In [1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:
```
data=pd.read_excel("WalMartStock.xlsx")
```

In [3]:
```
data.head()
```

Out[3]:

	Date	Close	Difference
0	2001-02-05	53.84	NaN
1	2001-02-06	53.20	-0.64
2	2001-02-07	54.66	1.46
3	2001-02-08	52.30	-2.36
4	2001-02-09	50.40	-1.90

In [4]:
```
data.shape
```

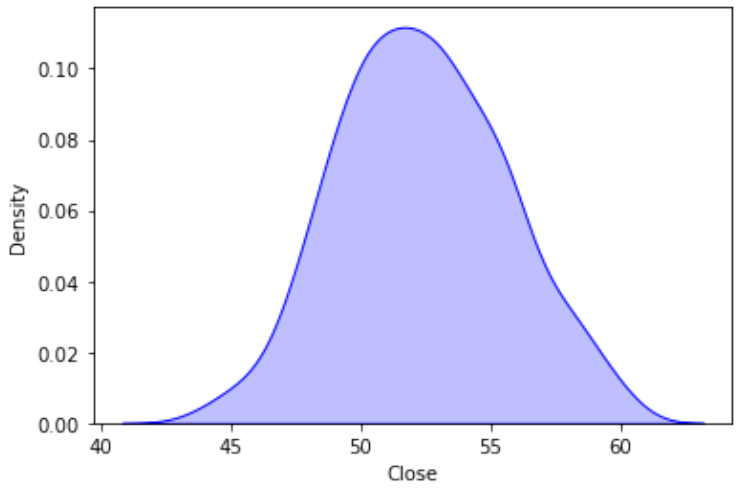
Out[4]:
```
(248, 3)
```

In [5]:
```
data.dtypes
```

Out[5]:
```
Date          datetime64[ns]
Close                float64
Difference           float64
dtype: object
```

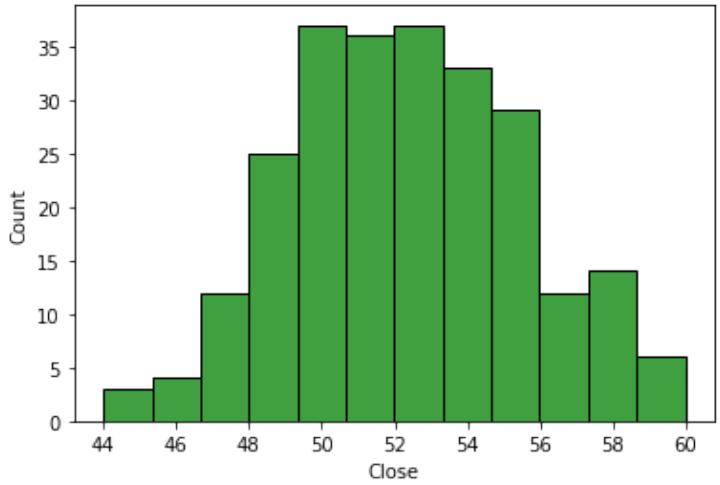
In [6]:
```
sns.kdeplot(data["Close"],color='blue',fill='true')
```

Out[6]:
```
<AxesSubplot:xlabel='Close', ylabel='Density'>
```



In [9]:
```
sns.histplot(data["Close"],color='green',fill='true',edgecolor='black')
```

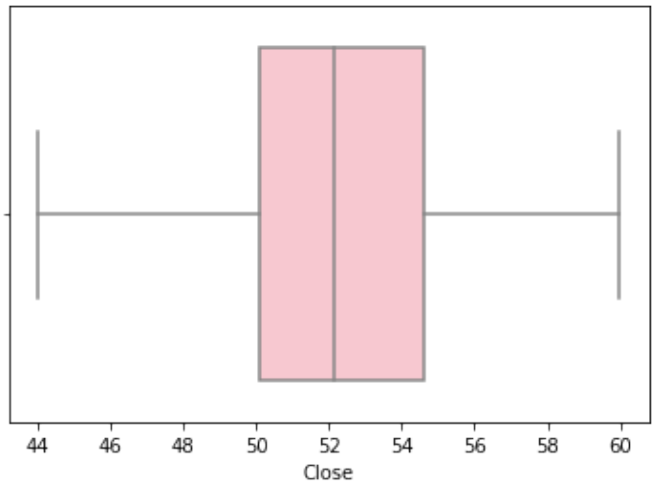
Out[9]:
```
<AxesSubplot:xlabel='Close', ylabel='Count'>
```



In [15]:
```
sns.boxplot(data["Close"],color='pink')
```

```
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarni
ng: Pass the following variable as a keyword arg: x. From version 0.12, the only
valid positional argument will be `data`, and passing other arguments without an
explicit keyword will result in an error or misinterpretation.
  warnings.warn(
```

Out[15]:
```
<AxesSubplot:xlabel='Close'>
```



In [13]:
```
#Observation:" Data does not follow normal distribution and this cleared by boxplo
```

In [14]:
```
#how to make this data normal =sampling
```

In [31]:
```
sample_size=40 #sample size of 20 points
total_samples=10000 #total samples
```

In [32]:
```
sample=np.random.choice(data["Close"],(total_samples,sample_size))
```

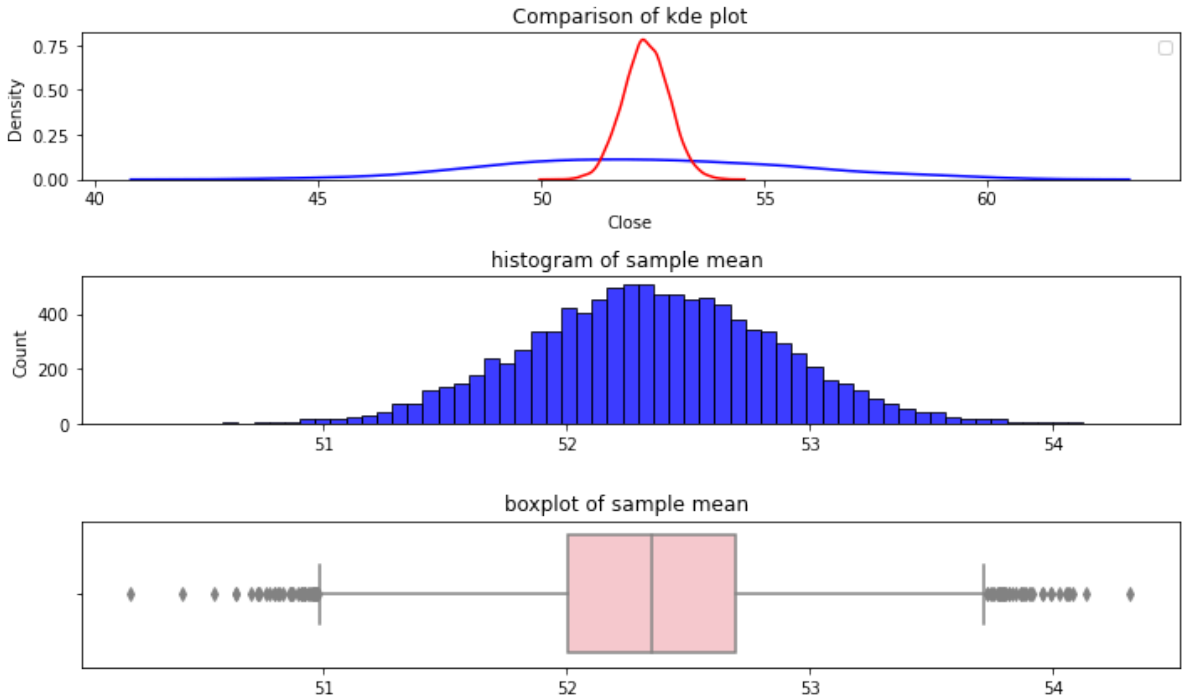
In [33]:
```
sample.shape
```

Out[33]:
```
(10000, 40)
```

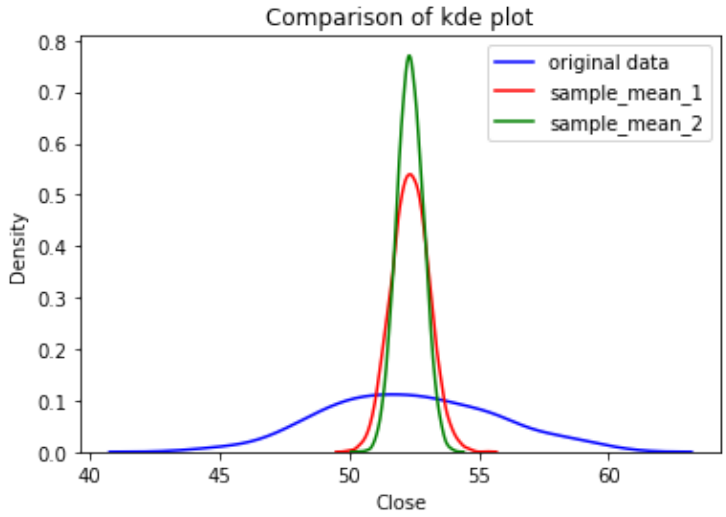
In [34]:
```
sample_mean=np.mean(sample,axis=1)# axis=1 indicates mean along column
```

In [35]:
```
plt.figure(figsize=(10,6))
plt.subplot(3,1,1)# 1st fig means 3 by 1 matrix grid
sns.kdeplot(data["Close"],color='blue')#original data kde plot
sns.kdeplot(sample_mean,color='red')
plt.title("Comparison of kde plot")
plt.legend()

plt.subplot(3,1,2) # in 3 by 1 matrix grid
sns.histplot(sample_mean,color='blue',edgecolor='black')
plt.title("histogram of sample mean ")

plt.subplot(3,1,3)
sns.boxplot(sample_mean,color='pink')
plt.title("boxplot of sample mean ")
plt.tight_layout()
plt.show()
```

```
No artists with labels found to put in legend.  Note that artists whose label sta
rt with an underscore are ignored when legend() is called with no argument.
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarni
ng: Pass the following variable as a keyword arg: x. From version 0.12, the only
valid positional argument will be `data`, and passing other arguments without an
explicit keyword will result in an error or misinterpretation.
  warnings.warn(
```



In [40]:
```
sample_1=np.random.choice(data["Close"],(10000,20))  # total samples 10000 and sam
sample_2=np.random.choice(data["Close"],(10000,40)) # total samples 10000 and samp
mean_1=np.mean(sample_1,axis=1)
mean_2=np.mean(sample_2,axis=1)
sns.kdeplot(data["Close"],color='blue',label="original data")#original data kde pl
sns.kdeplot(mean_1,color='red',label="sample_mean_1")
sns.kdeplot(mean_2,color='green',label="sample_mean_2")
plt.title("Comparison of kde plot")
plt.legend()
plt.show()
```



In [ ]: