Gráficas proyecto final

Consultas SQL

Lista de Estadísticas Clave

1. **Distribución de Habilidades entre los Aplicantes**
   - **Descripción**: Identificar cuáles habilidades son más comunes entre los aplicantes.
   - **SQL**:

```SQL
SELECT s.skill_name, COUNT(*) AS num_applicants
FROM ApplicantSkills AS a
JOIN Skills AS s ON a.skill_id = s.skill_id
GROUP BY s.skill_name
ORDER BY num_applicants DESC;
```

2. **Experiencia Promedio por Campo**
   - **Descripción**: Determinar la experiencia promedio de los aplicantes en cada campo de experiencia laboral.
   - **SQL**:

```SQL
SELECT ef.field_name, AVG(ae.years_of_experience) AS
avg_experience
FROM ApplicantExperience AS ae
JOIN ExperienceFields AS ef ON ae.experience_field_id =
ef.field_id
GROUP BY ef.field_name
ORDER BY avg_experience DESC;
```

3. **Cantidad de Aplicantes por Empresa**

- **Descripción**: Ver cuántos aplicantes tienen experiencia previa en cada empresa.
- **SQL**:

```sql
SELECT c.company_name, COUNT(*) AS num_applicants
FROM ApplicantExperience AS ae
JOIN Companies AS c ON ae.company_id = c.company_id
GROUP BY c.company_name
ORDER BY num_applicants DESC;
```

4. **Distribución de Aplicantes por Cargo**
   - **Descripción**: Determinar en qué cargos han trabajado los aplicantes.
   - **SQL**:

```sql
SELECT p.position_name, COUNT(*) AS num_applicants
FROM ApplicantExperience AS ae
JOIN Positions AS p ON ae.position_id = p.position_id
GROUP BY p.position_name
ORDER BY num_applicants DESC;
```

5. **Habilidades Más Demandadas por Campo de Experiencia**
   - **Descripción**: Identificar cuáles habilidades son más comunes en cada campo de experiencia laboral.
   - **SQL**:

```sql
SELECT ef.field_name, s.skill_name, COUNT(*) AS
num_applicants
FROM ApplicantExperience AS ae
JOIN ExperienceFields AS ef ON ae.experience_field_id =
ef.field_id
JOIN ApplicantSkills AS as ON ae.applicant_id =
as.applicant_id
JOIN Skills AS s ON as.skill_id = s.skill_id
GROUP BY ef.field_name, s.skill_name
ORDER BY ef.field_name, num_applicants DESC;
```

6. **Tendencias de Aplicantes por Año de Experiencia**
   - **Descripción**: Análisis de cuántos aplicantes tienen diferentes rangos de años de experiencia.
   - **SQL**:

```sql
SELECT ae.years_of_experience, COUNT(*) AS
num_applicants
FROM ApplicantExperience AS ae
GROUP BY ae.years_of_experience
ORDER BY ae.years_of_experience;
```

Gráficas en Bokeh

1. Distribución de Habilidades entre los Aplicantes

PYTHON

```python
from bokeh.io import show, output_notebook
from bokeh.plotting import figure
from bokeh.transform import factor_cmap
from bokeh.models import ColumnDataSource
from bokeh.palettes import Spectral6

# Supongamos que 'data_skills' es el resultado de la consulta
SQL en forma de un DataFrame
# data_skills = pd.DataFrame({'skill_name': ['Skill1',
'Skill2', 'Skill3'], 'num_applicants': [100, 150, 80]})

output_notebook()

# Datos de ejemplo
data_skills = {'skill_name': ['Skill1', 'Skill2', 'Skill3'],
'num_applicants': [100, 150, 80]}
source = ColumnDataSource(data=data_skills)

p = figure(x_range=data_skills['skill_name'], plot_height=350,
title="Distribución de Habilidades entre los Aplicantes",
           toolbar_location=None, tools="")

p.vbar(x='skill_name', top='num_applicants', width=0.9,
source=source, legend_field="skill_name",
       line_color='white', fill_color=factor_cmap('skill_name',
palette=Spectral6, factors=data_skills['skill_name']))

p.xgrid.grid_line_color = None
p.y_range.start = 0
p.yaxis.axis_label = "Número de Aplicantes"
p.xaxis.axis_label = "Habilidades"
p.legend.orientation = "horizontal"
p.legend.location = "top_center"
```

```
show(p)
```

2. Experiencia Promedio por Campo

PYTHON

```python
# Supongamos que 'data_experience' es el resultado de la
consulta SQL en forma de un DataFrame
# data_experience = pd.DataFrame({'field_name': ['Field1',
'Field2', 'Field3'], 'avg_experience': [5.5, 3.2, 6.1]})

# Datos de ejemplo
data_experience = {'field_name': ['Field1', 'Field2',
'Field3'], 'avg_experience': [5.5, 3.2, 6.1]}
source = ColumnDataSource(data=data_experience)

p = figure(x_range=data_experience['field_name'],
plot_height=350, title="Experiencia Promedio por Campo",
           toolbar_location=None, tools="")

p.vbar(x='field_name', top='avg_experience', width=0.9,
source=source, legend_field="field_name",
       line_color='white', fill_color=factor_cmap('field_name',
palette=Spectral6, factors=data_experience['field_name']))

p.xgrid.grid_line_color = None
p.y_range.start = 0
p.yaxis.axis_label = "Años Promedio de Experiencia"
p.xaxis.axis_label = "Campos de Experiencia"
p.legend.orientation = "horizontal"
p.legend.location = "top_center"

show(p)
```

3. Cantidad de Aplicantes por Empresa

PYTHON

```python
# Supongamos que 'data_companies' es el resultado de la
consulta SQL en forma de un DataFrame
# data_companies = pd.DataFrame({'company_name': ['Company1',
'Company2', 'Company3'], 'num_applicants': [200, 150, 180]})

# Datos de ejemplo
data_companies = {'company_name': ['Company1', 'Company2',
'Company3'], 'num_applicants': [200, 150, 180]}
source = ColumnDataSource(data=data_companies)

p = figure(x_range=data_companies['company_name'],
plot_height=350, title="Cantidad de Aplicantes por Empresa",
           toolbar_location=None, tools="")

p.vbar(x='company_name', top='num_applicants', width=0.9,
source=source, legend_field="company_name",
       line_color='white',
fill_color=factor_cmap('company_name', palette=Spectral6,
factors=data_companies['company_name']))

p.xgrid.grid_line_color = None
p.y_range.start = 0
p.yaxis.axis_label = "Número de Aplicantes"
p.xaxis.axis_label = "Empresas"
p.legend.orientation = "horizontal"
p.legend.location = "top_center"

show(p)
```

4. Distribución de Aplicantes por Cargo

PYTHON

```python
# Supongamos que 'data_positions' es el resultado de la
consulta SQL en forma de un DataFrame
# data_positions = pd.DataFrame({'position_name': ['Position1',
'Position2', 'Position3'], 'num_applicants': [120, 160, 140]})

# Datos de ejemplo
data_positions = {'position_name': ['Position1', 'Position2',
'Position3'], 'num_applicants': [120, 160, 140]}
source = ColumnDataSource(data=data_positions)

p = figure(x_range=data_positions['position_name'],
plot_height=350, title="Distribución de Aplicantes por Cargo",
           toolbar_location=None, tools="")

p.vbar(x='position_name', top='num_applicants', width=0.9,
source=source, legend_field="position_name",
       line_color='white',
fill_color=factor_cmap('position_name', palette=Spectral6,
factors=data_positions['position_name']))

p.xgrid.grid_line_color = None
p.y_range.start = 0
p.yaxis.axis_label = "Número de Aplicantes"
p.xaxis.axis_label = "Cargos"
p.legend.orientation = "horizontal"
p.legend.location = "top_center"

show(p)
```

5. Habilidades Más Demandadas por Campo de Experiencia

PYTHON

```python
# Supongamos que 'data_field_skills' es el resultado de la
consulta SQL en forma de un DataFrame
# data_field_skills = pd.DataFrame({'field_name': ['Field1',
'Field1', 'Field2'], 'skill_name': ['Skill1', 'Skill2',
'Skill1'], 'num_applicants': [50, 30, 80]})

# Datos de ejemplo
data_field_skills = {
    'field_name': ['Field1', 'Field1', 'Field2'],
    'skill_name': ['Skill1', 'Skill2', 'Skill1'],
    'num_applicants': [50, 30, 80]
}
source = ColumnDataSource(data=data_field_skills)

p = figure(x_range=data_field_skills['field_name'],
plot_height=350, title="Habilidades Más Demandadas por Campo de
Experiencia",
           toolbar_location=None, tools="")

p.vbar(x='field_name', top='num_applicants', width=0.9,
source=source, legend_field="skill_name",
       line_color='white', fill_color=factor_cmap('skill_name',
palette=Spectral6, factors=data_field_skills['skill_name']))

p.xgrid.grid_line_color = None
p.y_range.start = 0
p.yaxis.axis_label = "Número de Aplicantes"
p.xaxis.axis_label = "Campos de Experiencia"
p.legend.orientation = "horizontal"
p.legend.location = "top_center"

show(p)
```

6. Tendencias de Aplicantes por Año de Experiencia

PYTHON

```python
# Supongamos que 'data_experience_years' es el resultado de la consulta SQL en forma de un DataFrame
# data_experience_years = pd.DataFrame({'years_of_experience': [1, 2, 3, 4, 5], 'num_applicants': [20, 40, 60, 80, 100]})

# Datos de ejemplo
data_experience_years = {
    'years_of_experience': [1, 2, 3, 4, 5],
    'num_applicants': [20, 40, 60, 80, 100]
}
source = ColumnDataSource(data=data_experience_years)

p = figure(plot_height=350, title="Tendencias de Aplicantes por Año de Experiencia",
           toolbar_location=None, tools="")

p.vbar(x='years_of_experience', top='num_applicants', width=0.9, source=source,
       line_color='white', fill_color=Spectral6)

p.xgrid.grid_line_color = None
p.y_range.start = 0
p.yaxis.axis_label = "Número de Aplicantes"
p.xaxis.axis_label = "Años de Experiencia"

show(p)
```