Experiment No.-3

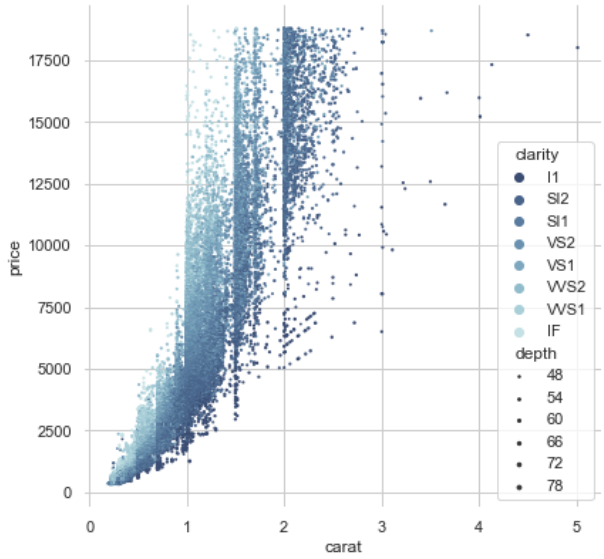
Object: Use standard datasets and draw Scatter plot, line chart, bar chart, histogram, heatmap using different thon libraries

In [2]:

```
import seaborn as sns
import matplotlib.pyplot as plt
#sns.set_theme(style="whitegrid")

# Load the example diamonds dataset
diamonds = sns.load_dataset("diamonds")

# Draw a scatter plot while assigning point colors and sizes to different
# variables in the dataset
f, ax = plt.subplots(figsize=(6.5, 6.5))
sns.despine(f, left=True, bottom=True)
clarity_ranking = ["I1", "SI2", "SI1", "VS2", "VS1", "VVS2", "VVS1", "IF"]
sns.scatterplot(x="carat", y="price",
                hue="clarity", size="depth",
                palette="ch:r=-.2,d=.3_r",
                hue_order=clarity_ranking,
                sizes=(1, 8), linewidth=0,
                data=diamonds, ax=ax)
```

Out[2]:

```
<AxesSubplot:xlabel='carat', ylabel='price'>
```

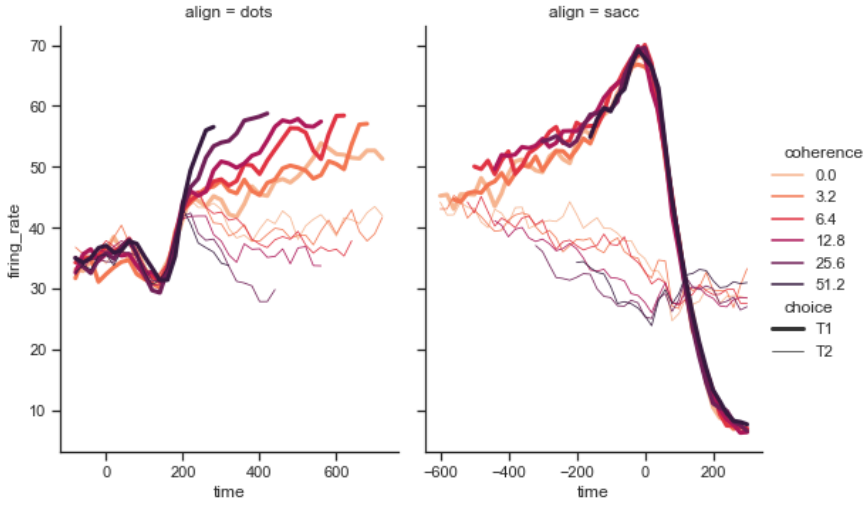


In [3]:

```
import seaborn as sns
sns.set_theme(style="ticks")

dots = sns.load_dataset("dots")

# Define the palette as a list to specify exact values
palette = sns.color_palette("rocket_r")

# Plot the lines on two facets
sns.relplot(
    data=dots,
    x="time", y="firing_rate",
    hue="coherence", size="choice", col="align",
    kind="line", size_order=["T1", "T2"], palette=palette,
    height=5, aspect=.75, facet_kws=dict(sharex=False),
)
```

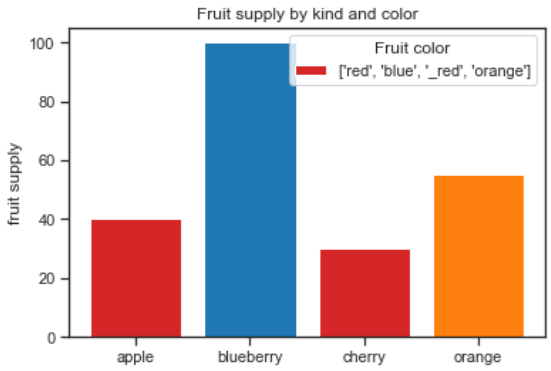
Out[3]:

```
<seaborn.axisgrid.FacetGrid at 0x199f26e1a30>
```



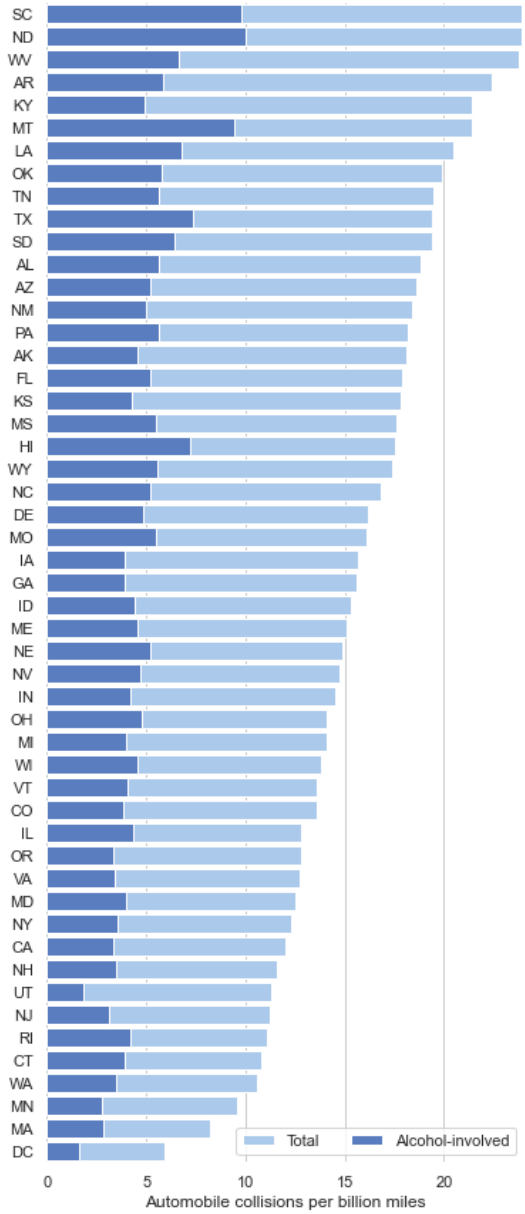
In [4]:

```
import matplotlib.pyplot as plt

fig, ax = plt.subplots()

fruits = ['apple', 'blueberry', 'cherry', 'orange']
counts = [40, 100, 30, 55]
bar_labels = ['red', 'blue', '_red', 'orange']
bar_colors = ['tab:red', 'tab:blue', 'tab:red', 'tab:orange']

ax.bar(fruits, counts, label=bar_labels, color=bar_colors)

ax.set_ylabel('fruit supply')
ax.set_title('Fruit supply by kind and color')
ax.legend(title='Fruit color')

plt.show()
```



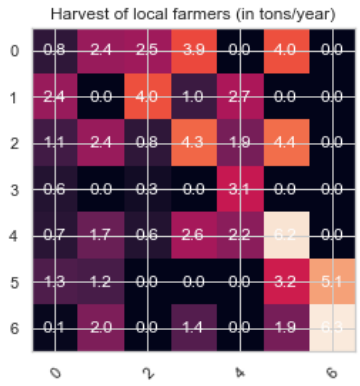
In [5]:

```
import seaborn as sns
import matplotlib.pyplot as plt
sns.set_theme(style="whitegrid")

# Initialize the matplotlib figure
f, ax = plt.subplots(figsize=(6, 15))

# Load the example car crash dataset
crashes = sns.load_dataset("car_crashes").sort_values("total", ascending=False)

# Plot the total crashes
sns.set_color_codes("pastel")
sns.barplot(x="total", y="abbrev", data=crashes,
            label="Total", color="b")

# Plot the crashes where alcohol was involved
sns.set_color_codes("muted")
sns.barplot(x="alcohol", y="abbrev", data=crashes,
            label="Alcohol-involved", color="b")

# Add a legend and informative axis label
ax.legend(ncol=2, loc="lower right", frameon=True)
ax.set(xlim=(0, 24), ylabel="",
       xlabel="Automobile collisions per billion miles")
sns.despine(left=True, bottom=True)
```



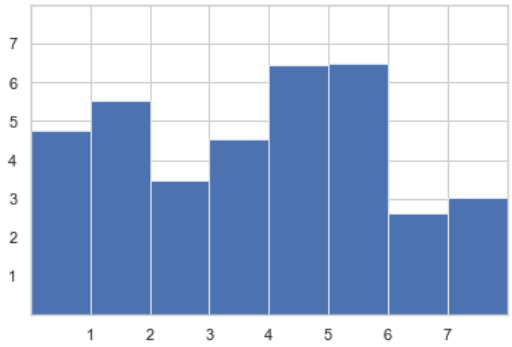
In [9]:

```
import numpy as np
import matplotlib
import matplotlib as mpl
import matplotlib.pyplot as plt

vegetables = ["cucumber", "tomato", "lettuce", "asparagus",
              "potato", "wheat", "barley"]
farmers = ["Farmer Joe", "Upland Bros.", "Smith Gardening",
           "Agrifun", "Organiculture", "BioGoods Ltd.", "Cornylee Corp."]

harvest = np.array([[0.8, 2.4, 2.5, 3.9, 0.0, 4.0, 0.0],
                    [2.4, 0.0, 4.0, 1.0, 2.7, 0.0, 0.0],
                    [1.1, 2.4, 0.8, 4.3, 1.9, 4.4, 0.0],
                    [0.6, 0.0, 0.3, 0.0, 3.1, 0.0, 0.0],
                    [0.7, 1.7, 0.6, 2.6, 2.2, 6.2, 0.0],
                    [1.3, 1.2, 0.0, 0.0, 0.0, 3.2, 5.1],
                    [0.1, 2.0, 0.0, 1.4, 0.0, 1.9, 6.3]])


fig, ax = plt.subplots()
im = ax.imshow(harvest)

# Show all ticks and label them with the respective list entries
# ax.set_xticks(np.arange(len(farmers)), labels=farmers)
# ax.set_yticks(np.arange(len(vegetables)), labels=vegetables)

# Rotate the tick labels and set their alignment.
plt.setp(ax.get_xticklabels(), rotation=45, ha="right",
         rotation_mode="anchor")

# Loop over data dimensions and create text annotations.
for i in range(len(vegetables)):
    for j in range(len(farmers)):
        text = ax.text(j, i, harvest[i, j],
                       ha="center", va="center", color="w")

ax.set_title("Harvest of local farmers (in tons/year)")
fig.tight_layout()
plt.show()
```



In [10]:

```
import matplotlib.pyplot as plt
import numpy as np
#plt.style.use('_mpl-gallery')

# make data:
np.random.seed(3)
x = 0.5 + np.arange(8)
y = np.random.uniform(2, 7, len(x))

# plot
fig, ax = plt.subplots()

ax.bar(x, y, width=1, edgecolor="white", linewidth=0.7)

ax.set(xlim=(0, 8), xticks=np.arange(1, 8),
       ylim=(0, 8), yticks=np.arange(1, 8))

plt.show()
```



In [ ]:

```

```