**Week 4: Pivot Tables and Pivot Charts**

**Dataset:** Faculty Details

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Faculty Name** | **Age** | **Department** | **Position** | **Salary** | **Region** | **Hire Date** |
| Alice Brown | 45 | Mathematics | Professor | 85000 | North | 2010-01-15 |
| Bob Johnson | 38 | Physics | Associate Prof | 75000 | East | 2012-02-10 |
| Charlie Black | 50 | Chemistry | Professor | 92000 | West | 2008-03-05 |
| Eve White | 35 | Mathematics | Assistant Prof | 60000 | South | 2015-04-20 |
| Frank Green | 40 | Biology | Professor | 87000 | North | 2011-05-30 |
| Grace Blue | 45 | Physics | Professor | 90000 | East | 2009-06-15 |
| Hank Purple | 37 | Chemistry | Associate Prof | 70000 | West | 2013-07-01 |
| Ivy Orange | 42 | Biology | Associate Prof | 72000 | South | 2012-07-20 |
| Jane Smith | 48 | Mathematics | Professor | 88000 | North | 2007-08-15 |
| John Doe | 36 | Physics | Assistant Prof | 65000 | East | 2016-09-05 |
| Kate Yellow | 39 | Chemistry | Assistant Prof | 68000 | West | 2014-10-15 |
| Luke Cyan | 44 | Biology | Professor | 89000 | South | 2010-11-10 |

**Exercises for Pivot Tables and Pivot Charts:**

**1. PivotTable: Total Salary by Department**

Objective: Create a PivotTable to display the total salary for each department.

Steps:

1. Select the entire dataset.

2. Go to the "Insert" tab and click on "PivotTable."

3. Choose where to place the PivotTable (e.g., a new worksheet).

4. Drag " Department" to the Rows area.

5. Drag "Salary" to the Values area.

6. Ensure the aggregation function is set to "Sum."

**2. PivotChart: Average Salary by Region**

Objective: Create a PivotChart to display the average salary by region.

Steps:

1. Create a PivotTable with "Region" in the Rows area and "Salary" in the Values area, set to "Average."

2. Click anywhere inside the PivotTable.

3. Go to the "PivotTable Analyze" tab and click on "PivotChart."

4. Choose a chart type (e.g., "Clustered Column").

**3. PivotTable: Count of Faculty by Position**

Objective: Create a PivotTable to display the count of faculty members by position.

Steps:

1. Select the entire dataset.

2. Go to the "Insert" tab and click on "PivotTable."

3. Choose where to place the PivotTable.

4. Drag "Position" to the Rows area.

5. Drag "Faculty Name" to the Values area.

6. Ensure the aggregation function is set to "Count."

**4. PivotChart: Salary Distribution by Department**

Objective: Create a PivotChart to display the distribution of salaries by department.

Steps:

1. Create a PivotTable with "Department" in the Rows area and "Salary" in the Values area.

2. Click anywhere inside the PivotTable.

3. Go to the "PivotTable Analyze" tab and click on "PivotChart."

4. Choose a chart type (e.g., "Box and Whisker" or "Histogram").

**5. PivotTable: Average Age by Department**

Objective: Create a PivotTable to display the average age of faculty members by department.

Steps:

1. Select the entire dataset.

2. Go to the "Insert" tab and click on "PivotTable."

3. Choose where to place the PivotTable.

4. Drag "Department" to the Rows area.

5. Drag "Age" to the Values area.

6. Ensure the aggregation function is set to "Average."

**6. PivotChart: Number of Faculty Hired Each Year**

Objective: Create a PivotChart to display the number of faculty members hired each year.

Steps:

1. Create a PivotTable with "Hire Date" (grouped by year) in the Rows area and "Faculty Name" in the Values area (set to count).

2. Click anywhere inside the PivotTable.

3. Go to the "PivotTable Analyze" tab and click on "PivotChart."

4. Choose a chart type (e.g., "Line").

**7. PivotTable: Total Salary by Region and Department**

Objective: Create a PivotTable to display the total salary by region and department.

Steps:

1. Select the entire dataset.

2. Go to the "Insert" tab and click on "PivotTable."

3. Choose where to place the PivotTable.

4. Drag "Region" to the Rows area.

5. Drag "Department" to the Columns area.

6. Drag "Salary" to the Values area.

7. Ensure the aggregation function is set to "Sum."

**8. PivotChart: Salary and Age Distribution**

Objective: Create a PivotChart to display the distribution of salary and age.

Steps:

1. Create a PivotTable with "Age" and "Salary" in the Rows area (grouped as needed) and "Faculty Name" in the Values area (set to count).

2. Click anywhere inside the PivotTable.

3. Go to the "PivotTable Analyze" tab and click on "PivotChart."

4. Choose a chart type (e.g., "Scatter").

**9. PivotTable: Count of Faculty by Region and Position**

Objective: Create a PivotTable to display the count of faculty members by region and position.

Steps:

1. Select the entire dataset.

2. Go to the "Insert" tab and click on "PivotTable."

3. Choose where to place the PivotTable.

4. Drag "Region" to the Rows area.

5. Drag "Position" to the Columns area.

6. Drag "Faculty Name" to the Values area.

7. Ensure the aggregation function is set to "Count."

**10. PivotChart: Average Salary by Position Over Time**

Objective: Create a PivotChart to display the average salary by position over time.

Steps:

1. Create a PivotTable with "Hire Date" (grouped by year) in the Rows area, "Position" in the Columns area, and "Salary" in the Values area (set to average).

2. Click anywhere inside the PivotTable.

3. Go to the "PivotTable Analyze" tab and click on "PivotChart."

4. Choose a chart type (e.g., "Line").