```
import pandas as pd
pima=pd.read_csv("/content/drive/MyDrive/Personal/Studies/MSC Data Science Material/SEM2/ML/Practical/data_set/diabetes.csv")
```

```
from google.colab import drive
drive.mount('/content/drive')
```

```
    Mounted at /content/drive
```

```
pima.head()
```

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigre
0	6	148	72	35	0	33.6	
1	1	85	66	29	0	26.6	
2	8	183	64	0	0	23.3	
3	1	89	66	23	94	28.1	
4	0	137	40	35	168	43.1	

```
#split dataset in features and target variable
feature_cols=["Pregnancies", "Insulin", "BMI", "Age", "Glucose", "BloodPressure", "DiabetesPedigreeFunction"]
x = pima[feature_cols]
y = pima.Outcome #Target Variable
```

```
#splitting x and y into train and test data
from sklearn.model_selection import train_test_split
x_train, x_test, y_train, y_test=train_test_split(x,y, test_size=0.25, random_state=0)
```

```
from sklearn.linear_model import LogisticRegression

#instantiate the model (using the default parameters)
logreg=LogisticRegression()

#fit the model with data
logreg.fit(x_train, y_train)
```

```
    /usr/local/lib/python3.9/dist-packages/sklearn/linear_model/_logistic.py:458: Conver
    STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

    Increase the number of iterations (max_iter) or scale the data as shown in:
        https://scikit-learn.org/stable/modules/preprocessing.html
    Please also refer to the documentation for alternative solver options:
        https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
      n_iter_i = _check_optimize_result(
    ▾ LogisticRegression
    LogisticRegression()
```

```
#predict the model
y_pred=logreg.predict(x_test)
```

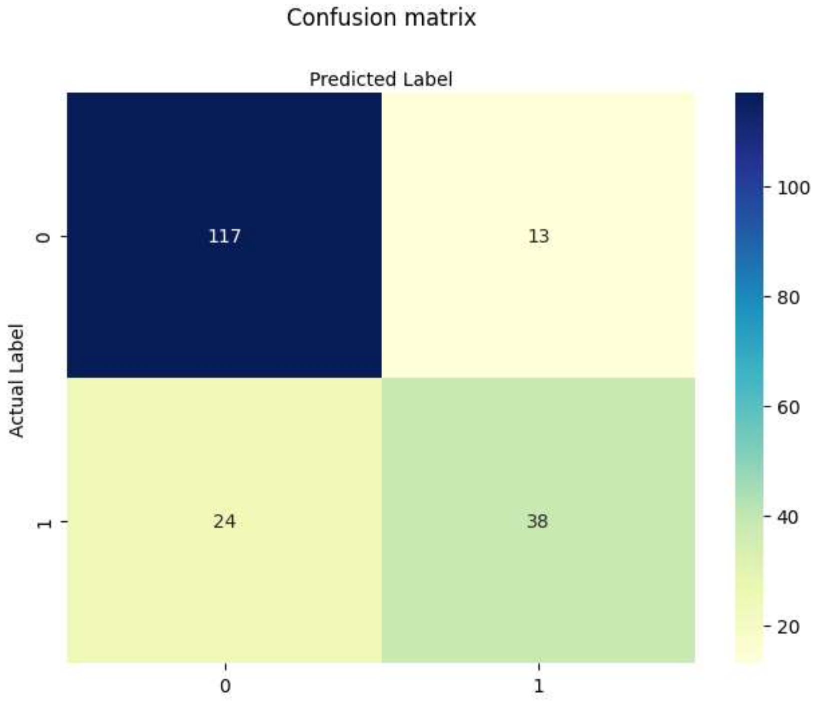
```
from sklearn import metrics
cnf_matrix=metrics.confusion_matrix(y_test, y_pred)
cnf_matrix
#diagonal values are accurate prediction
```

```
    array([[117,  13],
           [ 24,  38]])
```

```
from ast import increment_lineno
import numpy as np
import matplotlib.pyplot as mtp
import seaborn as sns
%matplotlib inline
```

```
class_names=[0,1] #name of the classes
fig, ax=mtp.subplots()
tick_marks = np.arange(len(class_names))
mtp.xticks(tick_marks, class_names)
mtp.yticks(tick_marks, class_names)
#create heatmap
sns.heatmap(pd.DataFrame(cnf_matrix), annot=True, cmap="YlGnBu", fmt="g")
ax.xaxis.set_label_position("top")
mtp.tight_layout()
mtp.title("Confusion matrix", y=1.1)
mtp.ylabel("Actual Label")
mtp.xlabel("Predicted Label")
```

```
Text(0.5, 427.9555555555555, 'Predicted Label')
```


Confusion matrix
Predicted Label
Actual Label