PHASE-5
STOCK
PRICE PREDICTION

In [21]:
```
import seaborn as sb
```

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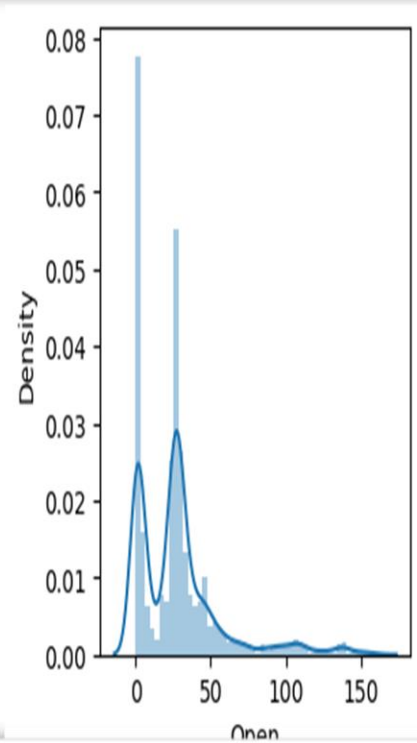
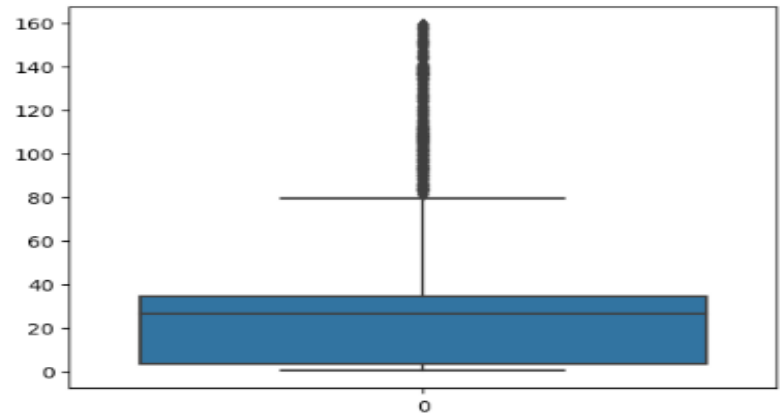
```
import seaborn as sb
```

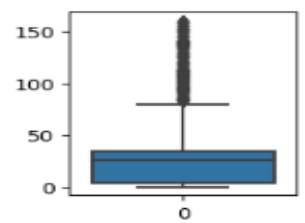
In [31]:
```
features = ['Open', 'High', 'Low', 'Close', 'Volume']
plt.subplots(figsize=(10,8))
for i, col in enumerate(features):
    plt.subplot(2,3,i+1)
    sb.distplot(stock[col])
    plt.show()
```

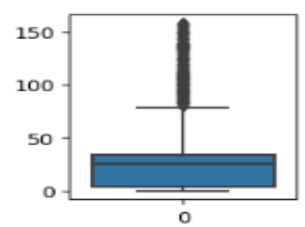


In [24]:
```
plt.subplots(figsize=(20,10))
for i, col in enumerate(features):
    plt.subplot(2,3,i+1)
    sb.boxplot(stock[col])
    plt.show()
```

```
C:\Users\CSE LAB\AppData\Local\Temp\ipykernel_5832\1085974214.py:3: MatplotlibDeprecationWarning: Auto-removal of overlapping a
xes is deprecated since 3.6 and will be removed two minor releases later; explicitly call ax.remove() as needed.
  plt.subplot(2,3,i+1)
```

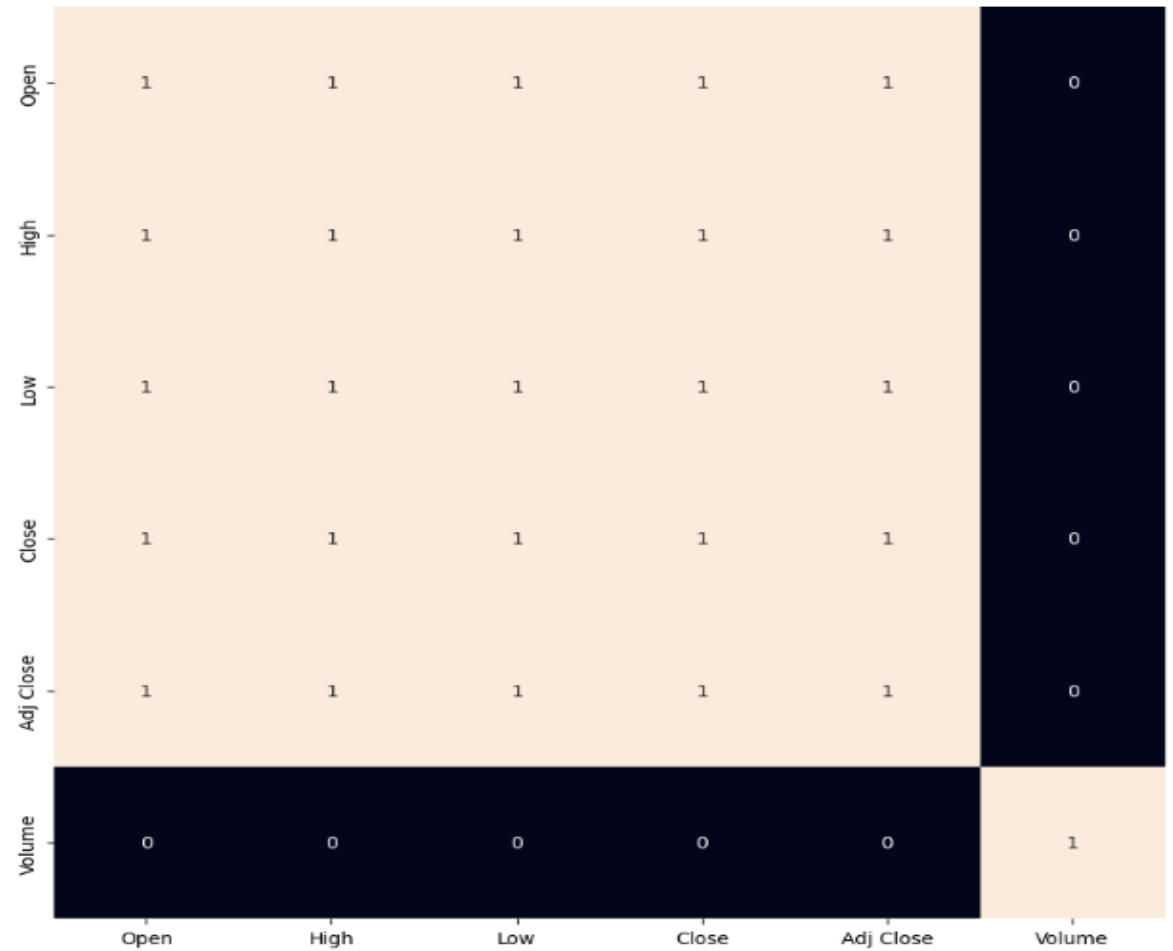






In [26]:
```
plt.figure(figsize=(10, 10))
sb.heatmap(stock.corr() > 0.9, annot=True, cbar=False)
plt.show()
```

```
C:\Users\CSE LAB\AppData\Local\Temp\ipykernel_5832\4185554148.py:2: FutureWarning: The default value of numeric_only in DataFra
me.corr is deprecated. In a future version, it will default to False. Select only valid columns or specify the value of numeric
_only to silence this warning.
  sb.heatmap(stock.corr() > 0.9, annot=True, cbar=False)
```



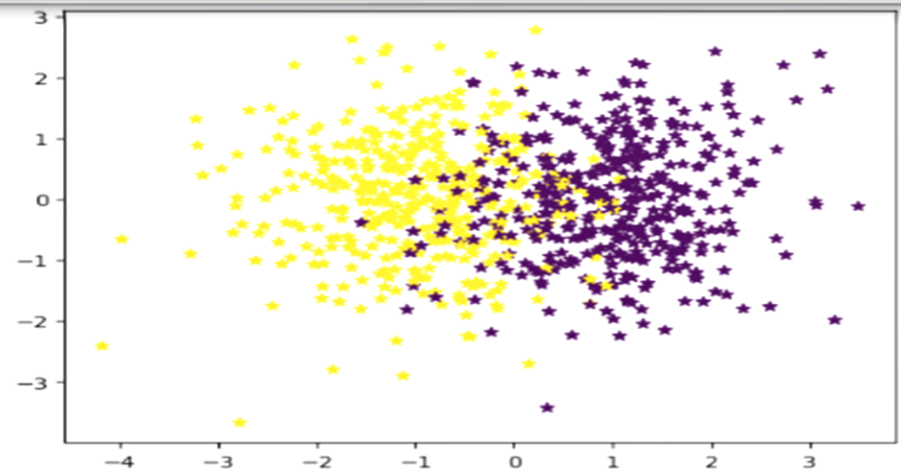
In [28]:

```
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score, classification_report, confusion_matrix
import numpy as np
np.random.seed(0)
data = {
    'Exam1': np.random.rand(100) * 100,
    'Exam2': np.random.rand(100) * 100,
    'Admitted': np.random.randint(2, size=100)
}
df = pd.DataFrame(data)
print(df)
X = df[['Exam1', 'Exam2']]
y = df['Admitted']
print(X)
print(y)
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
model = LogisticRegression()
model.fit(X_train, y_train)
y_pred = model.predict(X_test)
print("------------------")
print(y_pred)
accuracy = accuracy_score(y_test, y_pred)
print(f'Accuracy: {accuracy:.2f}')
print(classification_report(y_test, y_pred))
print(confusion_matrix(y_test, y_pred))
```

```
        Exam1      Exam2  Admitted
0   54.881350  67.781654         0
1   71.518937  27.000797         1
2   60.276338  73.519402         0
3   54.488318  96.218855         0
4   42.365480  24.875314         1
..        ...        ...       ...
95  18.319136  49.045881         0
96  58.651293  22.741463         1
97   2.010755  25.435648         0
98  82.894003   5.802916         1
99   0.469548  43.441663         0

[100 rows x 3 columns]
        Exam1      Exam2
0   54.881350  67.781654
1   71.518937  27.000797
2   60.276338  73.519402
3   54.488318  96.218855
4   42.365480  24.875314
..        ...        ...
95  18.319136  49.045881
96  58.651293  22.741463
97   2.010755  25.435648
98  82.894003   5.802916
99   0.469548  43.441663

[100 rows x 2 columns]
0     0
1     1
2     0
3     0
4     1
     ..
95    0
96    1
97    0
98    1
99    0
Name: Admitted, Length: 100, dtype: int32
------------------
[1 0 1 0 0 1 0 1 1 0 0 0 1 1 0 1 0 0 0 1]
Accuracy: 0.45
              precision    recall  f1-score   support

           0       0.27      0.50      0.35         6
           1       0.67      0.43      0.52        14

    accuracy                           0.45        20
   macro avg       0.47      0.46      0.44        20
weighted avg       0.55      0.45      0.47        20

[[3 3]
 [8 6]]
```

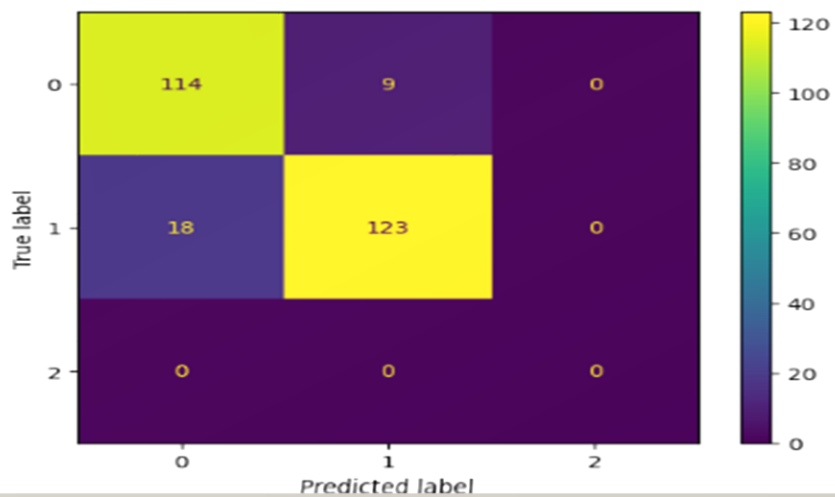
In [29]:

```
from sklearn.datasets import make_classification
value1, y = make_classification(n_features=6,n_classes=2,n_samples=800,n_informative=2,random_state=66,n_clusters_per_class=1)
import matplotlib.pyplot as plt
plt.scatter(value1[:, 0], value1[:, 1], c=y, marker="*")
plt.show()
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(value1, y, test_size=0.33, random_state=125)
from sklearn.naive_bayes import GaussianNB
model = GaussianNB()
model.fit(X_train, y_train)
predicted = model.predict([X_test[6]])
print("Actual Value:", y_test[6])
print("Predicted Value:", predicted[0])
from sklearn.metrics import (accuracy_score,confusion_matrix,ConfusionMatrixDisplay,f1_score,)
y_pred = model.predict(X_test)
accuray = accuracy_score(y_pred, y_test)
f1 = f1_score(y_pred, y_test, average="weighted")
print("Accuracy:", accuray)
print("F1 Score:", f1)
labels = [0,1,2]
cm = confusion_matrix(y_test, y_pred, labels=labels)
print(cm)
disp = ConfusionMatrixDisplay(confusion_matrix=cm, display_labels=labels)
disp.plot()
```



```
Actual Value: 1
Predicted Value: 1
Accuracy: 0.8977272727272727
F1 Score: 0.8976082740788625
[[114   9   0]
 [ 18 123   0]
 [  0   0   0]]
```

Out[29]: <sklearn.metrics._plot.confusion_matrix.ConfusionMatrixDisplay at 0x26d022e7d50>



CONCLUSION

- To preprocess the dataset for stock price prediction, you can consider steps like removing duplicates, handling missing values, scaling the data, and splitting it into training and testing sets.

Team Member

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