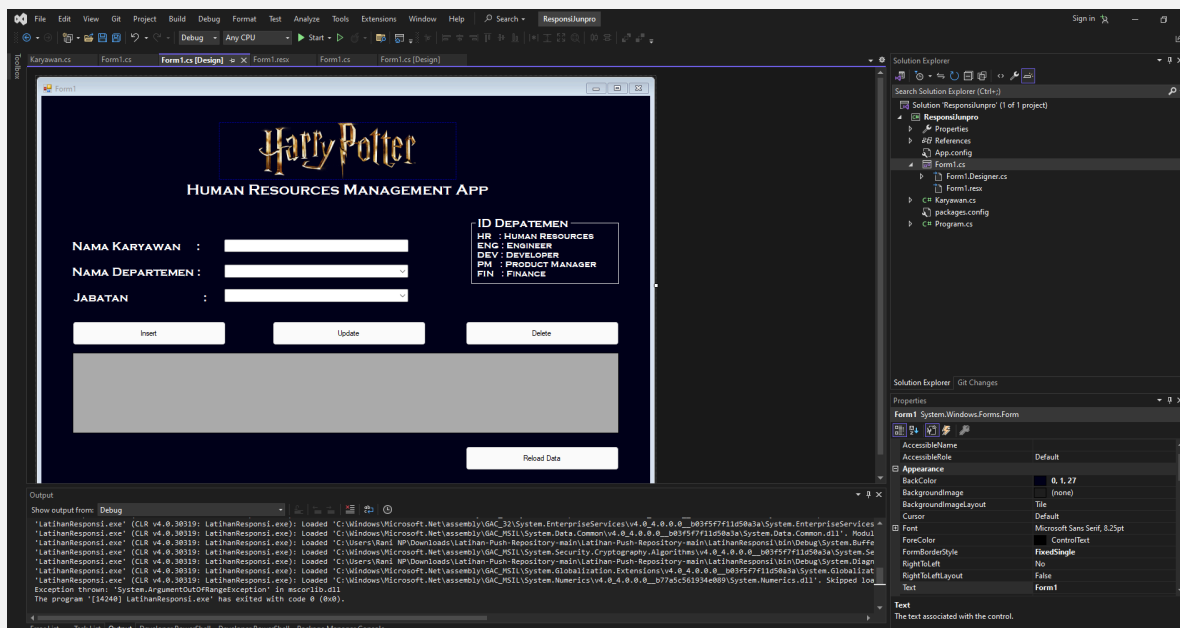
RESPONSI

TUGAS WAJIB

Link Github:

<https://github.com/ranisedangbekerja/493982-RaniNirmalaPrakoso-ResponsiJuniorProject.git>

Screenshot file Tampilan:



Screenshot Konsep OOP (Enkapsulasi dan *Inheritance*):

1. Inheritance

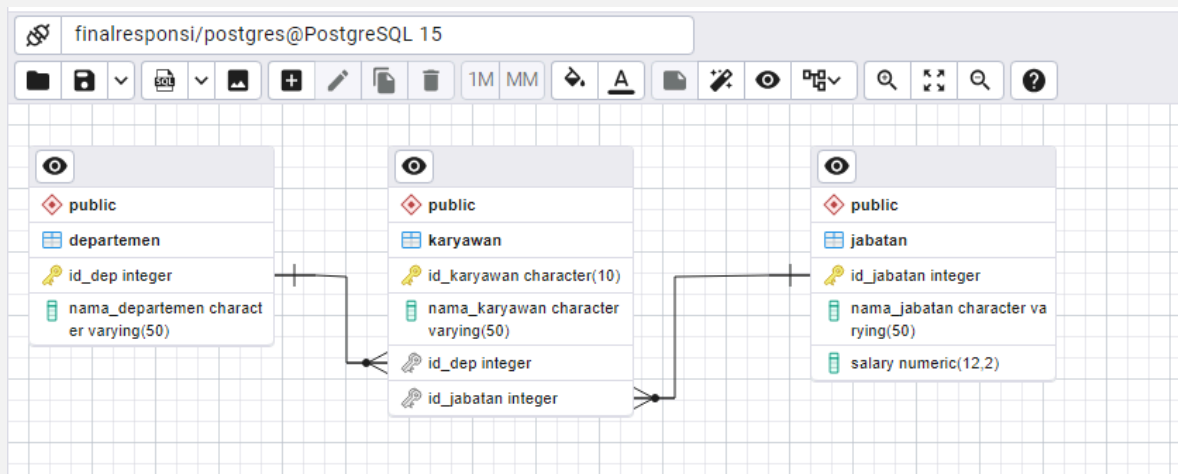
```
4 references
public partial class Form1 : Form
{
    1 reference
    public Form1() //inheritance
    {
        StartPosition = FormStartPosition.CenterScreen;
        InitializeComponent();
        Form1_Load(null, null);
    }
}
```

2. Encapsulation

```
1 reference
private void btnInsert_Click(object sender, EventArgs e)
{
    // Membuka koneksi ke database
    conn = new NpgsqlConnection(connectionString());
    try
    {
        // Validasi input
        if (string.IsNullOrEmpty(txtNama.Text) || comboDep.SelectedIndex == -1)
        {
            MessageBox.Show("Nama karyawan dan departemen harus diisi!");
            return;
        }

        // Ambil input pengguna
    }
}
```

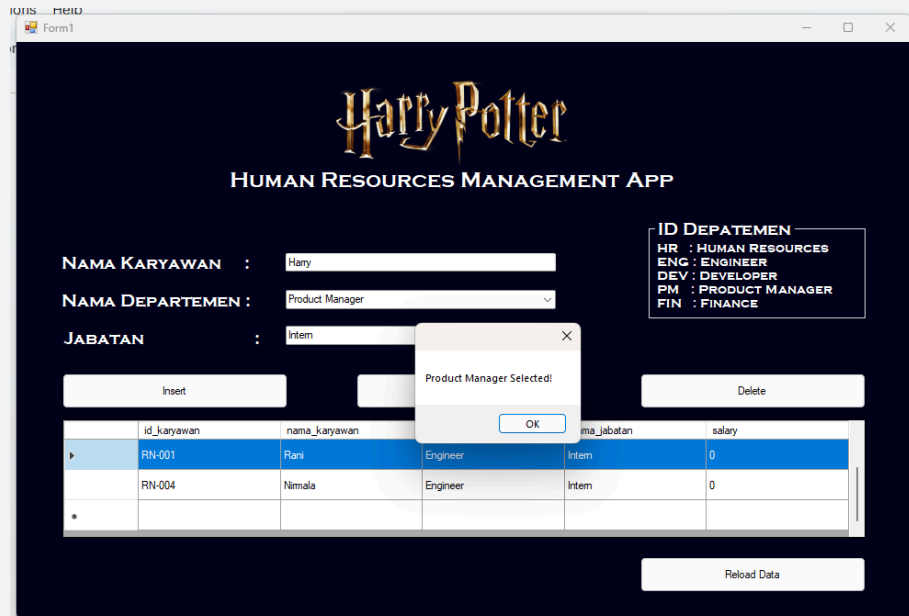
Screenshot ERD Databases pada PgAdmin (klik kanan databases -> ERD For Database):



Implementasi Kode CRUD:

1. Melakukan Insert

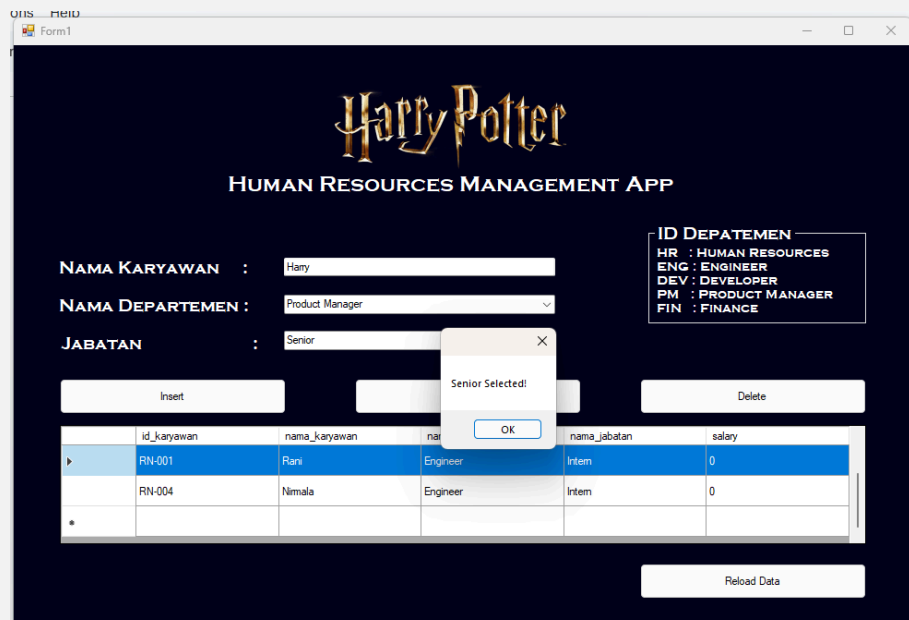
- Masukkan Nama Karyawan Baru
- Pilih Nama Departemen sesuai menu dropdown



The screenshot shows the 'HUMAN RESOURCES MANAGEMENT APP' interface. The 'NAMA KARYAWAN' field contains 'Harry'. The 'NAMA DEPARTEMEN' dropdown is set to 'Product Manager'. The 'JABATAN' dropdown is set to 'Intern'. A dialog box titled 'Product Manager Selected!' with an 'OK' button is displayed over the form. Below the form is a table with columns: id_karyawan, nama_karyawan, nama_jabatan, and salary.

| id_karyawan | nama_karyawan | nama_jabatan | salary |
|-------------|---------------|--------------|--------|
| RN-001 | Rani | Engineer | 0 |
| RN-004 | Nimla | Engineer | 0 |

- Pilih Nama Jabatan sesuai menu drop down



The screenshot shows the same 'HUMAN RESOURCES MANAGEMENT APP' interface. The 'NAMA KARYAWAN' field contains 'Harry'. The 'NAMA DEPARTEMEN' dropdown is set to 'Product Manager'. The 'JABATAN' dropdown is now set to 'Senior'. A dialog box titled 'Senior Selected!' with an 'OK' button is displayed over the form. Below the form is a table with columns: id_karyawan, nama_karyawan, nama_jabatan, and salary.

| id_karyawan | nama_karyawan | nama_jabatan | salary |
|-------------|---------------|--------------|--------|
| RN-001 | Rani | Engineer | 0 |
| RN-004 | Nimla | Engineer | 0 |

- Berhasil melakukan Insert

Form1

Harry Potter

HUMAN RESOURCES MANAGEMENT APP

NAMA KARYAWAN :

NAMA DEPARTEMEN :

JABATAN :

ID DEPARTEMEN
 HR : HUMAN RESOURCES
 ENG : ENGINEER
 DEV : DEVELOPER
 PM : PRODUCT MANAGER
 FIN : FINANCE

| id_karyawan | nama_karyawan | nama_departemen | nama_jabatan | salary |
|-------------|---------------|-----------------|--------------|--------|
| RN-001 | Rani | Engineer | Intern | 0 |
| RN-004 | Nimala | Engineer | Intern | 0 |
| * | | | | |

Form1

Harry Potter

HUMAN RESOURCES MANAGEMENT APP

NAMA KARYAWAN :

NAMA DEPARTEMEN :

JABATAN :

ID DEPARTEMEN
 HR : HUMAN RESOURCES
 ENG : ENGINEER
 DEV : DEVELOPER
 PM : PRODUCT MANAGER
 FIN : FINANCE

| id_karyawan | nama_karyawan | nama_departemen | nama_jabatan | salary |
|-------------|---------------|-----------------|--------------|---------|
| RN-004 | Nimala | Engineer | Intern | 0 |
| RN-005 | Hary | Product Manager | Senior | 3000.00 |
| * | | | | |

2. Melakukan Update

- Pilih row data yang akan diperbarui

Form1

Harry Potter

HUMAN RESOURCES MANAGEMENT APP

NAMA KARYAWAN :

NAMA DEPARTEMEN :

JABATAN :

ID DEPARTEMEN

- HR : HUMAN RESOURCES
- ENG : ENGINEER
- DEV : DEVELOPER
- PM : PRODUCT MANAGER
- FIN : FINANCE

Modal Dialog: RN-005 Selected!

| | id_karyawan | nama_karyawan | nama_departemen | nama_jabatan | salary |
|---|-------------|---------------|-----------------|--------------|---------|
| | RN-004 | Nimala | Engineer | Intern | 0 |
| ▶ | RN-005 | Harry | Product Manager | Senior | 3000.00 |
| * | | | | | |

- Ubah atau Edit data sesuai yang diinginkan

Form1

Harry Potter

HUMAN RESOURCES MANAGEMENT APP

NAMA KARYAWAN :

NAMA DEPARTEMEN :

JABATAN :

ID DEPARTEMEN

- HR : HUMAN RESOURCES
- ENG : ENGINEER
- DEV : DEVELOPER
- PM : PRODUCT MANAGER
- FIN : FINANCE

Modal Dialog: Data Berhasil Diubah

| | id_karyawan | nama_karyawan | nama_departemen | nama_jabatan | salary |
|---|-------------|---------------|-----------------|--------------|---------|
| | RN-004 | Nimala | Engineer | Intern | 0 |
| ▶ | RN-005 | Harry | Product Manager | Senior | 3000.00 |
| * | | | | | |

- Data telah berhasil perbarui

The screenshot shows a web application titled "Harry Potter HUMAN RESOURCES MANAGEMENT APP". It features a form for updating employee data with the following fields:

- NAMA KARYAWAN :** Harry Potter
- NAMA DEPARTEMEN :** Product Manager
- JABATAN :** Senior

Buttons for "Insert", "Update", and "Delete" are visible. A table displays the current data:

| | id_karyawan | nama_karyawan | nama_departemen | nama_jabatan | salary |
|---|-------------|---------------|-----------------|--------------|---------|
| | RN-004 | Nimala | Engineer | Intern | 0 |
| | RN-005 | Harry Potter | Product Manager | Senior | 3000.00 |
| * | | | | | |

A "Reload Data" button is located at the bottom right.

3. Melakukan Delete

- Pilih row data yang akan diperbarui hapus

The screenshot shows the same application interface, but with a confirmation dialog box open over the "Update" button. The dialog box contains the text "RN-005 Selected!" and an "OK" button. The table below shows that the row for RN-005 is highlighted in blue, indicating it is the selected record for deletion.

| | id_karyawan | nama_karyawan | nama_departemen | nama_jabatan | salary |
|---|-------------|---------------|-----------------|--------------|---------|
| | RN-004 | Nimala | Engineer | Intern | 0 |
| | RN-005 | Harry Potter | Product Manager | Senior | 3000.00 |
| * | | | | | |

- Data berhasil dihapus

Form1

Harry Potter

HUMAN RESOURCES MANAGEMENT APP

NAMA KARYAWAN :

NAMA DEPARTEMEN :

JABATAN :

ID DEPARTEMEN

HR : HUMAN RESOURCES

ENG : ENGINEER

DEV : DEVELOPER

PM : PRODUCT MANAGER

FIN : FINANCE

| | id_karyawan | nama_karyawan | nama_departemen | nama_jabatan | salary |
|---|-------------|---------------|-----------------|--------------|---------|
| | RN-004 | Nimala | Engineer | Intem | 0 |
| ▶ | RN-005 | Harry Potter | Product Manager | Senior | 3000.00 |
| * | | | | | |

Form1

Harry Potter

HUMAN RESOURCES MANAGEMENT APP

NAMA KARYAWAN :

NAMA DEPARTEMEN :

JABATAN :

ID DEPARTEMEN

HR : HUMAN RESOURCES

ENG : ENGINEER

DEV : DEVELOPER

PM : PRODUCT MANAGER

FIN : FINANCE

| | id_karyawan | nama_karyawan | nama_departemen | nama_jabatan | salary |
|---|-------------|---------------|-----------------|--------------|--------|
| | RN-001 | Rani | Engineer | Intem | 0 |
| | RN-004 | Nimala | Engineer | Intem | 0 |
| * | | | | | |

TUGAS OPSIONAL

Screenshot Konsep OOP (Polimorfisme dan Abstraksi):

1. Polimorfisme

Sebagai tambahan agar dapat menggunakan polimorfisme saya membuat simulasi salary untuk karyawan seperti modul 9

```
// Override metode Setor untuk menambahkan bonus
4 references
public override void Setor(int jumlah)
{
    if (jumlah > 0)
    {
        // Tambahkan jumlah ke saldo dan berikan bonus
        base.Setor(jumlah); // Panggil metode Setor dari kelas induk
        int bonus = (int)(jumlah * bonusRate);
        base.Setor(bonus); // Tambahkan bonus ke saldo

        // Tampilkan pesan bonus
        MessageBox.Show($"Setor berhasil dengan bonus {bonus}!");
    }
}
```

The screenshot shows a web application titled "HUMAN RESOURCES MANAGEMENT APP SALARY SIMULATION". The main display shows "SALDO: 143132". Below this, there are input fields for "ACTION" (with radio buttons for "Setor" and "Tarik"), "JUMLAH UANG" (with a value of 10000), and "PASSWORD" (with masked characters). A "Lanjut" button is at the bottom. A modal dialog box is open, displaying "Setor berhasil dengan bonus 500!" and an "OK" button. The application has a dark blue theme and a gold coin logo at the top.

2. Abstraksi

```

//abstraction
public string connectionString() //abstraction
{
    return "Host=" + host + "; Port=" + port + "; Username=" + user + "; Password=" + password + "; Database=" + database;
}

```

Screenshot Fungsi pada Postgres:

Query Query History 4, however the currep

```

1  -- Punya Rani Nirmala Prakoso |
2  -- Step 1: Membuat Sequence untuk ID Karyawan
3  CREATE SEQUENCE seq_id_karyawan
4      START 1
5      INCREMENT 1;
6
7  -- Step 2: Membuat Tabel Departemen
8  CREATE TABLE departemen (
9      id_dep SERIAL PRIMARY KEY,
10     nama_departemen VARCHAR(50)
11 );
12
13 -- Step 3: Membuat Tabel Jabatan
14 CREATE TABLE jabatan (
15     id_jabatan SERIAL PRIMARY KEY,
16     nama_jabatan VARCHAR(50),
17     salary NUMERIC(12, 2)
18 );
19
20 -- Step 4: Membuat Tabel Karyawan (Tanpa kolom redundan)
21 CREATE TABLE karyawan (
22     id_karyawan CHAR(10) PRIMARY KEY DEFAULT CONCAT('RN-', LPAD(NEXTVAL('seq_id_karyawan')::TEXT, 3, '0')),
23     nama_karyawan VARCHAR(50),
24     id_dep INT,
25     id_jabatan INT,
26     FOREIGN KEY (id_dep) REFERENCES departemen (id_dep) ON DELETE CASCADE,
27     FOREIGN KEY (id_jabatan) REFERENCES jabatan (id_jabatan) ON DELETE CASCADE
28 );

```

Please click [here](#) for i

```
30 -- Step 5: Memasukkan Data ke Tabel Departemen
31 INSERT INTO departemen (nama_departemen) VALUES
32 ('HR'),
33 ('Engineer'),
34 ('Developer'),
35 ('Product Manager'),
36 ('Finance');
37
38 -- Step 6: Memasukkan Data ke Tabel Jabatan
39 INSERT INTO jabatan (nama_jabatan, salary) VALUES
40 ('Manager', 5000),
41 ('Intern', 0),
42 ('Senior', 3000),
43 ('Junior', 2000);
44
45 -- Step 7: Memasukkan Data ke Tabel Karyawan
46 INSERT INTO karyawan (nama_karyawan, id_dep, id_jabatan) VALUES
47 ('Rani', 1, 1),
48 ('Shawn', 2, 2),
49 ('Mendes', 4, 3);
50
51 -- Step 8: Membuat View untuk menampilkan data lengkap karyawan
52 CREATE VIEW view_karyawan AS
53 SELECT
54     k.id_karyawan,
55     k.nama_karyawan,
56     d.nama_departemen,
57     j.nama_jabatan,
58     j.salary
59 FROM karyawan k
60 JOIN departemen d ON k.id_dep = d.id_dep
61 JOIN jabatan j ON k.id_jabatan = j.id_jabatan;
```