```
# 데이터 불러오기
import pandas as pd
targetUrl="https://raw.githubusercontent.com/seunghyeok35/-1/main/gmm%20data%20set.csv"
data=pd.read_csv(targetUrl)


import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns


Num=[]
for col in data.columns:
    if (data[col].dtype==int)or (data[col].dtype==float):
        Num.append(col)
print (Num)

     ['age', 'bmi', 'children', 'charges']


for col in Num:
    plt.figure(figsize=(20,8))
    sns.histplot(data[col], color="skyblue")
    plt.show()
    plt.figure(figsize=(20,12))
```
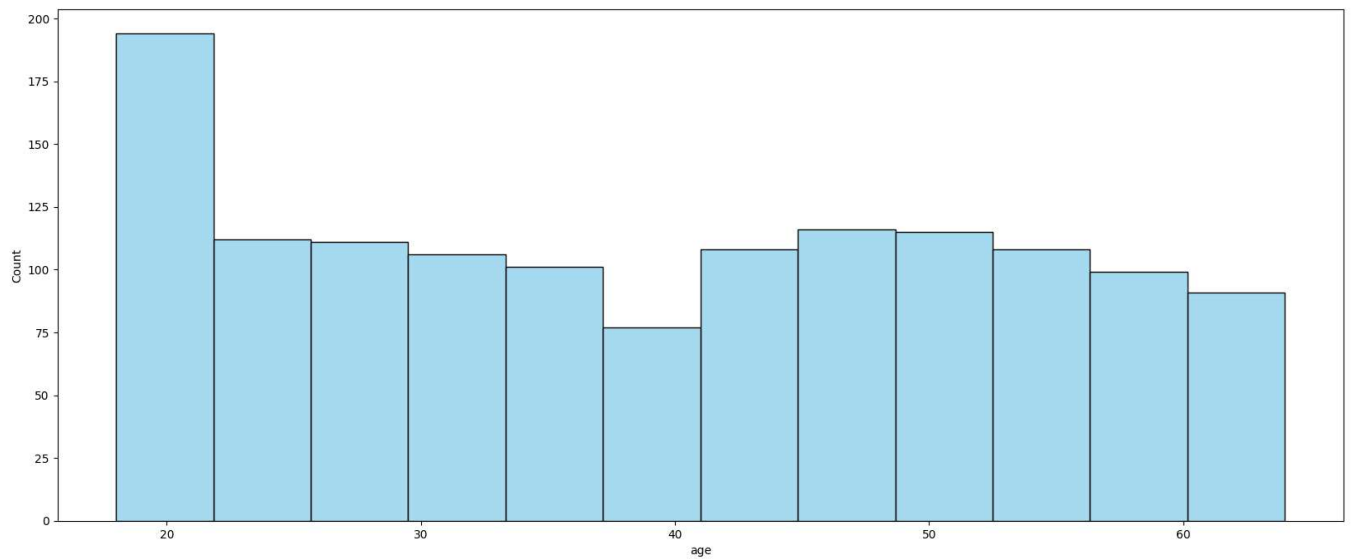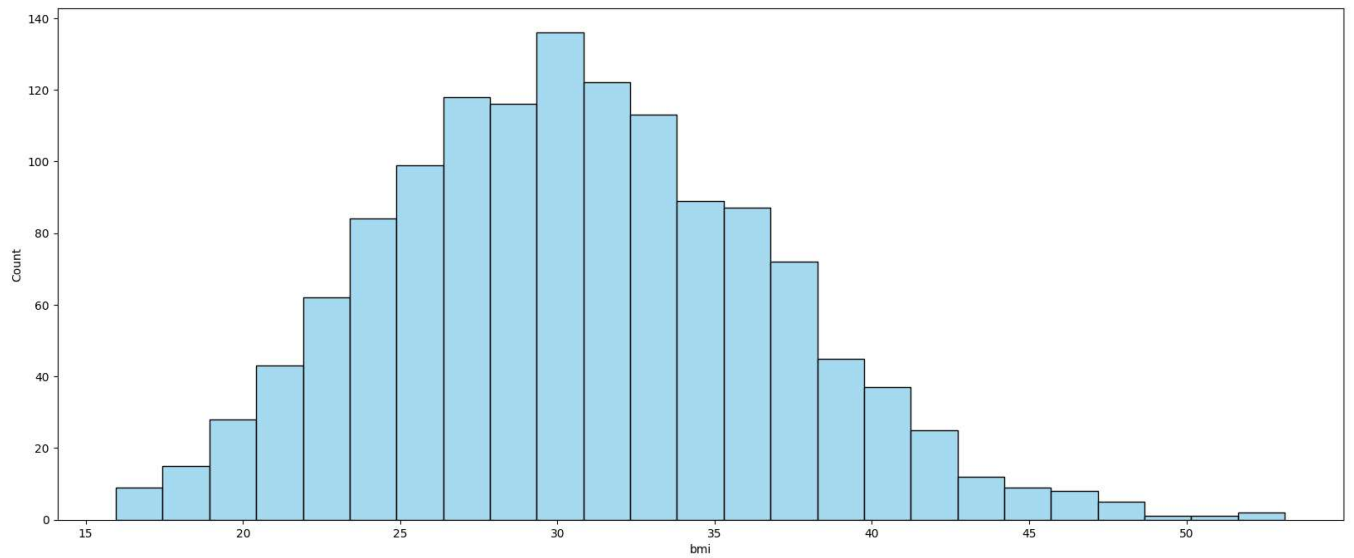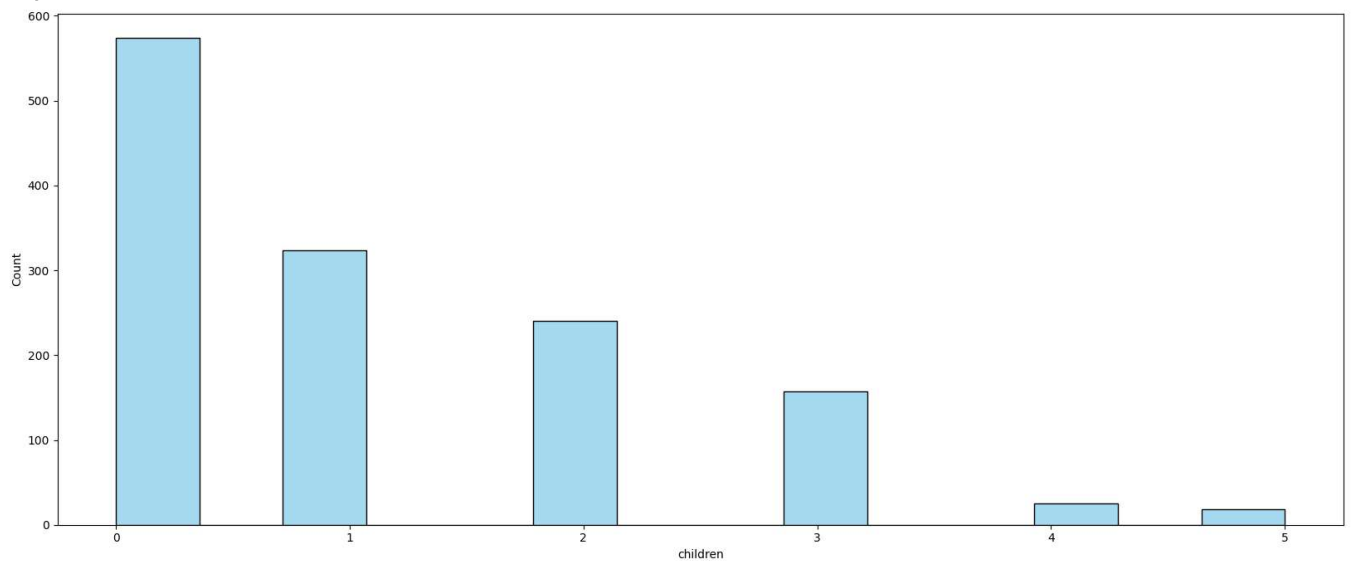⤷

<Figure size 2000x1200 with 0 Axes>

<Figure size 2000x1200 with 0 Axes>

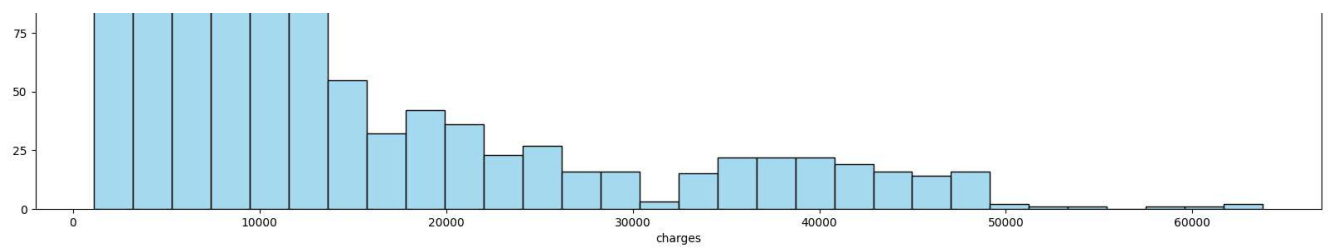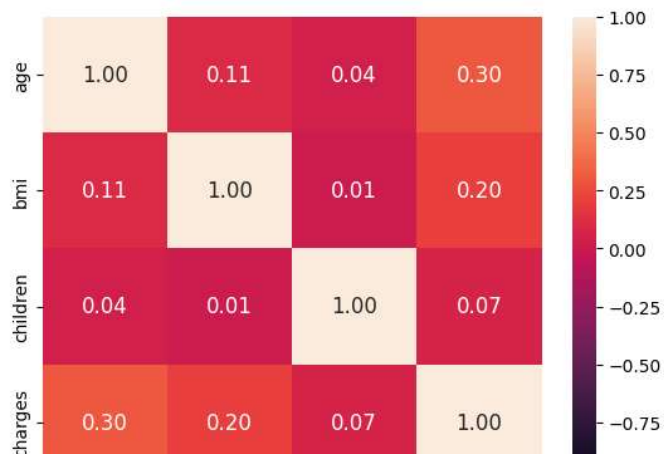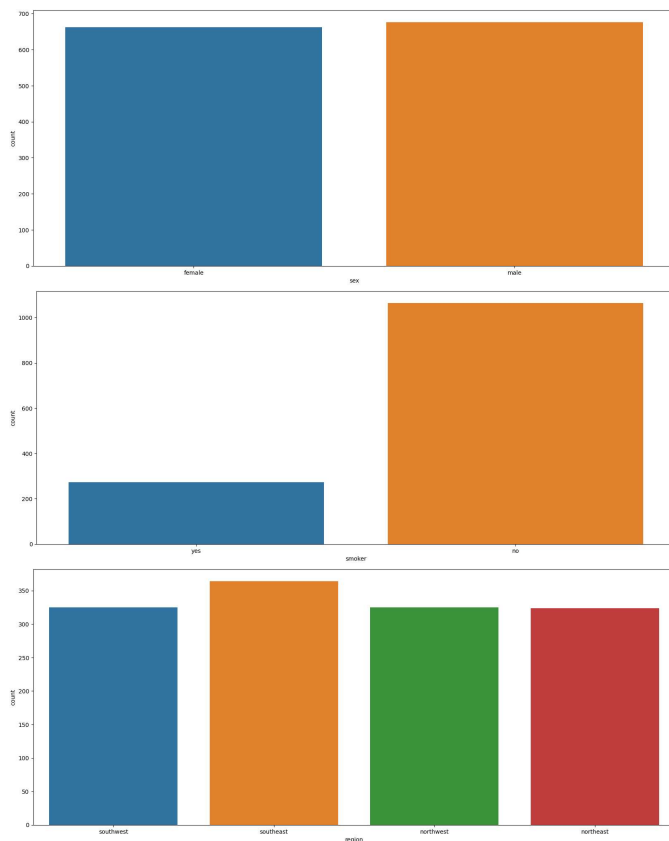

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<Figure size 2000x1200 with 0 Axes>

```
sns.heatmap(data[Num].corr(), annot=True, annot_kws={"fontsize":12}, fmt=".2f", vmin=-1)
plt.show()
```



```
categorical=[]
for col in data.columns:
    if (data[col].dtype==object):
        categorical.append(col)
print (categorical)
```

    ['sex', 'smoker', 'region']

```
for col in categorical:
    plt.figure(figsize=(20,8))
    sns.countplot(x=data[col])
    plt.show()
```

```
from sklearn.mixture import GaussianMixture
gm =GaussianMixture(n_components=3, covariance_type="spherical", random_state=42).fit(data)
labels = gm.predict(data)
plt.figure(figsize=(20,14))
```

```
sns.scatterplot(x=umap_data[:,0], y=umap_data[:,1], hue=labels, palette="pastel")
plt.show()
```

```
---------------------------------------------------------------------
----
ValueError                                Traceback (most recent call
last)
<ipython-input-9-1aeca77fdff2> in <cell line: 2>()
      1 from sklearn.mixture import GaussianMixture
----> 2 gm =GaussianMixture(n_components=3,
covariance_type="spherical", random_state=42).fit(data)
      3 labels = gm.predict(data)
      4 plt.figure(figsize=(20,14))
      5 sns.scatterplot(x=umap_data[:,0], y=umap_data[:,1], hue=labels,
palette="pastel")
```

⇕ 5 frames

```
/usr/local/lib/python3.10/dist-packages/pandas/core/generic.py in
__array__(self, dtype)
   2068
```