Importing libraries and Loading Data set

In [15]:
```
# Load the diabetes dataset
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn import svm,metrics,model_selection

path = './diabetes.csv'

data = pd.read_csv(path)
print(data.shape)
data
```

```
(768, 9)
```

Out[15]:

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
0	6	148	72	35	0	33.6	0.627	50	1
1	1	85	66	29	0	26.6	0.351	31	0
2	8	183	64	0	0	23.3	0.672	32	1
3	1	89	66	23	94	28.1	0.167	21	0
4	0	137	40	35	168	43.1	2.288	33	1
...	...	...	...	...	...	...	...	...	...
763	10	101	76	48	180	32.9	0.171	63	0
764	2	122	70	27	0	36.8	0.340	27	0
765	5	121	72	23	112	26.2	0.245	30	0
766	1	126	60	0	0	30.1	0.349	47	1
767	1	93	70	31	0	30.4	0.315	23	0

768 rows × 9 columns

Data Preprocessing

In [4]:
```
data.head()
```

Out[4]:

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
0	6	148	72	35	0	33.6	0.627	50	1
1	1	85	66	29	0	26.6	0.351	31	0
2	8	183	64	0	0	23.3	0.672	32	1
3	1	89	66	23	94	28.1	0.167	21	0
4	0	137	40	35	168	43.1	2.288	33	1

In [2]:
```
data.tail()
```

Out[2]:

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
763	10	101	76	48	180	32.9	0.171	63	0
764	2	122	70	27	0	36.8	0.340	27	0
765	5	121	72	23	112	26.2	0.245	30	0
766	1	126	60	0	0	30.1	0.349	47	1
767	1	93	70	31	0	30.4	0.315	23	0

In [7]:
```
data.dtypes
```

Out[7]:
```
Pregnancies                 int64
Glucose                     int64
BloodPressure               int64
SkinThickness               int64
Insulin                     int64
BMI                       float64
DiabetesPedigreeFunction  float64
Age                         int64
Outcome                     int64
dtype: object
```

In [19]:
```
data.columns
```

Out[19]:
```
Index(['Pregnancies', 'Glucose', 'BloodPressure', 'SkinThickness', 'Insulin',
       'BMI', 'DiabetesPedigreeFunction', 'Age', 'Outcome'],
      dtype='object')
```

In [10]:
```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 768 entries, 0 to 767
Data columns (total 9 columns):
 #   Column                    Non-Null Count  Dtype  
---  ------                    --------------  -----  
 0   Pregnancies               768 non-null    int64  
 1   Glucose                   768 non-null    int64  
 2   BloodPressure             768 non-null    int64  
 3   SkinThickness             768 non-null    int64  
 4   Insulin                   768 non-null    int64  
 5   BMI                       768 non-null    float64
 6   DiabetesPedigreeFunction  768 non-null    float64
 7   Age                       768 non-null    int64  
 8   Outcome                   768 non-null    int64  
dtypes: float64(2), int64(7)
memory usage: 54.1 KB
```

In [18]:
```
data.describe()
```

Out[18]:

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
count	768.000000	768.000000	768.000000	768.000000	768.000000	768.000000	768.000000	768.000000	768.000000
mean	3.845052	120.894531	69.105469	20.536458	79.799479	31.992578	0.471876	33.240885	0.348958
std	3.369578	31.972618	19.355807	15.952218	115.244002	7.884160	0.331329	11.760232	0.476951
min	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.078000	21.000000	0.000000
25%	1.000000	99.000000	62.000000	0.000000	0.000000	27.300000	0.243750	24.000000	0.000000
50%	3.000000	117.000000	72.000000	23.000000	30.500000	32.000000	0.372500	29.000000	0.000000
75%	6.000000	140.250000	80.000000	32.000000	127.250000	36.600000	0.626250	41.000000	1.000000
max	17.000000	199.000000	122.000000	99.000000	846.000000	67.100000	2.420000	81.000000	1.000000

checking for missing value

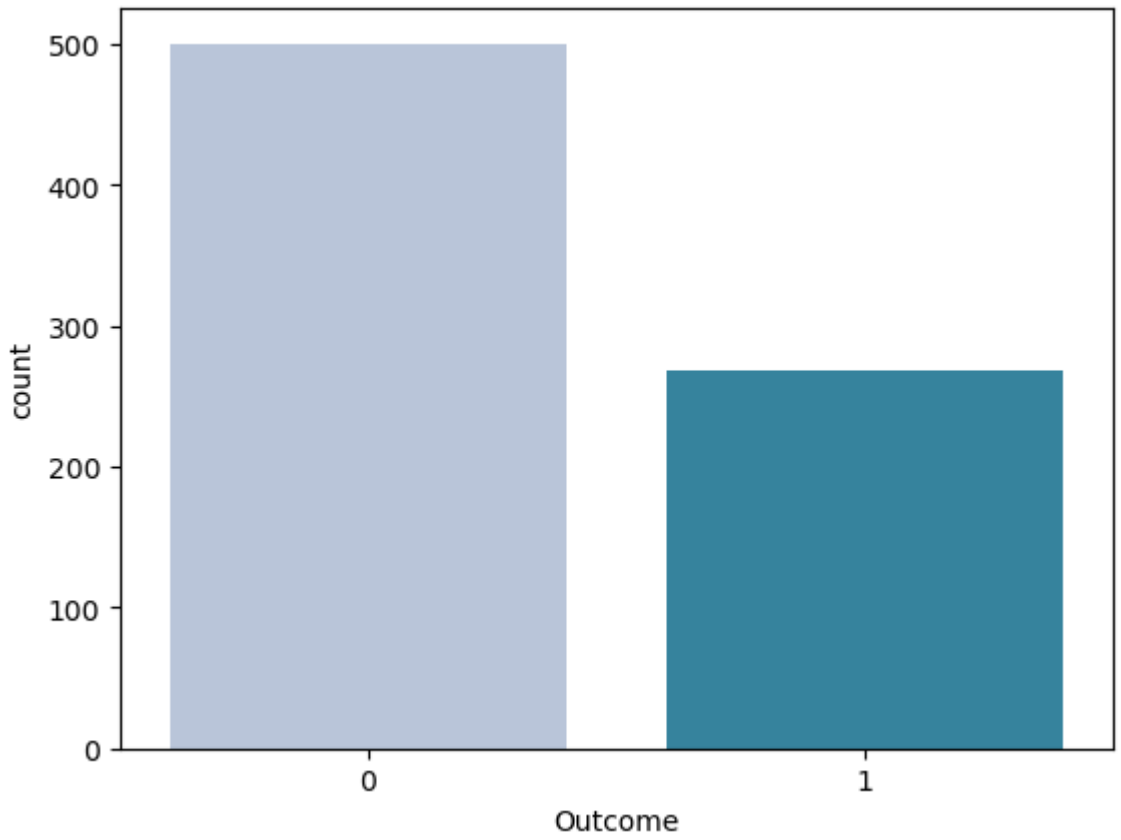
In [13]:
```
data.isnull().sum()
```

Out[13]:
```
Pregnancies                 0
Glucose                     0
BloodPressure               0
SkinThickness               0
Insulin                     0
BMI                         0
DiabetesPedigreeFunction    0
Age                         0
Outcome                     0
dtype: int64
```

Data visualization

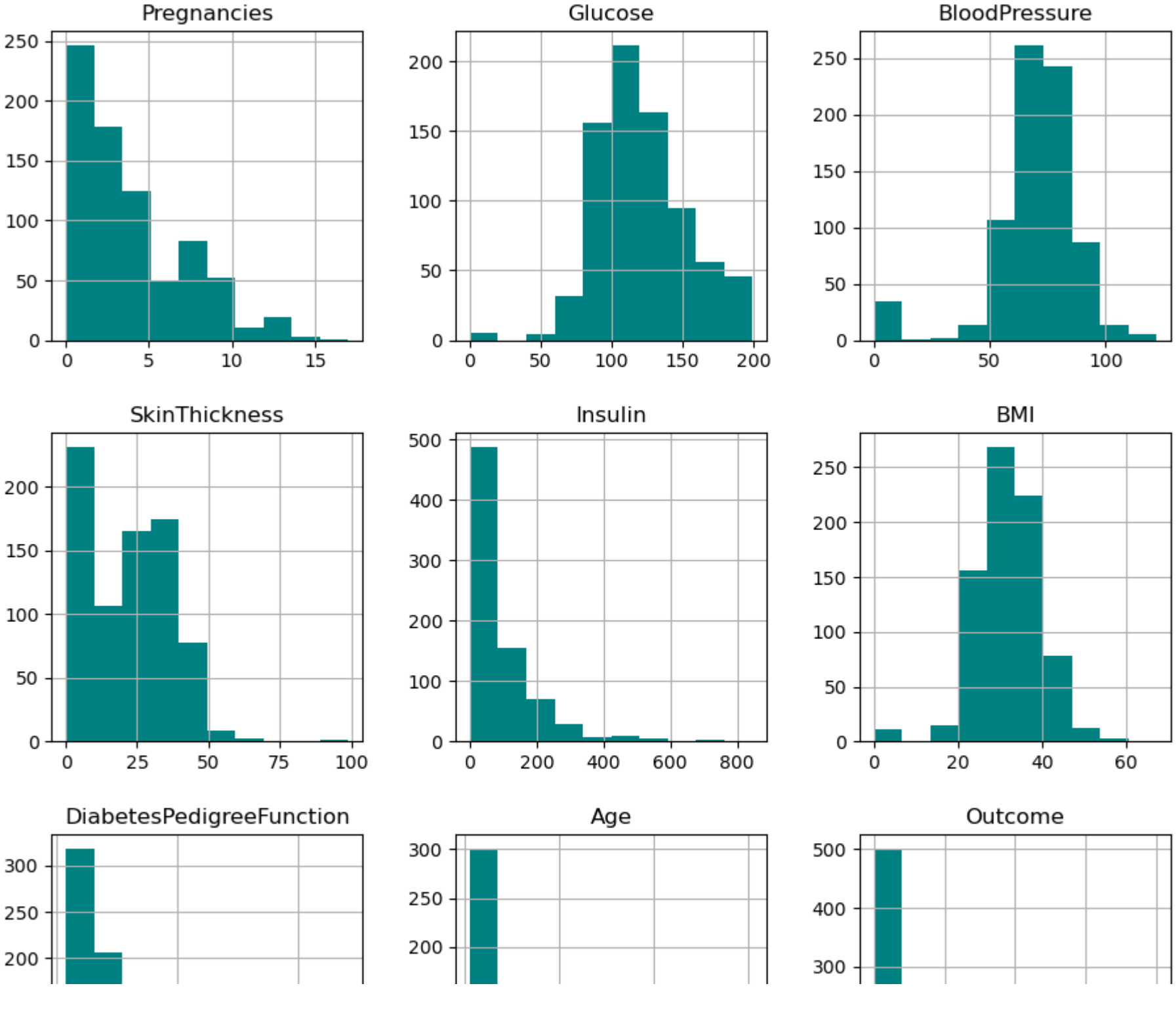
In [16]:
```
sns.countplot(data=data,x="Outcome",palette='PuBuGn')
```

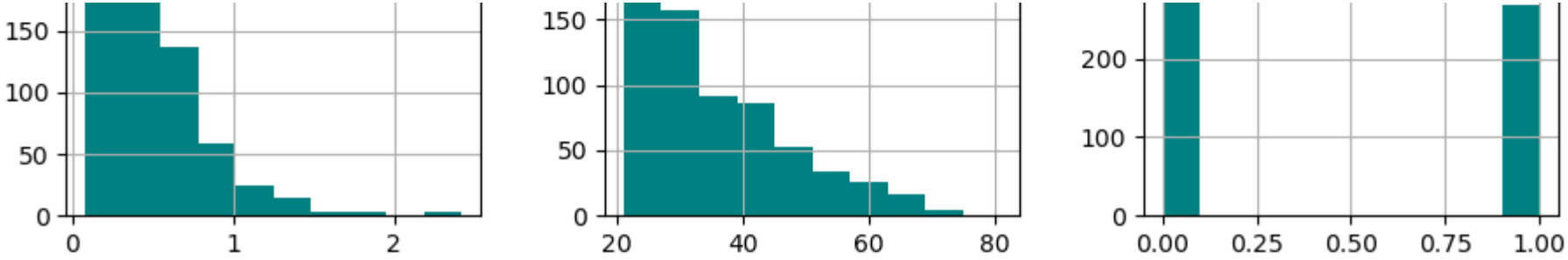
Out[16]:
```
<AxesSubplot:xlabel='Outcome', ylabel='count'>
```



In [17]:
```
data.hist(figsize=(11,11),color='teal')
```

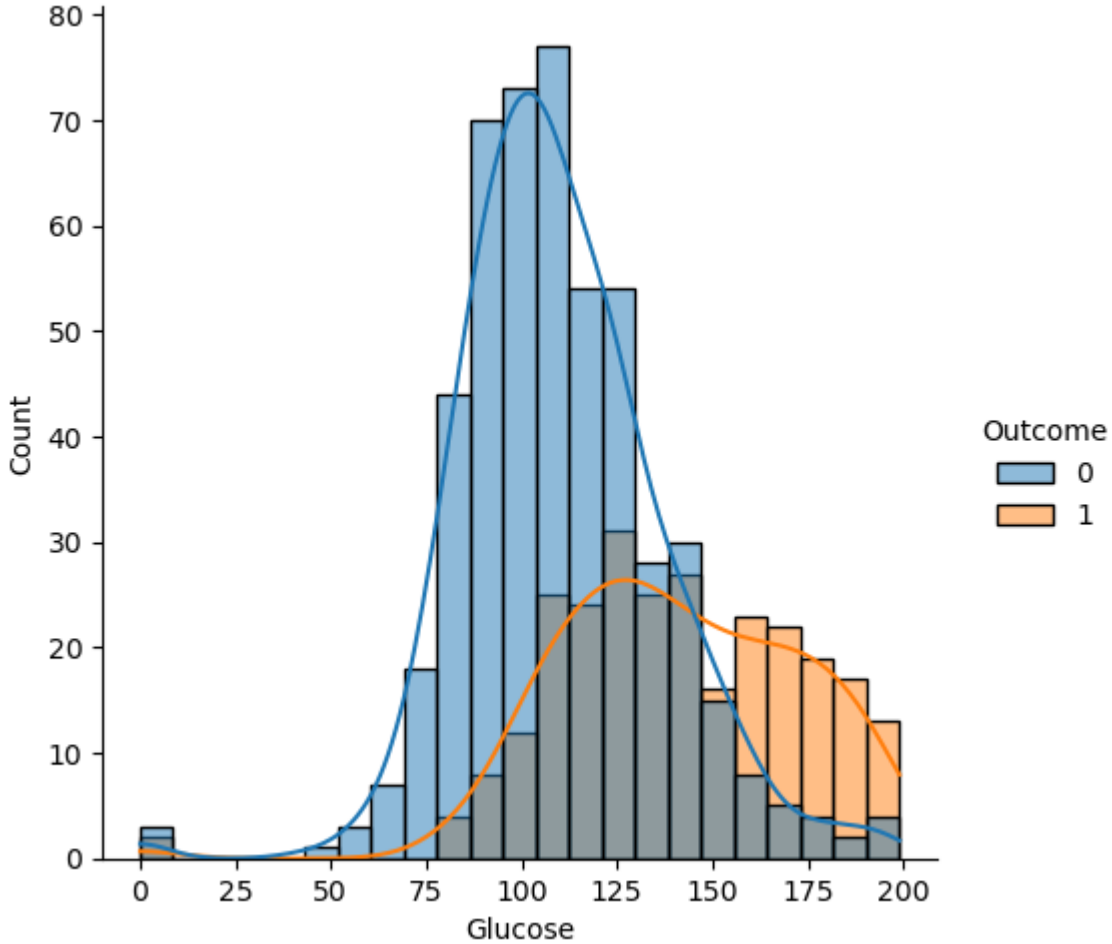
Out[17]:
```
array([[<AxesSubplot:title={'center':'Pregnancies'}>,
        <AxesSubplot:title={'center':'Glucose'}>,
        <AxesSubplot:title={'center':'BloodPressure'}>],
       [<AxesSubplot:title={'center':'SkinThickness'}>,
        <AxesSubplot:title={'center':'Insulin'}>,
        <AxesSubplot:title={'center':'BMI'}>],
       [<AxesSubplot:title={'center':'DiabetesPedigreeFunction'}>,
        <AxesSubplot:title={'center':'Age'}>,
        <AxesSubplot:title={'center':'Outcome'}>]], dtype=object)
```


Pregnancies
Glucose
BloodPressure
SkinThickness
Insulin
BMI
DiabetesPedigreeFunction
Age
Outcome



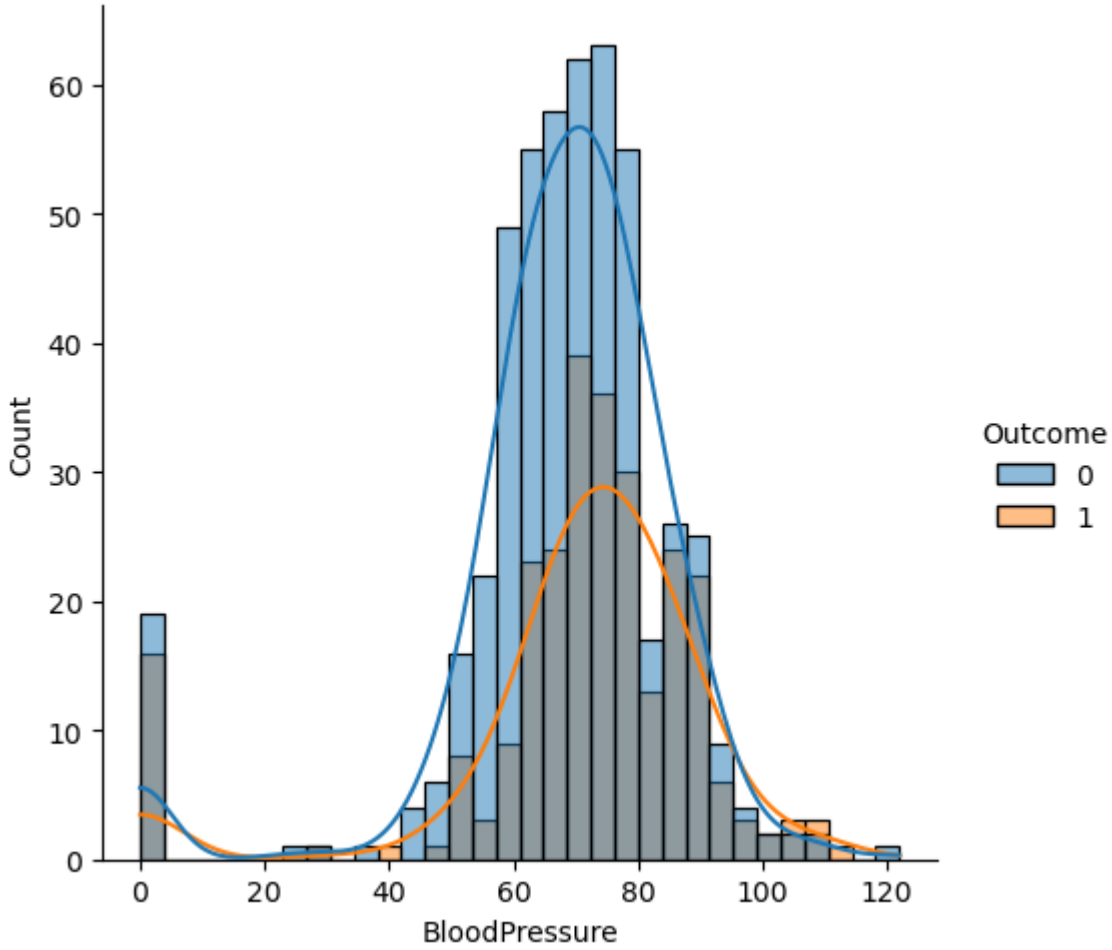
In [21]:
```
sns.displot(x='Glucose',hue="Outcome",kde=True,data=data,color="PuBuGn")
```

Out[21]: <seaborn.axisgrid.FacetGrid at 0x1800186b370>



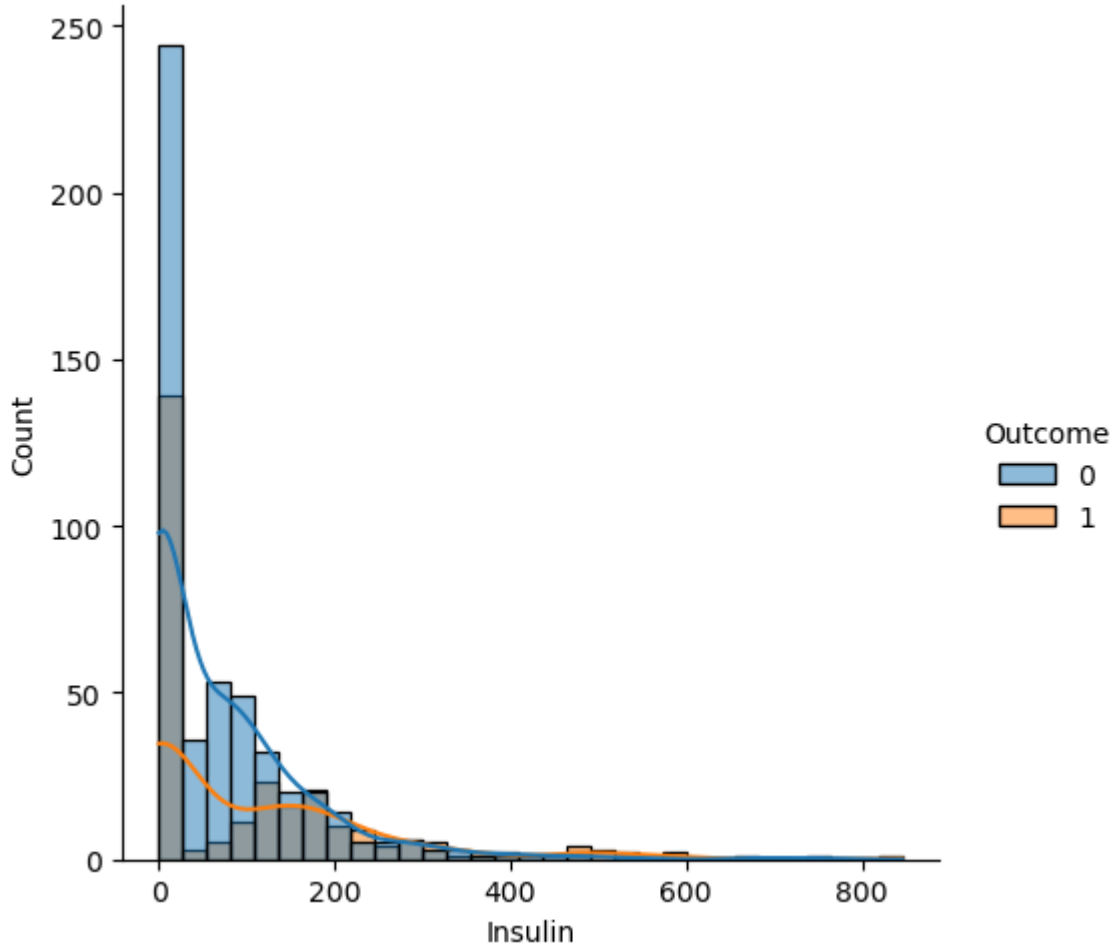
In [22]:
```
sns.displot(x='BloodPressure',hue="Outcome",kde=True,data=data,color="PuBuGn")
```

Out[22]: <seaborn.axisgrid.FacetGrid at 0x1800156e6a0>



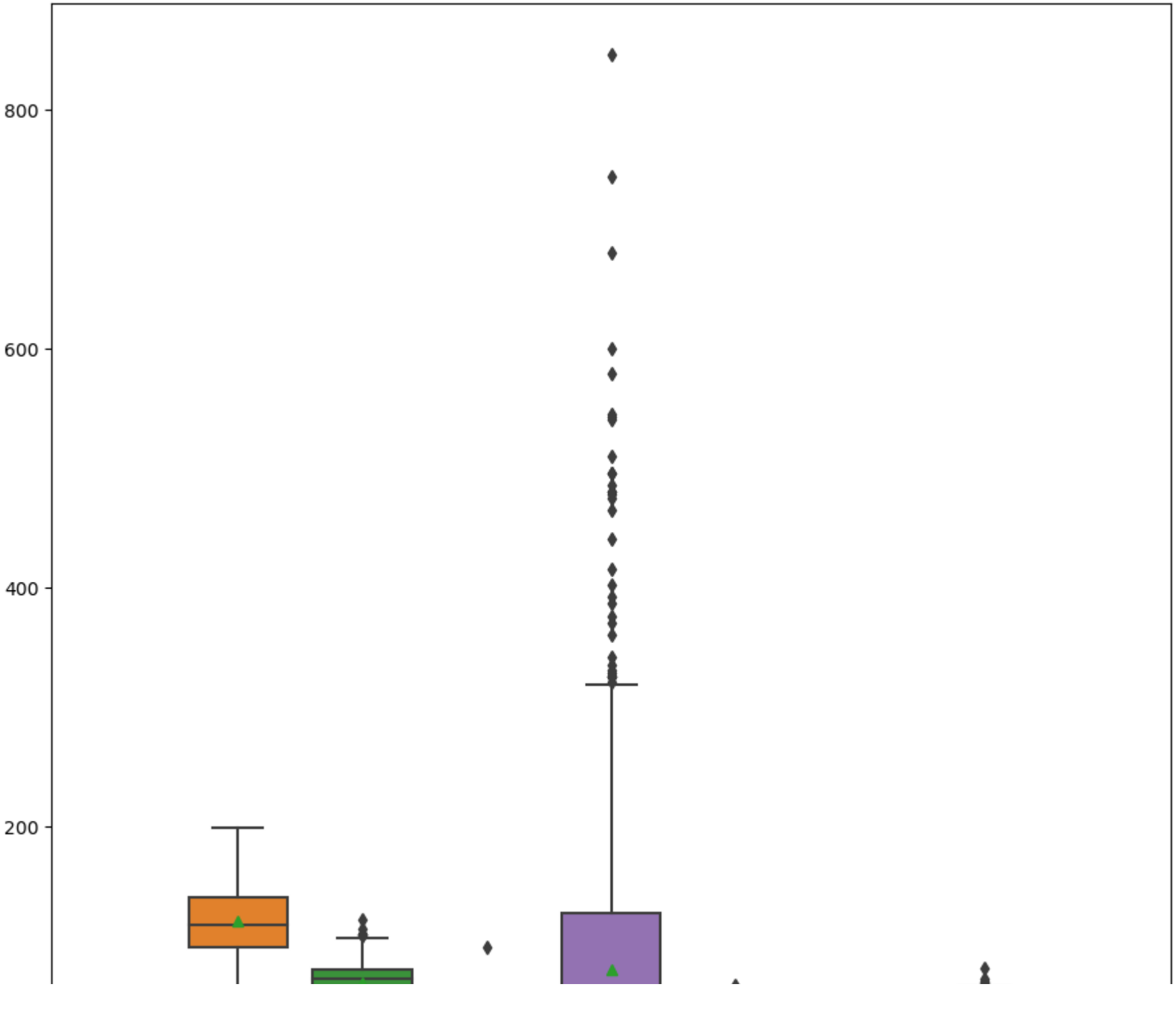
In [23]:
```
sns.displot(x='Insulin',hue="Outcome",kde=True,data=data,color="PuBuGn")
```

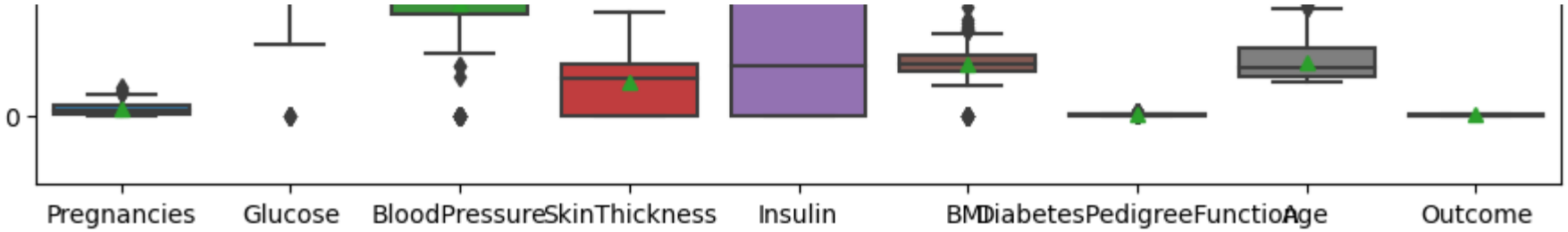
Out[23]: <seaborn.axisgrid.FacetGrid at 0x18002e9ffa0>



In [29]:
```
plt.figure(figsize=(11,11))
sns.boxplot(data=data,showmeans=True)
```

Out[29]:
```
<AxesSubplot:>
```


800
600
400
200



Outlier Treatment

In [30]:
```
from scipy import stats
z_score_threshold=3.0
z_score=np.abs(stats.zscore(data))
outlier_mask=(z_score >z_score_threshold).any(axis=1)
data1=data[ outlier_mask]
```

Input Output sepration

In [32]:
```
x=data.iloc[:,:-1].values
x
```

Out[32]:
```
array([[  6.   , 148.   ,  72.   , ...,  33.6  ,   0.627,  50.   ],
       [  1.   ,  85.   ,  66.   , ...,  26.6  ,   0.351,  31.   ],
       [  8.   , 183.   ,  64.   , ...,  23.3  ,   0.672,  32.   ],
       ...,
       [  5.   , 121.   ,  72.   , ...,  26.2  ,   0.245,  30.   ],
       [  1.   , 126.   ,  60.   , ...,  30.1  ,   0.349,  47.   ],
       [  1.   ,  93.   ,  70.   , ...,  30.4  ,   0.315,  23.   ]])
```

In [34]:
```
y=data.iloc[:,-1].values
y
```

Out[34]:
```
array([1, 0, 1, 0, 1, 0, 1, 0, 1, 1, 0, 1, 0, 1, 1, 1, 1, 1, 0, 1, 0, 0,
       1, 1, 1, 1, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 1,
       0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0,
       1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0,
       1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1,
       1, 1, 0, 0, 1, 1, 1, 0, 0, 0, 1, 0, 0, 0, 1, 1, 0, 0, 1, 1, 1, 1,
       1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0,
       1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 1, 1, 0, 0, 0, 1,
       0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 1, 1, 0, 1, 0, 1,
       1, 1, 0, 0, 0, 0, 0, 0, 1, 1, 0, 1, 0, 0, 0, 1, 1, 1, 1, 0, 1, 1,
       1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0,
       1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 1, 0, 1, 0, 0,
       1, 0, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 1, 1, 0,
       0, 1, 0, 0, 0, 1, 1, 1, 0, 0, 1, 0, 1, 0, 1, 1, 0, 1, 0, 0, 1, 0,
       1, 1, 0, 0, 1, 0, 1, 0, 0, 1, 0, 1, 0, 1, 1, 1, 0, 0, 1, 0, 1, 0,
       0, 0, 1, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0,
       0, 0, 0, 1, 1, 1, 0, 1, 1, 0, 0, 1, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0,
       0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 0, 0, 1, 0, 0, 1, 0,
       0, 1, 0, 1, 1, 0, 1, 0, 1, 0, 1, 0, 1, 1, 0, 0, 0, 0, 1, 1, 0, 1,
       0, 1, 0, 0, 0, 0, 1, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0,
       1, 0, 0, 1, 1, 1, 0, 0, 1, 0, 0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0,
       1, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0,
       1, 0, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 1, 1, 1, 0, 0, 1, 1, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0,
       0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1, 0, 1, 0,
       0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 1, 0, 0, 0, 0, 1, 1, 0, 1, 0,
       0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0,
       1, 0, 0, 0, 1, 0, 0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1,
       0, 1, 1, 1, 1, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 1, 0, 0, 1,
       0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1, 1, 0, 0, 0, 0, 1, 1, 0,
       0, 0, 1, 0, 1, 1, 0, 0, 1, 0, 0, 1, 1, 0, 0, 1, 0, 0, 1, 0, 0, 0,
       0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 1, 0,
       1, 1, 1, 0, 0, 1, 1, 1, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0],
      dtype=int64)
```

Training and Testing

In [37]:
```
from sklearn import model_selection
xtrain,xtest,ytrain,ytest = model_selection.train_test_split(x,y,test_size=0.3,random_state=10)
xtrain
```

Out[37]:
```
array([[2.00e+00, 8.90e+01, 9.00e+01, ..., 3.35e+01, 2.92e-01, 4.20e+01],
       [4.00e+00, 1.46e+02, 8.50e+01, ..., 2.89e+01, 1.89e-01, 2.70e+01],
       [1.00e+01, 1.11e+02, 7.00e+01, ..., 2.75e+01, 1.41e-01, 4.00e+01],
       ...,
       [3.00e+00, 1.16e+02, 7.40e+01, ..., 2.63e+01, 1.07e-01, 2.40e+01],
       [1.00e+00, 8.80e+01, 3.00e+01, ..., 5.50e+01, 4.96e-01, 2.60e+01],
       [5.00e+00, 9.60e+01, 7.40e+01, ..., 3.36e+01, 9.97e-01, 4.30e+01]])
```

In [38]:
```
xtest
```

Out[38]:
```
array([[  4.   , 154.   ,  72.   , ...,  31.3  ,   0.338,  37.   ],
       [  2.   , 112.   ,  86.   , ...,  38.4  ,   0.246,  28.   ],
       [  1.   , 135.   ,  54.   , ...,  26.7  ,   0.687,  62.   ],
       ...,
       [  3.   , 150.   ,  76.   , ...,  21.   ,   0.207,  37.   ],
       [  3.   , 130.   ,  64.   , ...,  23.1  ,   0.314,  22.   ],
       [  0.   , 108.   ,  68.   , ...,  27.3  ,   0.787,  32.   ]])
```

In [39]:
```
ytrain
```

Out[39]:
```
array([0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1,
       1, 0, 0, 0, 0, 1, 1, 0, 0, 1, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1,
       0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 1,
       0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 1, 1, 1, 0, 1, 0, 1, 1, 0, 0,
       0, 1, 0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0,
       0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 1, 0, 1,
       0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 1, 0, 1, 1, 0, 1, 1, 0, 0, 0, 0,
       1, 1, 0, 0, 1, 1, 1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1,
       0, 0, 1, 0, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1, 0,
       0, 0, 0, 1, 1, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0,
       1, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 1, 0, 1, 1, 1, 0, 0, 0, 0, 1, 0,
       0, 1, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0,
       1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 1, 0,
       1, 1, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 1, 1, 0, 0, 1, 0,
       0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 1, 0, 0,
       1, 1, 0, 1, 0, 1, 1, 0, 1, 1, 1, 0, 0, 1, 1, 1, 1, 0, 0, 1, 0, 0,
       0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1, 0, 1, 1, 0, 1, 0, 0, 1, 0,
       1, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0,
       1, 1, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 1, 1, 0, 0, 0, 0, 1,
       0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 1, 0, 1, 1, 0, 0, 0, 1, 0,
       1, 0, 0, 0, 1, 1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0,
       1, 0, 0, 0, 1, 1, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0,
       1, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 1,
       0, 0, 0, 0, 1, 0, 0, 1, 0], dtype=int64)
```

In [40]:
```
ytest
```

Out[40]:
```
array([0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 1, 0,
       0, 1, 0, 1, 0, 1, 1, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 1, 1, 1, 0,
       1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0,
       1, 0, 0, 1, 1, 1, 0, 1, 0, 0, 1, 1, 0, 1, 0, 1, 0, 0, 1, 1, 0, 1,
       1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 1, 1, 0, 0, 0, 1, 1, 0, 0,
       0, 1, 0, 0, 1, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 1, 1,
       0, 0, 0, 1, 0, 1, 1, 1, 0, 0, 1, 0, 1, 0, 0, 1, 1, 1, 1, 0, 1, 0,
       1, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 1, 1,
       0, 1, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0,
       0, 1, 0, 0, 1, 1, 0, 0, 1, 0, 1, 1, 0, 0, 1, 1, 0, 1, 0, 0, 0, 1,
       0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0], dtype=int64)
```

Normalization

In [41]:
```
from sklearn.preprocessing import StandardScaler
scaler=StandardScaler()
scaler.fit(xtrain)
xtrain=scaler.transform(xtrain)
xtest=scaler.transform(xtest)
xtrain
```

Out[41]:
```
array([[-0.53788077, -0.98266127,  1.07584045, ...,  0.19662751,
        -0.51280558,  0.74882677],
       [ 0.06137644,  0.74886132,  0.81461495, ..., -0.39218237,
        -0.8218938 , -0.52209603],
       [ 1.85914807, -0.31435431,  0.03093844, ..., -0.57138538,
        -0.96593491,  0.57937039],
       ...,
       [-0.23825217, -0.16246636,  0.23991884, ..., -0.72498795,
        -1.06796403, -0.77628059],
       [-0.83750938, -1.01303886, -2.05886558, ...,  2.94867368,
         0.09936914, -0.60682422],
       [ 0.36100504, -0.77001815,  0.23991884, ...,  0.20942772,
         1.60279824,  0.83355495]])
```

In [42]:
```
xtest
```

Out[42]:
```
array([[ 0.06137644,  0.99188203,  0.13542864, ..., -0.08497722,
        -0.37476618,  0.32518583],
       [-0.53788077, -0.28397672,  0.86686005, ...,  0.82383803,
        -0.65084498, -0.43736785],
       [-0.83750938,  0.41470783, -0.80498317, ..., -0.6737871 ,
         0.67253273,  2.44339049],
       ...,
       [-0.23825217,  0.87037167,  0.34440904, ..., -1.40339934,
        -0.76787838,  0.32518583],
       [-0.23825217,  0.26281989, -0.28253216, ..., -1.13459483,
        -0.44678674, -0.94573696],
       [-1.13713798, -0.40548708, -0.07355176, ..., -0.59698581,
         0.97261838, -0.0984551 ]])
```

[illegible]

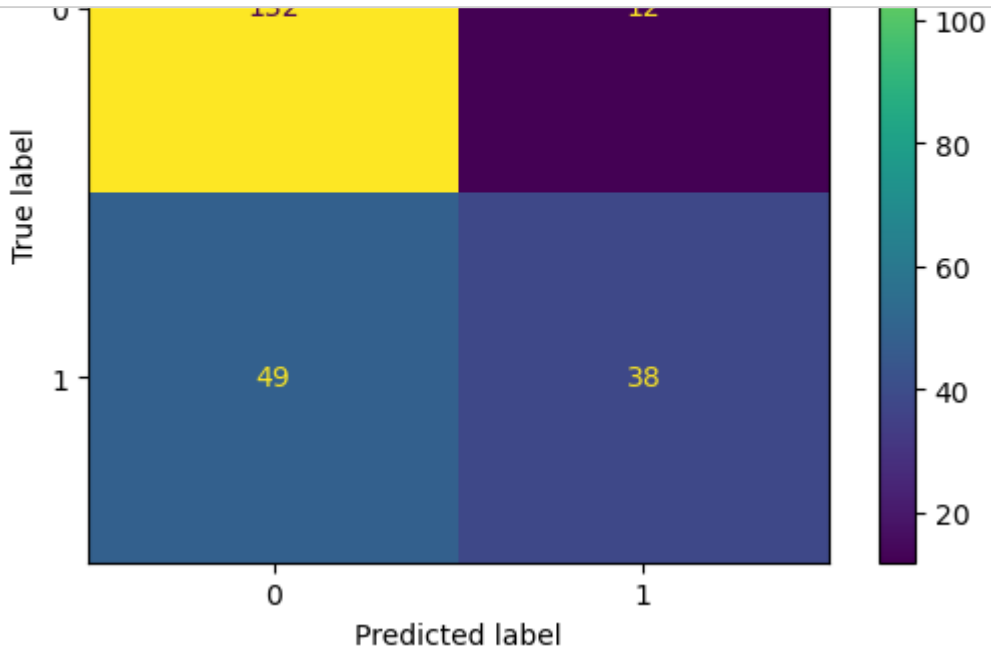
Modelselection using Classification Algorithms

```
Algorithms
K-Nearest Neighbors
Naive Bayes
Support Vector Machine
Decision Tree
Random Forest
```

In [47]:
```
from sklearn.neighbors import KNeighborsClassifier
from sklearn.svm import SVC
from sklearn.naive_bayes import GaussianNB
from sklearn.tree import DecisionTreeClassifier
from sklearn.ensemble import RandomForestClassifier
from sklearn.metrics import ConfusionMatrixDisplay
knn=KNeighborsClassifier()
svm=SVC()
nb=GaussianNB()
dt=DecisionTreeClassifier(criterion='entropy')
rf=RandomForestClassifier(n_estimators=10,criterion='entropy')
lst=[knn,svm,nb,dt,rf]
```

Perfomance Evaluvation

In [49]:
```
from sklearn.metrics import confusion_matrix,accuracy_score,classification_report
for i in lst:
    print(i)
    i.fit(xtrain,ytrain)
    y_pred=i.predict(xtest)
    y_pred
    print(accuracy_score(ytest,y_pred))
    print('**********************************************************')
    print(confusion_matrix(ytest,y_pred))
    print('**********************************************************')
    print(classification_report(ytest,y_pred))
    print('**********************************************************')
    result=confusion_matrix(ytest,y_pred)
    labels=[0,1]
    cmd=ConfusionMatrixDisplay(result,display_labels=labels)
    cmd.plot()
```



Model prediction

In [53]:
```
input_data=nb.predict(scaler.transform([[2,148,66,27,219,28.1,0.313,50]]))
if input_data==0:
    print('The person is NOT Diabetic')
else:
    print('The person is Diabetic')
```

```
The person is Diabetic
```

Conclusion

It is concluded that out of the 5 models Randome Forest is the best perfoming model as it has the highest accuracy of 76% as compared to all the models