BASIS DATA LANJUT

TUGAS 11

ADHE WIDYA GALIH KARTIKA

SIB 2C_03

244107060067

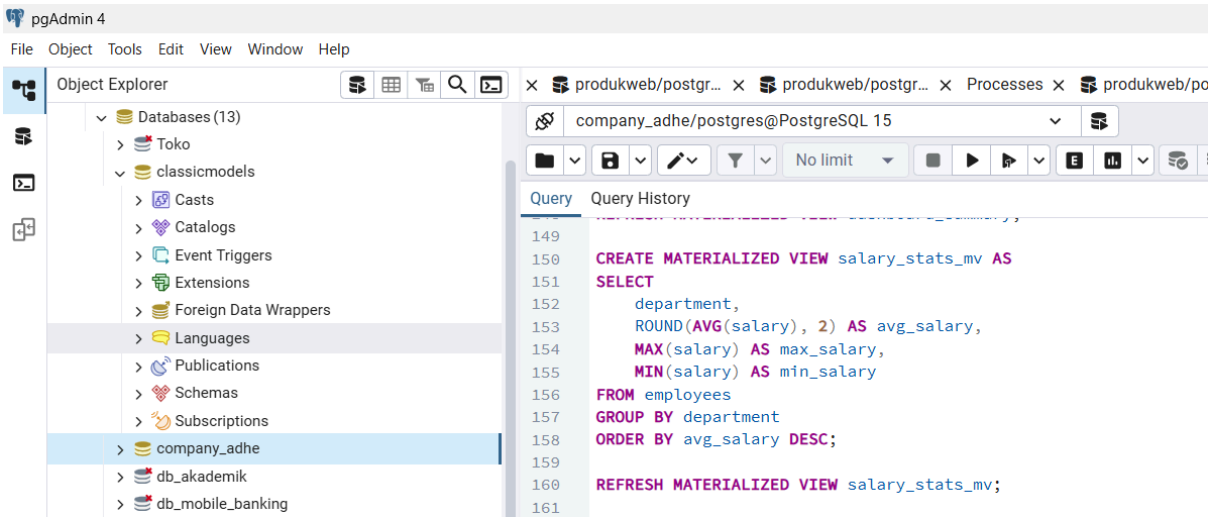
Jurusan Teknologi Informasi

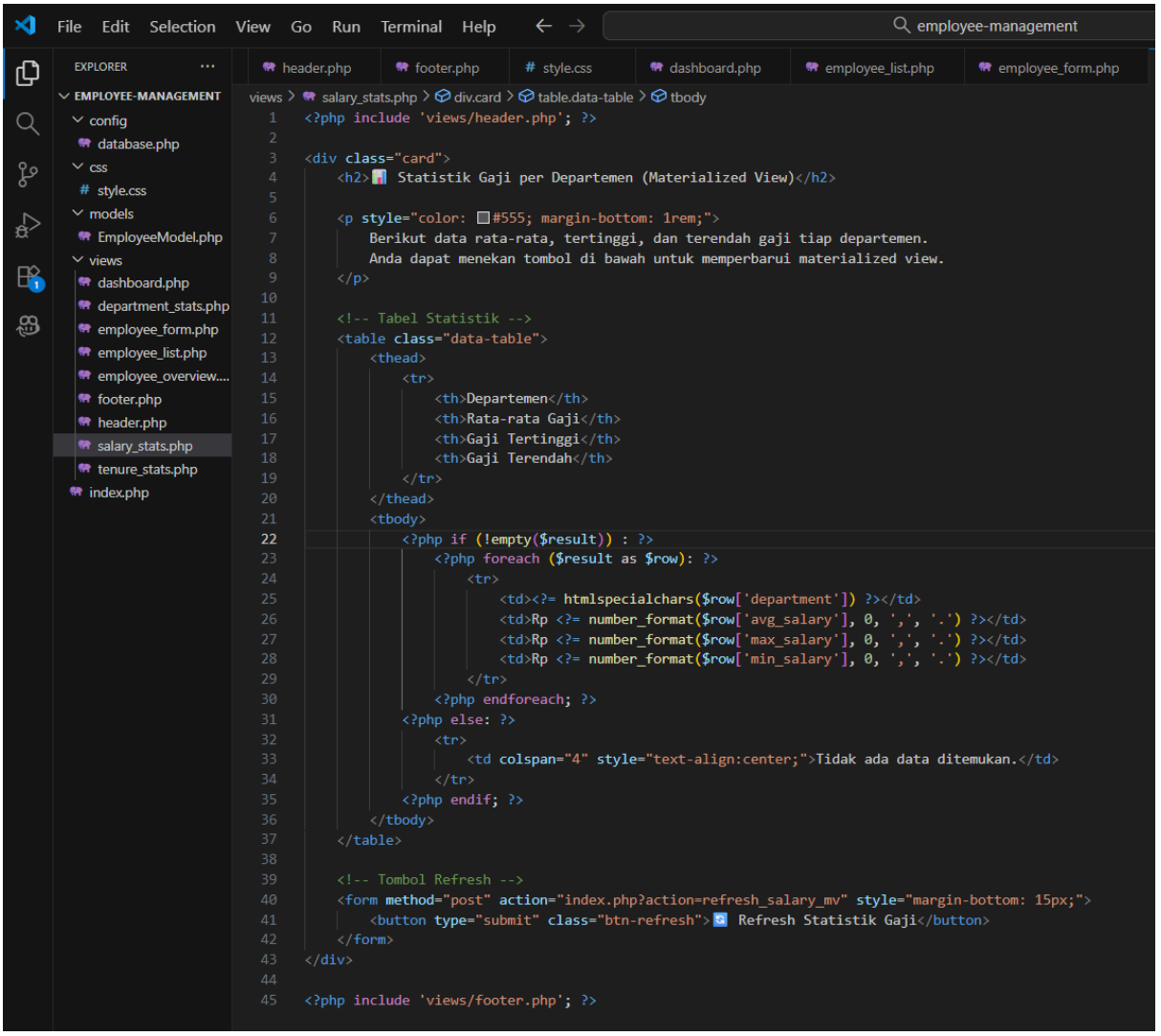
POLITEKNIK NEGERI MALANG

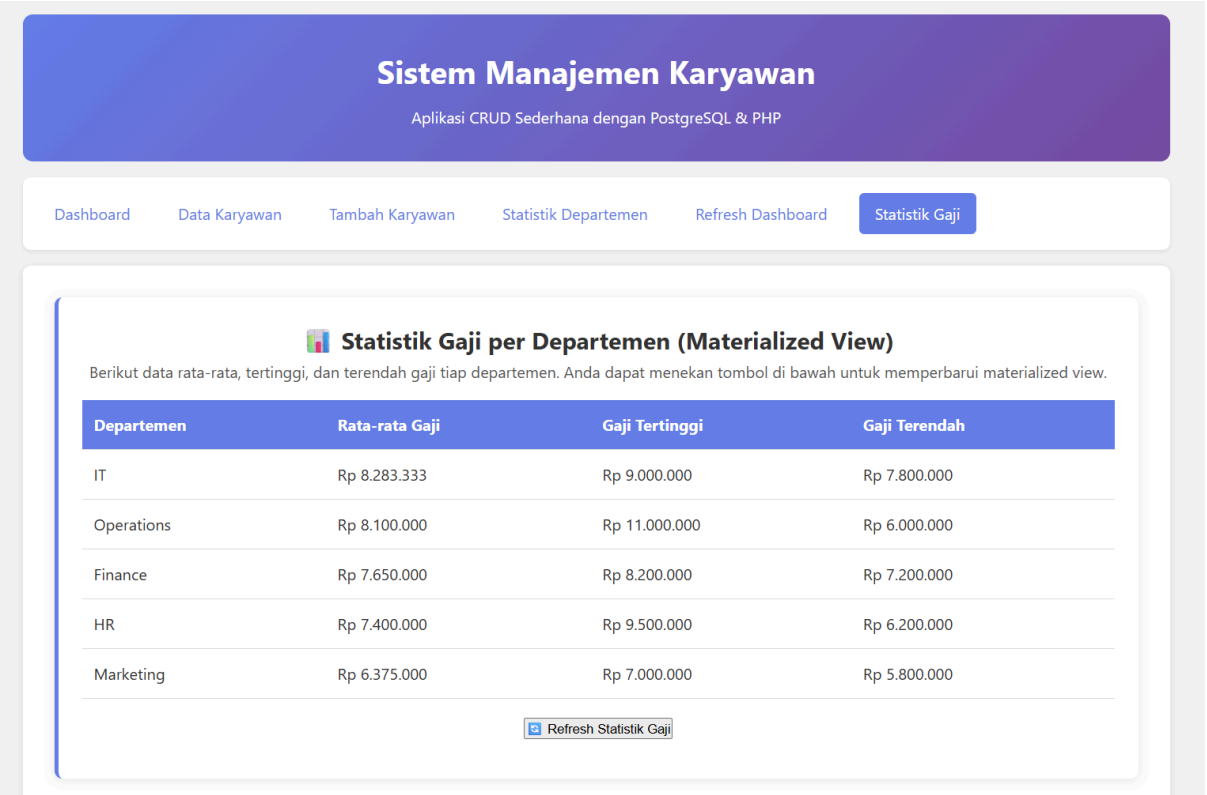
2025

TUGAS 1: IMPLEMENTASI FUNGSI AGREGAT PADA WEB

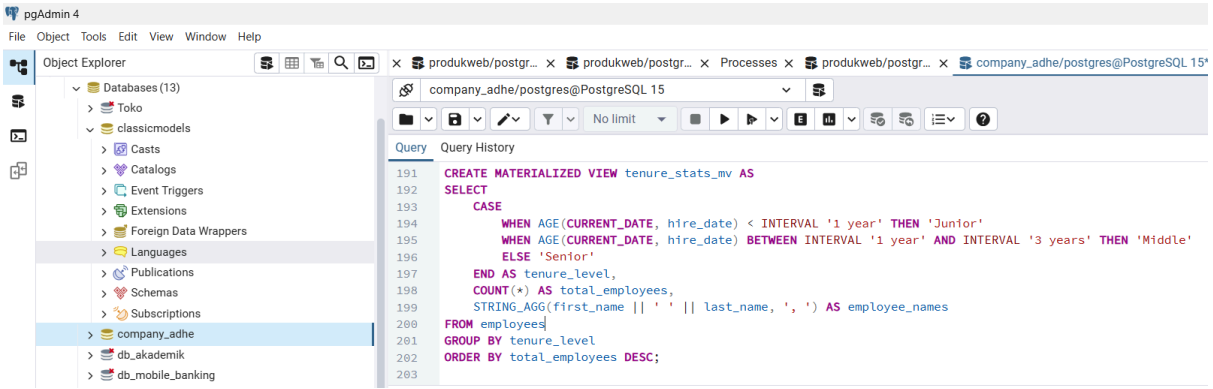
1. Halaman Statistik Gaji (salary_stats.php)
    - Tampilkan: Rata-rata gaji, gaji tertinggi, gaji terendah per departemen
    - Gunakan fungsi: AVG(), MAX(), MIN(), GROUP BY







2. Halaman Masa Kerja (tenure_stats.php)
    - Tampilkan: Karyawan berdasarkan masa kerja (Junior: <1 tahun, Middle: 1-3 tahun, Senior: >3 tahun)
    - Gunakan fungsi: COUNT(), CASE WHEN, GROUP BY



```php
<?php
/**
 * FILE: views/tenure_stats.php
 * FUNGSI: Menampilkan statistik masa kerja karyawan (Junior, Middle, Senior)
 */
include 'views/header.php';
?>

<h2>Statistik Masa Kerja Karyawan</h2>

<p style="margin-bottom: 2rem; color: #666;">
    Data berikut diambil dari <code>tenure_stats_mv</code> (Materialized View) di database PostgreSQL.
</p>

<?php if (!empty($result)): ?>
    <!-- Hitung total -->
    <?php
        $total_employees = array_sum(array_column($result, 'total_employees'));
    ?>

    <!-- Cards Summary -->
    <div class="dashboard-cards">
        <div class="card">
            <h3>Total Karyawan</h3>
            <div class="number"><?php echo $total_employees; ?></div>
        </div>
        <div class="card">
            <h3>Level Masa Kerja</h3>
            <div class="number"><?php echo count($result); ?> Level</div>
        </div>
    </div>
```

```php
    <!-- Tabel Statistik Detail -->
    <table class="data-table">
        <thead>
            <tr>
                <th>Tingkat Masa Kerja</th>
                <th>Jumlah Karyawan</th>
                <th>Nama Karyawan</th>
            </tr>
        </thead>
        <tbody>
            <?php foreach ($result as $row): ?>
            <tr>
                <td>
                    <strong><?php echo htmlspecialchars($row['tenure_level']); ?></strong>
                </td>
                <td style="text-align: center;">
                    <span style="padding: 0.25rem 0.75rem; background: #667eea; color: white; border-radius: 20px;">
                        <?php echo $row['total_employees']; ?>
                    </span>
                </td>
                <td>
                    <?php
                        $names = explode(',', $row['employee_names']);
                        echo "<ul style='margin: 0; padding-left: 20px;'>";
                        foreach ($names as $name) {
                            echo "<li>" . htmlspecialchars(trim($name)) . "</li>";
                        }
                        echo "</ul>";
                    ?>
                </td>
            </tr>
            <?php endforeach; ?>
        </tbody>
    </table>
```

```php
    <!-- Tombol Refresh -->
    <div style="text-align:center; margin-top: 30px;">
        <a href="index.php?action=refresh_tenure_mv"
           style="
               display: inline-block;
               background-color: #4a6cf7;
               color: #fff;
               padding: 10px 25px;
               border-radius: 8px;
               text-decoration: none;
               font-weight: 500;
               transition: background-color 0.3s ease;
           "
           onmouseover="this.style.backgroundColor='#3651c9'"
           onmouseout="this.style.backgroundColor='#4a6cf7'">
           🔄 Refresh Data
        </a>
    </div>

<?php else: ?>
    <div style="text-align: center; padding: 3rem; background: #f8f9fa; border-radius: 8px;">
        <p style="font-size: 1.2rem; color: #666;">Tidak ada data statistik masa kerja.</p>
        <p style="color: #999;">Pastikan materialized view <code>tenure_stats_mv</code> sudah dibuat dan di-refresh.</p>
        <a href="index.php?action=create" class="btn btn-primary" style="margin-top: 1rem;">Tambah Data Karyawan</a>
    </div>
<?php endif; ?>

<div style="margin-top: 2rem; padding: 1rem; background: #e7f3ff; border-radius: 5px;">
    <strong>Informasi:</strong>
    Data ini diambil dari Materialized View PostgreSQL dengan fungsi agregat
    <code>COUNT()</code> dan <code>STRING_AGG()</code> untuk mengelompokkan karyawan berdasarkan masa kerja.
</div>

<?php include 'views/footer.php'; ?>
```


Statistik Masa Kerja Karyawan

Data berikut diambil dari `tenure_stats_mv` (Materialized View) di database PostgreSQL.

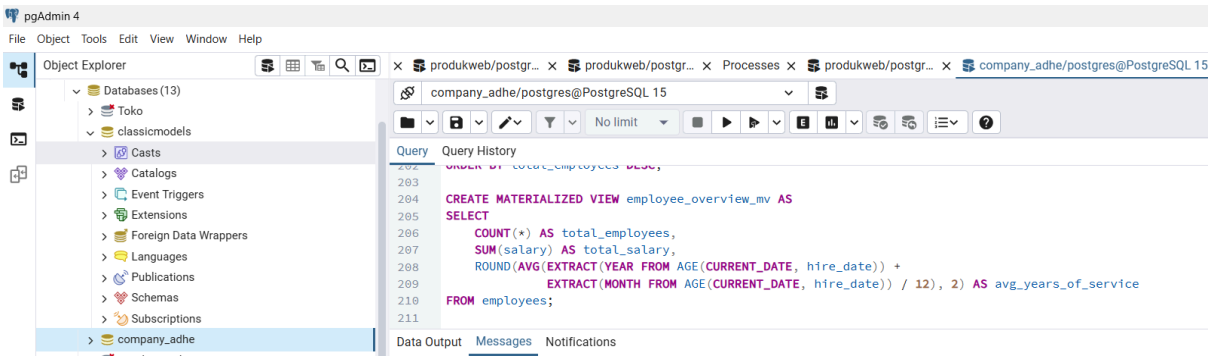
Total Karyawan	Level Masa Kerja
20	2 Level

Tingkat Masa Kerja	Jumlah Karyawan	Nama Karyawan
Middle	7	• Dewi Anggraini • Linda Permata • Rina Wulandari • Eko Supriyanto • Fitri Handayani • Gita Maharani • Nina Zahra
Senior	13	• Ahmad Hidayat • Siti Rahayu • Budi Santoso • Rizki Pratama • Maya Sari • Joko Widodo • Fajar Nugroho • Hendra Kurniawan • Dian Puspita • Irfan Setiawan • Kartika Dewi • Lukman Hakim • Oscar Fernando

🔄 Refresh Data

Informasi: Data ini diambil dari Materialized View PostgreSQL dengan fungsi agregat `COUNT()` dan `STRING_AGG()` untuk mengelompokkan karyawan berdasarkan masa kerja.

3. Halaman Ringkasan Karyawan (employee_overview.php)
    - Tampilkan: Total karyawan, total gaji per bulan, rata-rata masa kerja
    - Gunakan fungsi: COUNT(), SUM(), AVG()




```php
<?php
/**
 * FILE: views/employee_overview.php
 * FUNGSI: Menampilkan ringkasan data keseluruhan karyawan
 */
include 'views/header.php';
?>

<h2>📊 Ringkasan Karyawan</h2>

<p style="margin-bottom: 2rem; color: #666;">
    Data berikut diambil dari <code>employee_overview_mv</code> (Materialized View) PostgreSQL.
</p>

<?php if (!empty($overview)): ?>
    <!-- Cards Summary -->
    <div class="dashboard-cards">
        <div class="card">
            <h3>Total Karyawan</h3>
            <div class="number"><?php echo $overview['total_employees']; ?></div>
        </div>
        <div class="card">
            <h3>Total Gaji per Bulan</h3>
            <div class="number">Rp <?php echo number_format($overview['total_salary'], 0, ',', '.'); ?></div>
        </div>
        <div class="card">
            <h3>Rata-rata Masa Kerja</h3>
            <div class="number"><?php echo $overview['avg_years_of_service']; ?> tahun</div>
        </div>
    </div>
```

```
    <!-- Tombol Refresh -->
    <div style="text-align:center; margin-top: 30px;">
        <a href="index.php?action=refresh_employee_mv"
           style="
               display: inline-block;
               background-color: #4a6cf7;
               color: #fff;
               padding: 10px 25px;
               border-radius: 8px;
               text-decoration: none;
               font-weight: 500;
               transition: background-color 0.3s ease;
           "
           onmouseover="this.style.backgroundColor='#3651c9'"
           onmouseout="this.style.backgroundColor='#4a6cf7'">
           🔄 Refresh Data
        </a>
    </div>

<?php else: ?>
    <div style="text-align: center; padding: 3rem; background: #f8f9fa; border-radius: 8px;">
        <p style="font-size: 1.2rem; color: #666;">Tidak ada data ringkasan karyawan.</p>
        <p style="color: #999;">Pastikan materialized view <code>employee_overview_mv</code> sudah dibuat dan di-refresh.</p>
    </div>
<?php endif; ?>

<div style="margin-top: 2rem; padding: 1rem; background: #e7f3ff; border-radius: 5px;">
    <strong>Informasi:</strong>
    Data ini dihitung menggunakan fungsi agregat <code>COUNT()</code>, <code>SUM()</code>, dan <code>AVG()</code> untuk menampilkan total karyawan,
</div>

<?php include 'views/footer.php'; ?>
```

Sistem Manajemen Karyawan

Aplikasi CRUD Sederhana dengan PostgreSQL & PHP

Dashboard Data Karyawan Tambah Karyawan Statistik Departemen Refresh Dashboard Statistik Gaji

Statistik Masa Kerja Ringkasan Karyawan

📊 Ringkasan Karyawan

Data berikut diambil dari `employee_overview_mv` (Materialized View) PostgreSQL.

Total Karyawan	Total Gaji per Bulan	Rata-rata Masa Kerja
20	Rp 152.300.000	3.42 tahun

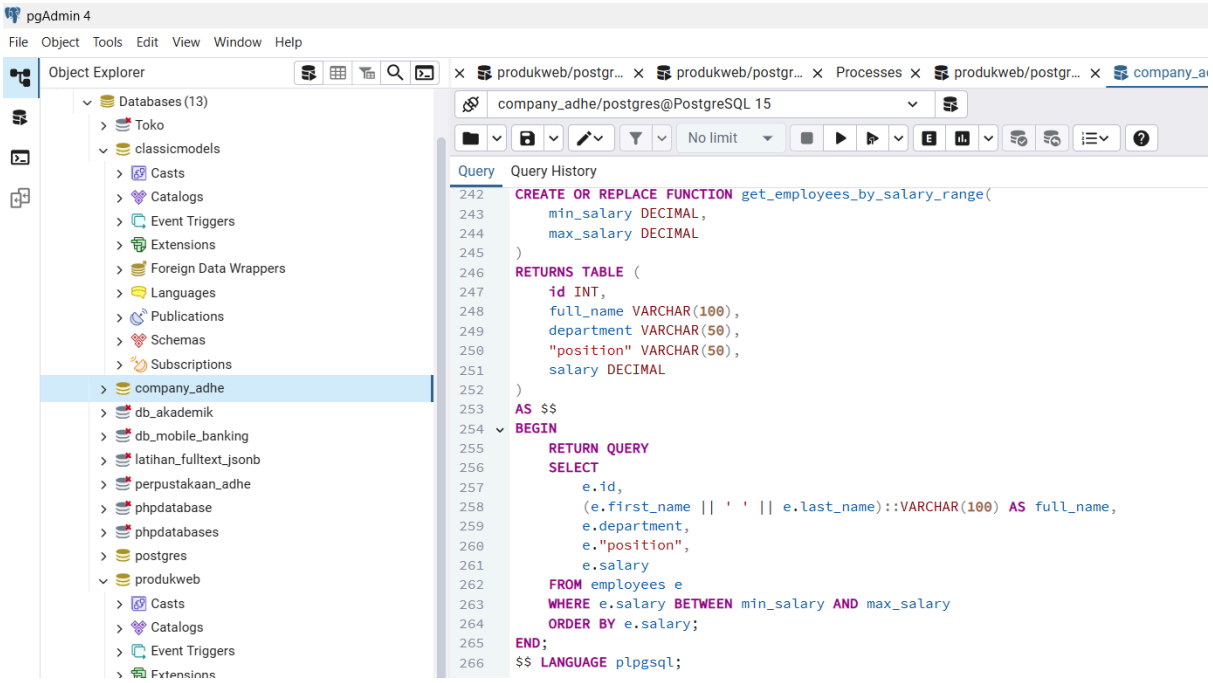
🔄 Refresh Data

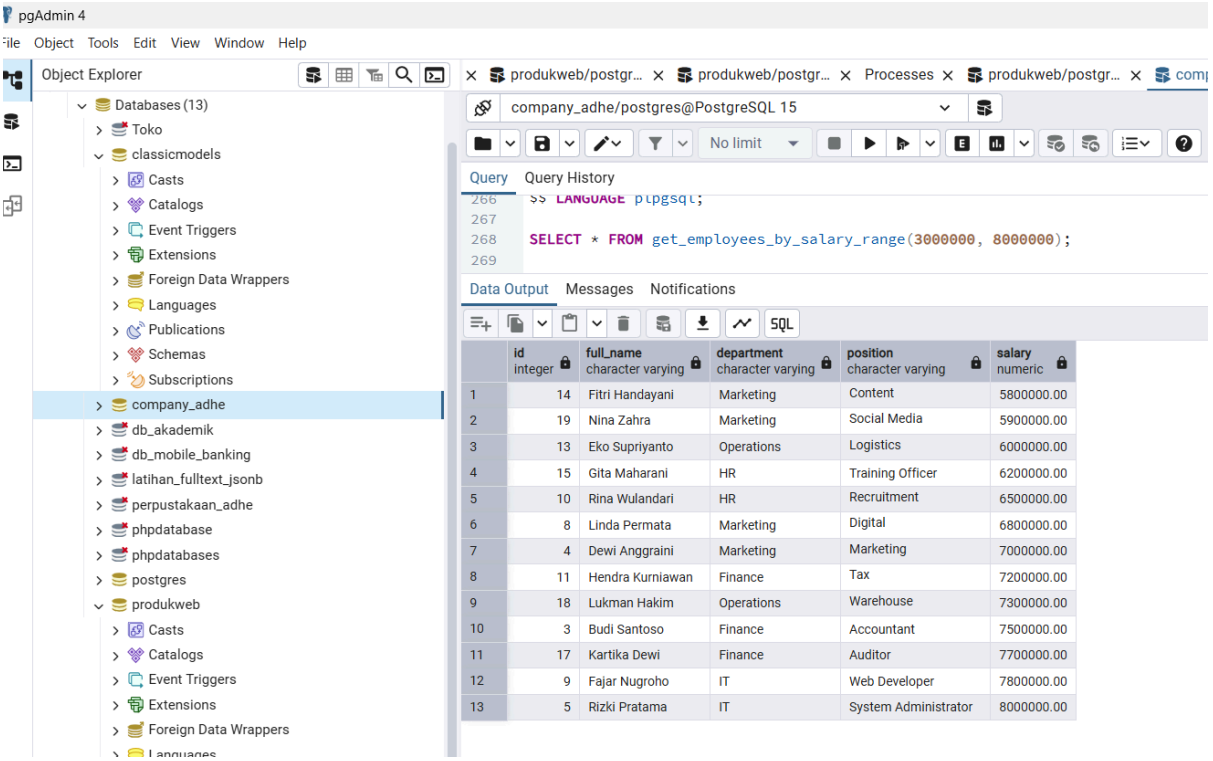
Informasi: Data ini dihitung menggunakan fungsi agregat `COUNT()`, `SUM()`, dan `AVG()` untuk menampilkan total karyawan, total gaji, serta rata-rata masa kerja.

TUGAS 2: BUAT TABLE FUNCTION POSTGRESQL

1. Function: get_employees_by_salary_range(min_salary DECIMAL, max_salary DECIMAL)

- Mengembalikan: karyawan dengan gaji dalam range tertentu
- Kolom: id, full_name, department, position, salary





	id integer	full_name character varying	department character varying	position character varying	salary numeric
1	14	Fitri Handayani	Marketing	Content	5800000.00
2	19	Nina Zahra	Marketing	Social Media	5900000.00
3	13	Eko Supriyanto	Operations	Logistics	6000000.00
4	15	Gita Maharani	HR	Training Officer	6200000.00
5	10	Rina Wulandari	HR	Recruitment	6500000.00
6	8	Linda Permata	Marketing	Digital	6800000.00
7	4	Dewi Anggraini	Marketing	Marketing	7000000.00
8	11	Hendra Kurniawan	Finance	Tax	7200000.00
9	18	Lukman Hakim	Operations	Warehouse	7300000.00
10	3	Budi Santoso	Finance	Accountant	7500000.00
11	17	Kartika Dewi	Finance	Auditor	7700000.00
12	9	Fajar Nugroho	IT	Web Developer	7800000.00
13	5	Rizki Pratama	IT	System Administrator	8000000.00

2. Function: get_department_summary()

- Mengembalikan: ringkasan statistik per departemen
- Kolom: department, employee_count, avg_salary, total_budget