

LAPORAN HASIL PRATIKUM

BASIS DATA LANJUT



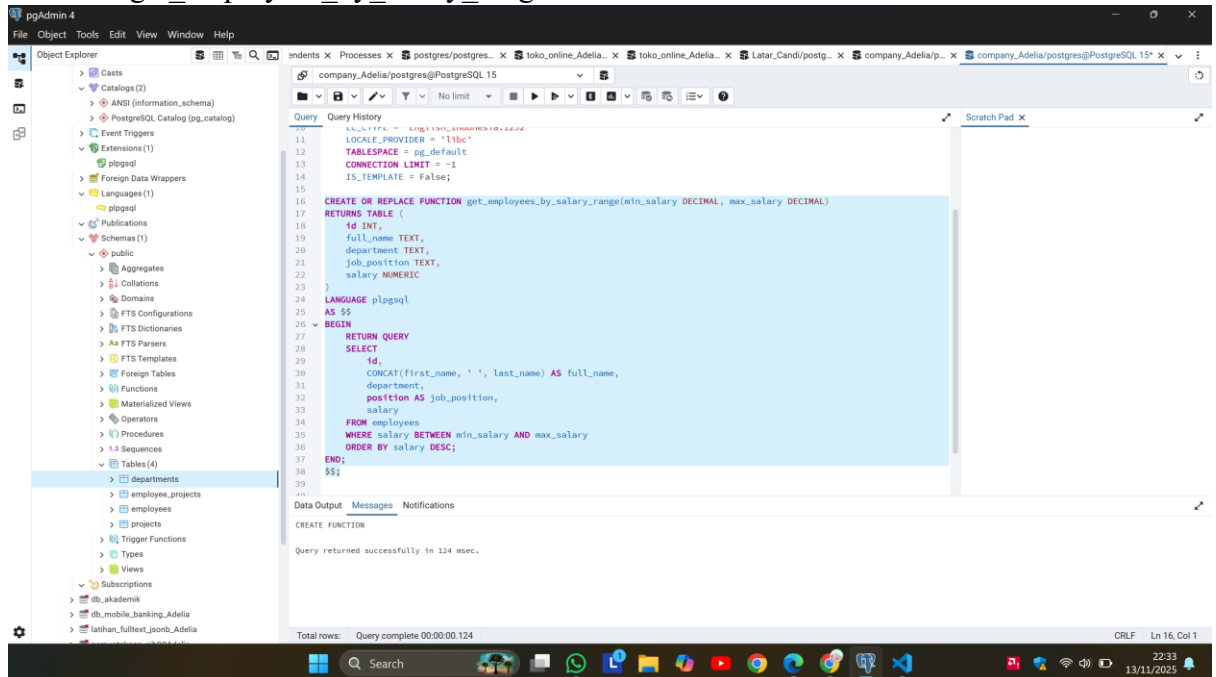
Oleh:

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Kelas:2C

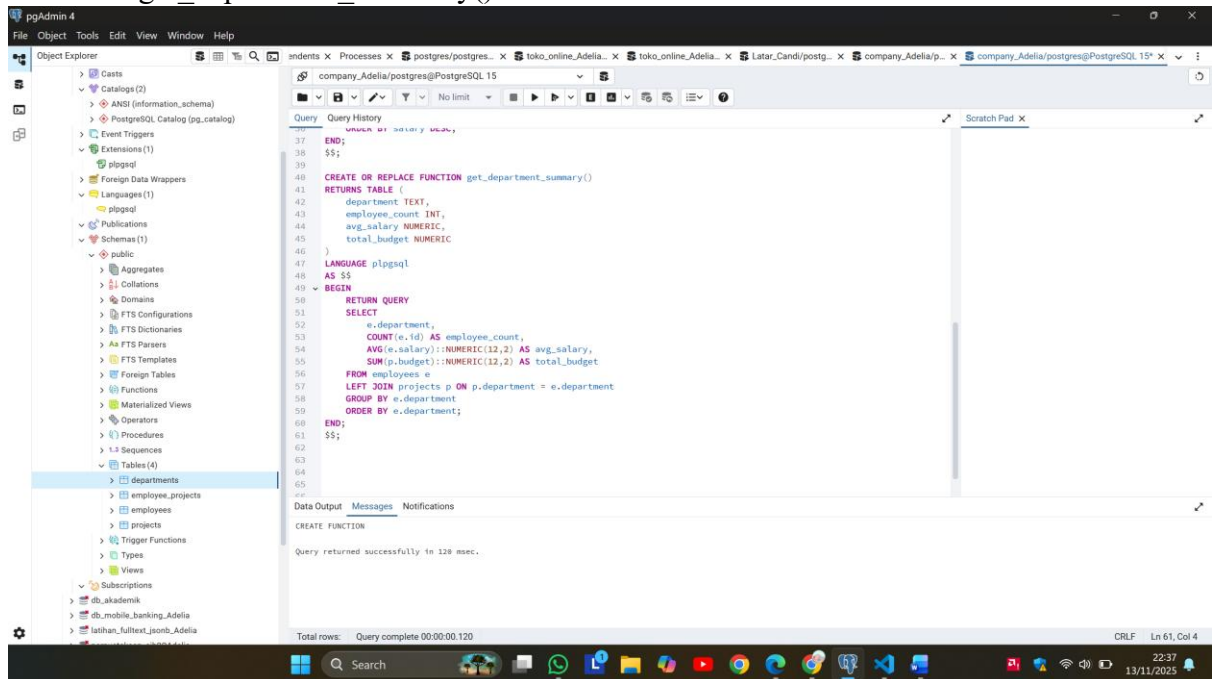
1. Function get_employees_by_salary_range



```
CREATE OR REPLACE FUNCTION get_employees_by_salary_range(min_salary DECIMAL, max_salary DECIMAL)
RETURNS TABLE (
    id INT,
    full_name TEXT,
    department TEXT,
    job_position TEXT,
    salary NUMERIC
)
LANGUAGE plpgsql
AS $$
BEGIN
    RETURN QUERY
    SELECT
        id,
        CONCAT(first_name, ' ', last_name) AS full_name,
        department,
        position AS job_position,
        salary
    FROM employees
    WHERE salary BETWEEN min_salary AND max_salary
    ORDER BY salary DESC;
END;
$$;
```

Query returned successfully in 124 msec.

2. Function: get_department_summary()



```
CREATE OR REPLACE FUNCTION get_department_summary()
RETURNS TABLE (
    department TEXT,
    employee_count INT,
    avg_salary NUMERIC,
    total_budget NUMERIC
)
LANGUAGE plpgsql
AS $$
BEGIN
    RETURN QUERY
    SELECT
        e.department,
        COUNT(e.id) AS employee_count,
        AVG(e.salary)::NUMERIC(12,2) AS avg_salary,
        SUM(p.budget)::NUMERIC(12,2) AS total_budget
    FROM employees e
    LEFT JOIN projects p ON p.department = e.department
    GROUP BY e.department;
END;
$$;
```

Query returned successfully in 128 msec.

3. Tambahkan method berikut di file impleyee model

```

114 public function getSalaryStats() {
115     $sql = "SELECT department,
116             AVG(salary)::numeric(12,2) AS avg_salary,
117             MAX(salary) AS max_salary,
118             MIN(salary) AS min_salary
119             FROM {$this->table_name}
120             GROUP BY department
121             ORDER BY department";
122     $stmt = $this->conn->prepare($sql);
123     $stmt->execute();
124     return $stmt;
125 }
126
127 public function getTenureStats() {
128     $sql = "SELECT category, COUNT(*) AS employee_count FROM (
129             SELECT id, CONCAT(first_name, ' ', last_name) AS full_name, hire_date,
130                    CASE
131                        WHEN DATE_PART('year', AGE(CURRENT_DATE, hire_date)) = 0 THEN 'Junior'
132                        WHEN DATE_PART('year', AGE(CURRENT_DATE, hire_date)) BETWEEN 1 AND 3 THEN 'Middle'
133                        ELSE 'Senior'
134                    END AS category
135             FROM {$this->table_name}
136             ) t
137             GROUP BY category
138             ORDER BY CASE WHEN category='Junior' THEN 1 WHEN category='Middle' THEN 2 ELSE 3 END";
139     $stmt = $this->conn->prepare($sql);
140     $stmt->execute();
141     return $stmt;
142 }
143
144 public function getEmployeeOverview() {
145     $sql = "SELECT
146             COUNT(*) AS total_employees,
147             SUM(salary) AS total_salary_per_month,
148             AVG(EXTRACT(YEAR FROM AGE(CURRENT_DATE, hire_date))::numeric(5,2) AS avg_years_service
149             FROM {$this->table_name}";
150     $stmt = $this->conn->prepare($sql);
151     $stmt->execute();
152     return $stmt->fetch(PDO::FETCH_ASSOC);
153 }
154
155 // Methods to call the Postgres table functions (optional)
156 public function getEmployeesBySalaryRange($min, $max) {
157     $sql = "SELECT * FROM get_employees_by_salary_range(:min_salary, :max_salary)";
158     $stmt = $this->conn->prepare($sql);
159     $stmt->bindValue(':min_salary', $min);
160     $stmt->bindValue(':max_salary', $max);
161     $stmt->execute();
162     return $stmt;
163 }

```

4. views/salary_stats.php

```

1  <?php
2  include 'views/header.php';
3  ?>
4  <h2>Statistik Gaji per Departemen</h2>
5
6  <?php
7  $stats = $employeeModel->getSalaryStats();
8  $rows = $stats->fetchAll(PDO::FETCH_ASSOC);
9  if (count($rows) > 0):
10  ?>
11  <table class="data-table">
12      <thead>
13          <tr><th>Departemen</th><th>Rata-rata Gaji</th><th>Gaji Tertinggi</th><th>Gaji Terendah</th></tr>
14      </thead>
15      <tbody>
16          <?php foreach($rows as $r): ?>
17              <tr>
18                  <td><?php echo htmlspecialchars($r['department']); ?></td>
19                  <td>Rp <?php echo number_format($r['avg_salary'],0,',','.'); ?></td>
20                  <td>Rp <?php echo number_format($r['max_salary'],0,',','.'); ?></td>
21                  <td>Rp <?php echo number_format($r['min_salary'],0,',','.'); ?></td>
22              </tr>
23          <?php endforeach; ?>
24      </tbody>
25  </table>
26  <?php else: ?>
27      <p>Tidak ada data gaji.</p>
28  <?php endif; ?>
29
30  <?php include 'views/footer.php'; ?>
31

```

5. views/tenure_stats.php

```

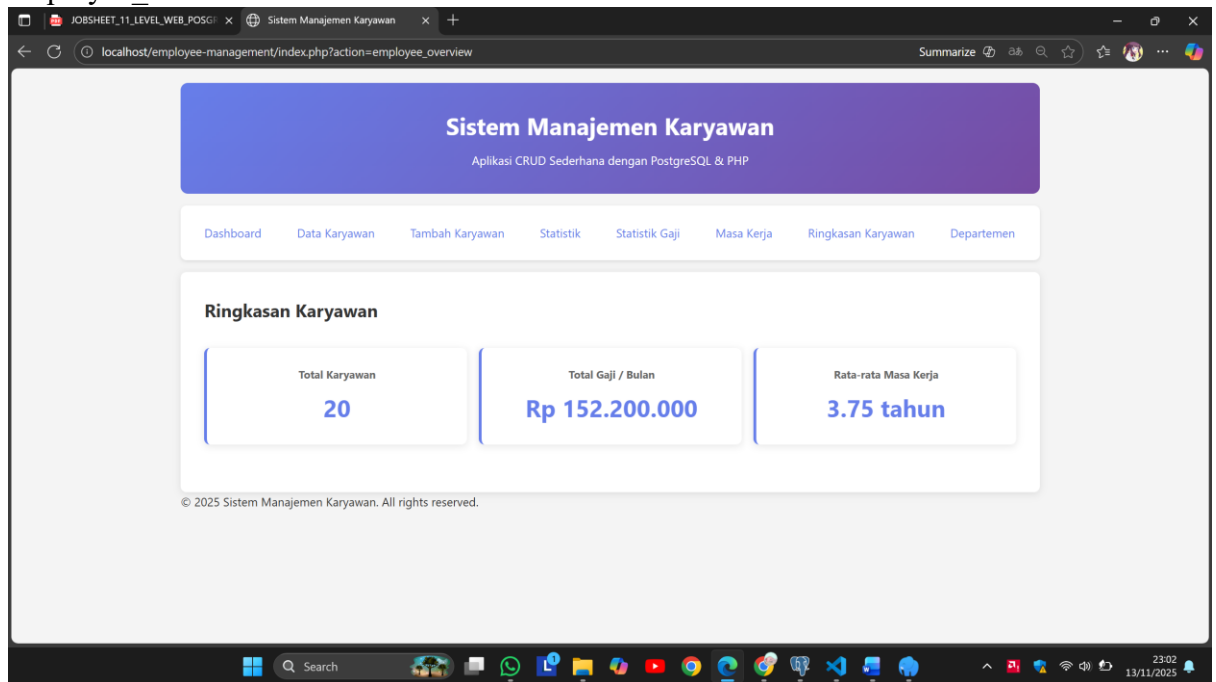
1  <?php
2  include 'views/header.php';
3  ?>
4  <h2>Statistik Masa Kerja</h2>
5
6  <?php
7  $stats = $employeeModel->getTenureStats();
8  $rows = $stats->fetchAll(PDO::FETCH_ASSOC);
9  if (count($rows) > 0):
10  ?>
11  <table class="data-table">
12      <thead>
13          <tr><th>Kategori</th><th>Jumlah Karyawan</th></tr>
14      </thead>
15      <tbody>
16          <?php foreach($rows as $r): ?>
17              <tr>
18                  <td><?php echo htmlspecialchars($r['category']); ?></td>
19                  <td style="text-align:center;"><?php echo $r['employee_count']; ?></td>
20              </tr>
21          <?php endforeach; ?>
22      </tbody>
23  </table>
24  <?php else: ?>
25      <p>Tidak ada data masa kerja.</p>
26  <?php endif; ?>
27
28  <?php include 'views/footer.php'; ?>
29

```

6. views/employee_overview.php

```
views > employee_overview.php > ...
1 <?php
2 include 'views/header.php';
3 ?>
4 <h2>Ringkasan Karyawan</h2>
5
6 <?php
7 $overview = $employeeModel->getEmployeeOverview();
8 ?>
9 <div class="dashboard-cards">
10     <div class="card">
11         <h3>Total Karyawan</h3>
12         <div class="number"><?php echo $overview['total_employees']; ?></div>
13     </div>
14     <div class="card">
15         <h3>Total Gaji / Bulan</h3>
16         <div class="number">Rp <?php echo number_format($overview['total_salary_per_month'],0,',','.'); ?></div>
17     </div>
18     <div class="card">
19         <h3>Rata-rata Masa Kerja</h3>
20         <div class="number"><?php echo $overview['avg_years_service']; ?> tahun</div>
21     </div>
22 </div>
23
24 <?php include 'views/footer.php'; ?>
25
```

7. employee_overview



8. tenure_stats

Sistem Manajemen Karyawan
Aplikasi CRUD Sederhana dengan PostgreSQL & PHP

Dashboard Data Karyawan Tambah Karyawan Statistik Statistik Gaji **Masa Kerja** Ringkasan Karyawan Departemen

Statistik Masa Kerja

Kategori	Jumlah Karyawan
Middle	14
Senior	6

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9. salary_stats

Sistem Manajemen Karyawan
Aplikasi CRUD Sederhana dengan PostgreSQL & PHP

Dashboard Data Karyawan Tambah Karyawan Statistik Statistik Gaji Masa Kerja Ringkasan Karyawan Departemen

Statistik Gaji per Departemen

Departemen	Rata-rata Gaji	Gaji Tertinggi	Gaji Terendah
Finance	Rp 7.650.000	Rp 8.200.000	Rp 7.200.000
HR	Rp 7.025.000	Rp 9.500.000	Rp 5.900.000
IT	Rp 8.266.667	Rp 9.000.000	Rp 7.800.000
Marketing	Rp 6.533.333	Rp 7.000.000	Rp 5.800.000
Operations	Rp 8.100.000	Rp 11.000.000	Rp 6.000.000

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