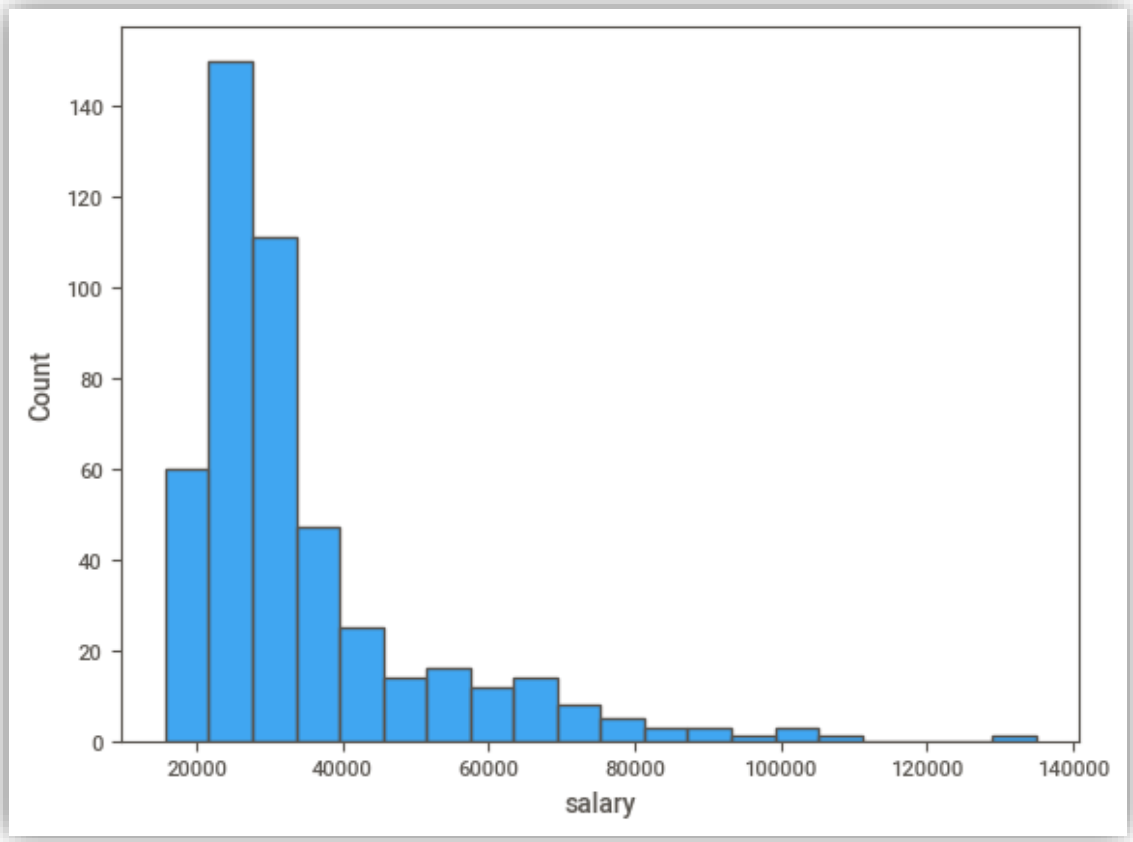
Data Visualization with Python using AI

```
import pandas as pd
import sweetviz as sv
import matplotlib.pyplot as plt

employee = pd.read_csv(r"C:\Users\Lokesh Patra\Documents\Data Science\Employee data.csv")
```

1) Generate a histogram using any library to visualize the distribution of salaries among employees in the dataset.

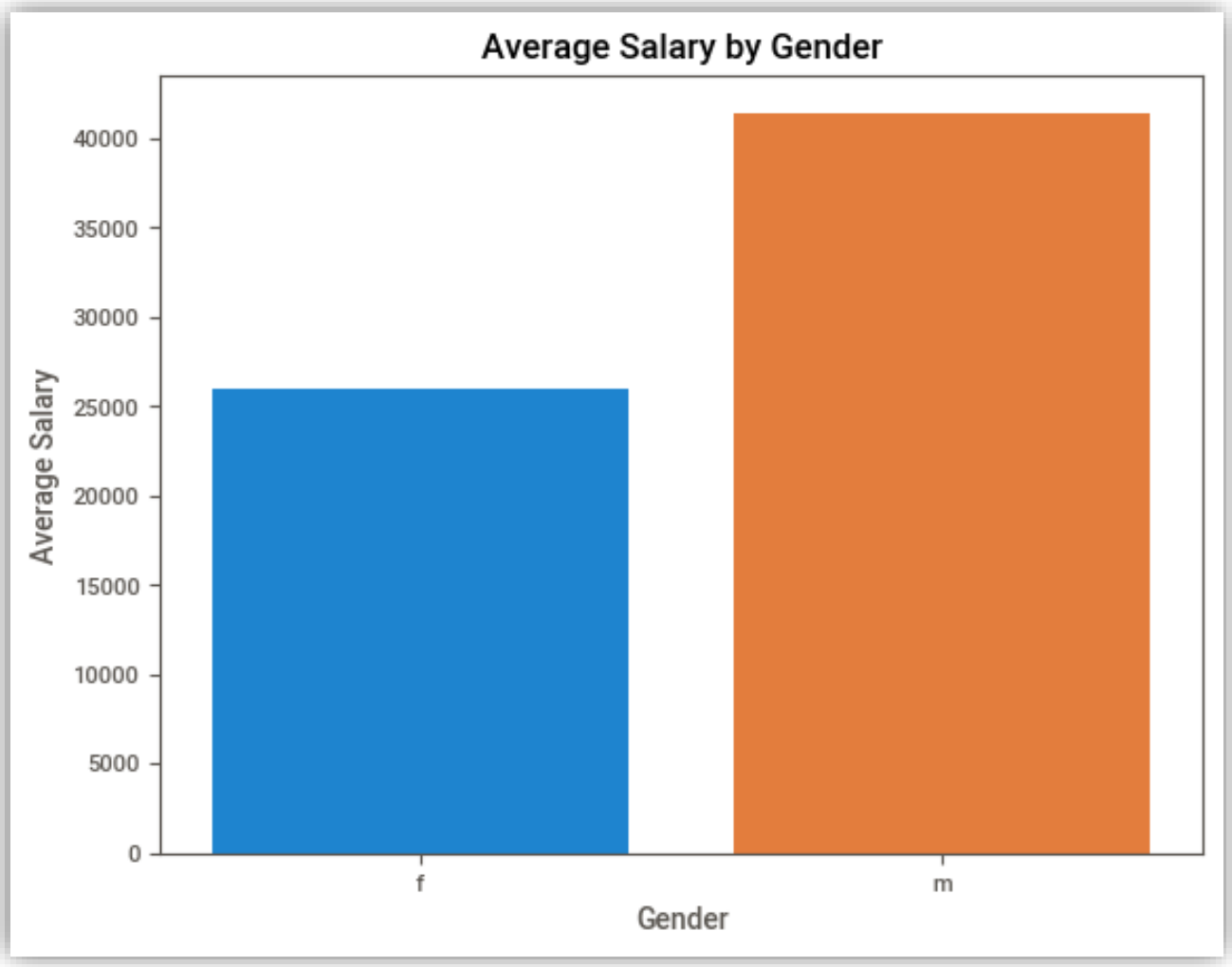
```
sns.histplot(data = employee, x = 'salary', bins = 20)

plt.show()
```



***The **histogram** of salaries shows the distribution of **income among employees**, which can be useful for **understanding wage disparities** and informing **compensation policies**.*

2) Generate a bar plot to compare the average salary of male and female employees using any library.

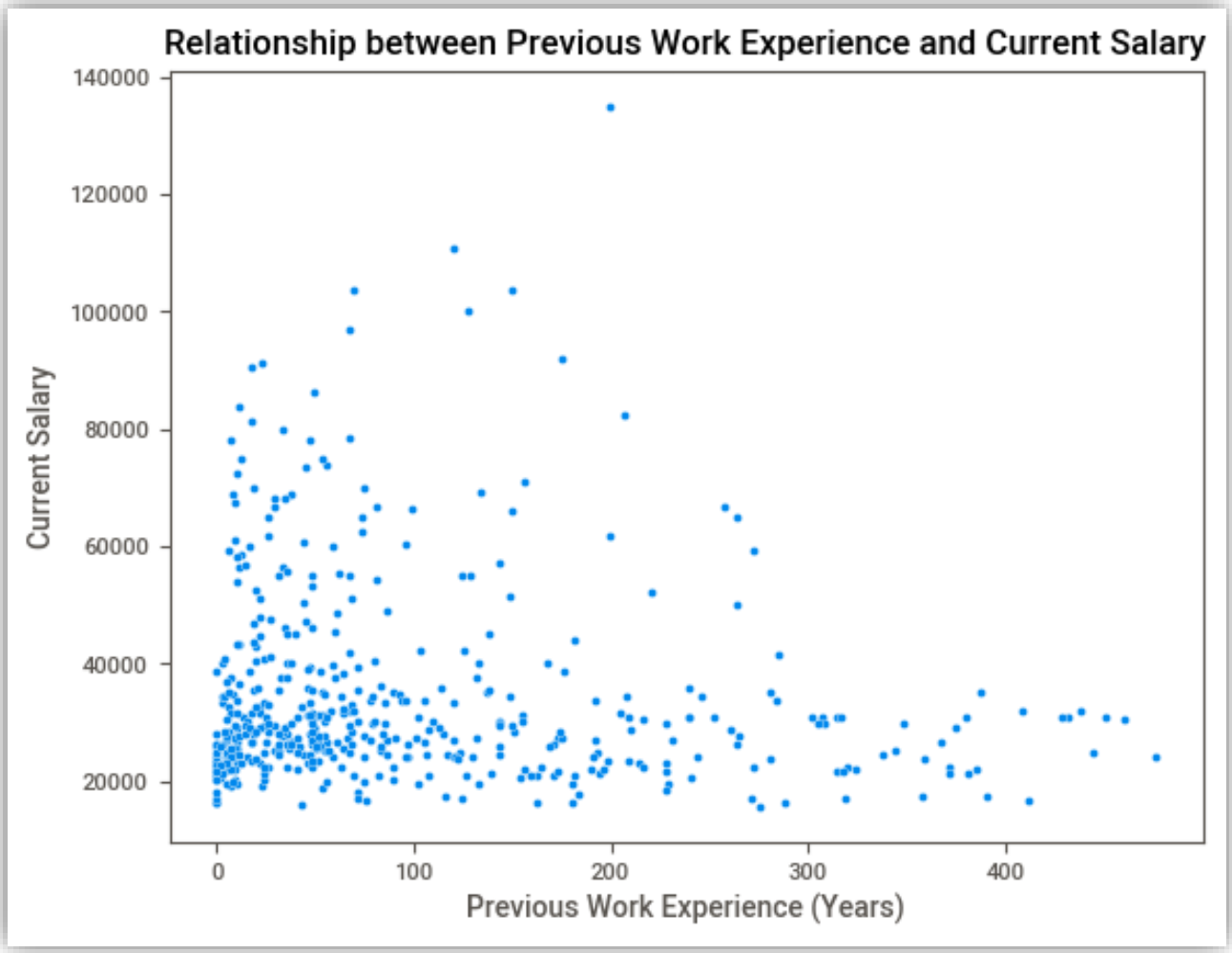
```
average_salaries = employee.groupby('gender')['salary'].mean()

sns.barplot(x = average_salaries.index, y = average_salaries.values)

plt.xlabel('Gender')
plt.ylabel('Average Salary')
plt.title('Average Salary by Gender')

plt.show()
```



***The **bar plot** comparing the **average salaries of male and female employees** highlights any **potential gender wage gaps**, a critical metric for **ensuring equity** in the workplace.*

3) Create a scatter plot using any library to illustrate the relationship between previous work experience (prevexp) and the current salary of employees.

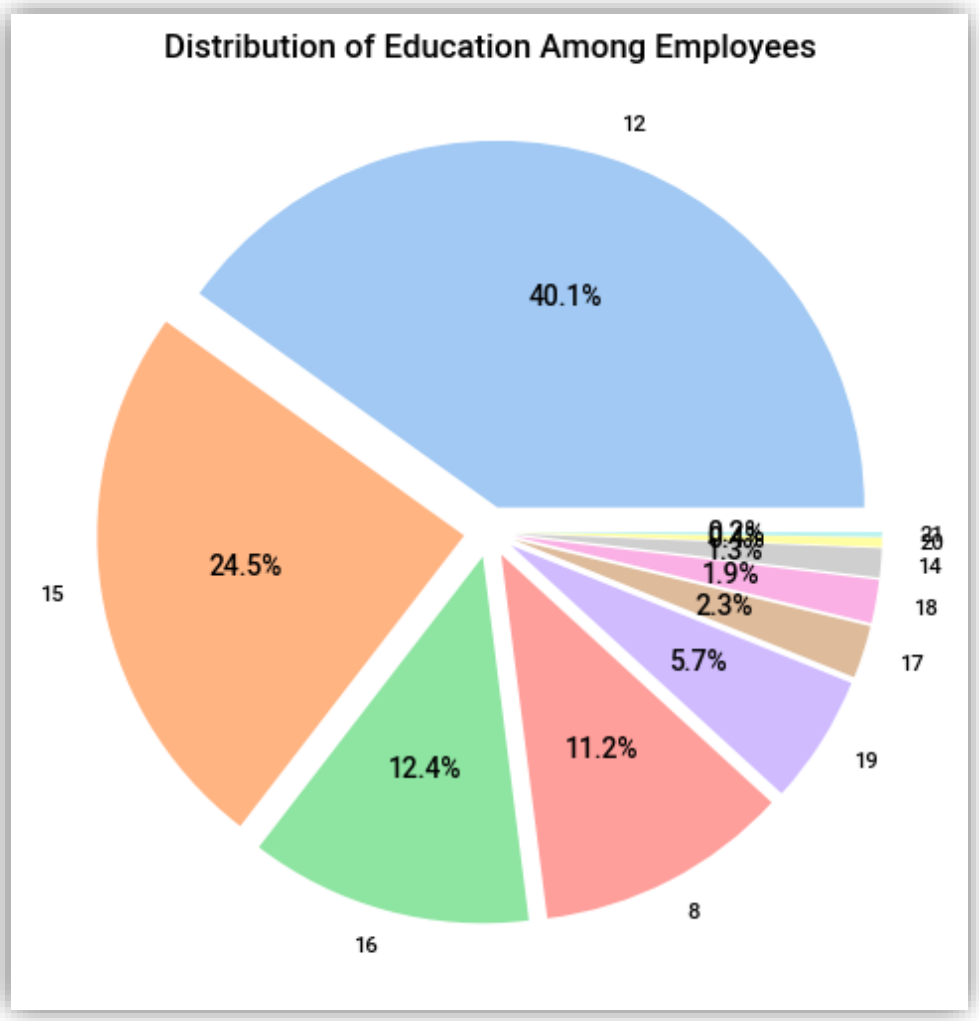
```
sns.scatterplot(data = employee, x = 'prevexp', y = 'salary')


plt.xlabel('Previous Work Experience (Years)')
plt.ylabel('Current Salary')
plt.title('Relationship between Previous Work Experience and Current Salary')


plt.show()
```



***The **scatter plot** illustrating the **relationship between previous work experience and current salary** can help understand **how experience influences pay**, which is crucial for **career planning** and **talent management**.*

4) Generate a pie chart to visualize the distribution of educational backgrounds among employees.

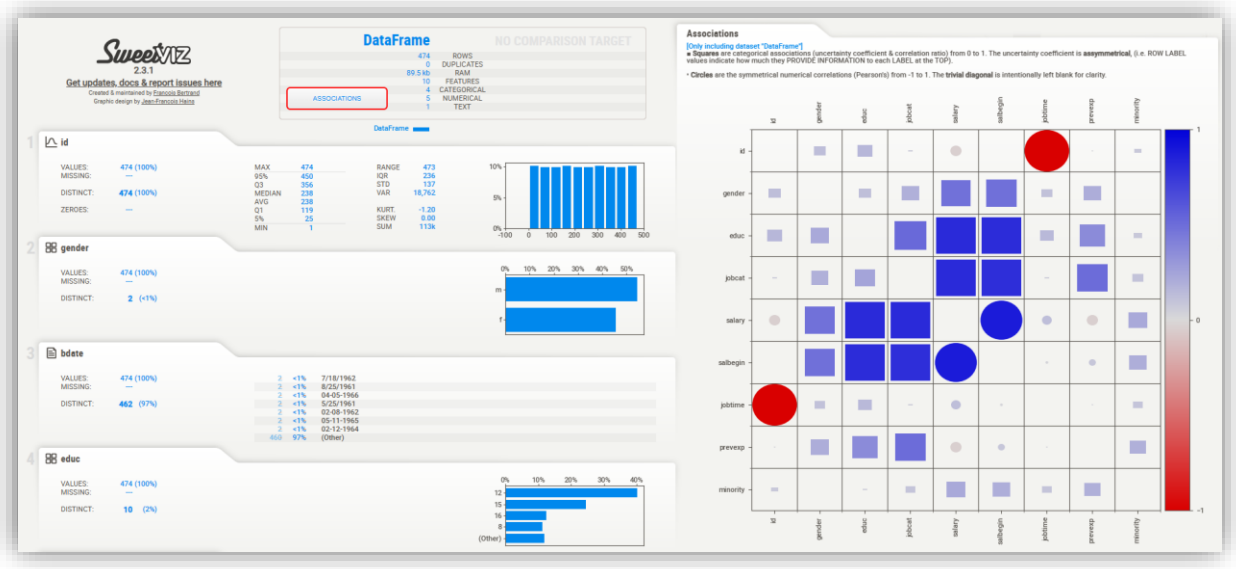
```
education_counts = employee['educ'].value_counts()
explode = [0.07] * len(education_counts)
colors = sns.color_palette('pastel')[0:len(education_counts)]
plt.figure(figsize = (10, 6))
plt.pie(education_counts, labels = education_counts.index, autopct = '%1.1f%%', colors = colors, explode = explode)
plt.title('Distribution of Education Among Employees')
plt.show()
```



***The **pie chart** visualizing the **distribution of educational backgrounds** among employees shows the **diversity of education** in the workforce, which can be **beneficial** for fostering **innovation** and **creativity**.*

5) Use any AI library such as sweetviz or dtale to generate the summary of the data.

employee.html



Conclusion:

In conclusion, the data visualization of the employee dataset provides valuable insights into the workforce.

Using AI libraries like Sweetviz to generate a summary of the data helps in understanding the overall characteristics of the dataset, making it easier to identify trends, outliers, and patterns.

These visualizations collectively aid in making informed decisions and strategies for effective human resource management.

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