Importing required libraries

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score, classification_report, confusion_matrix
```

Loading Dataset

```
data=pd.read_csv("/content/diabetes.csv")
data
```

	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

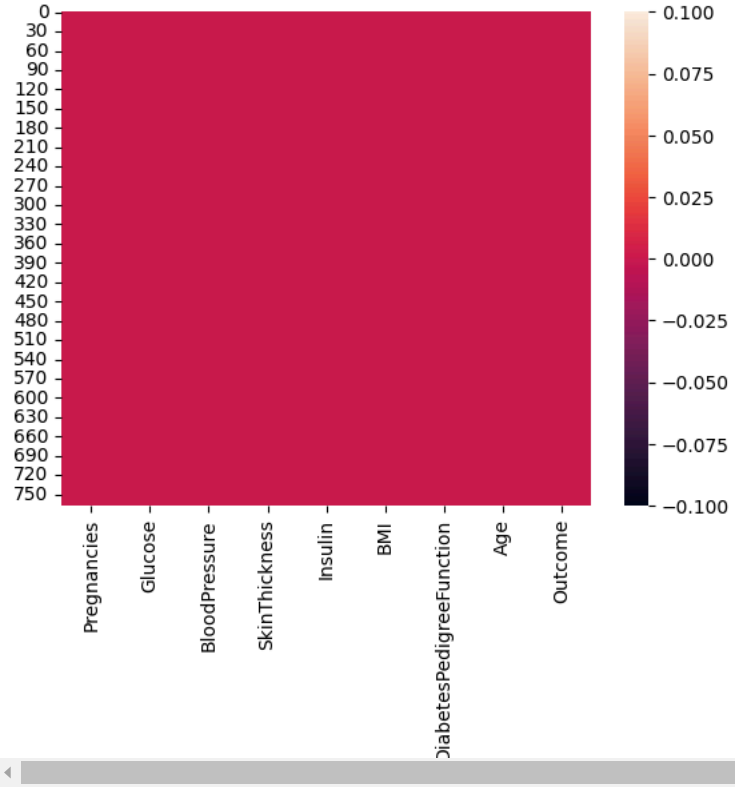
768 rows × 9 columns

Next steps: Generate code with data | View recommended plots | New interactive sheet

Checking for missing values

```
sns.heatmap(data.isnull())
```

<Axes: >



Co-relation matrix

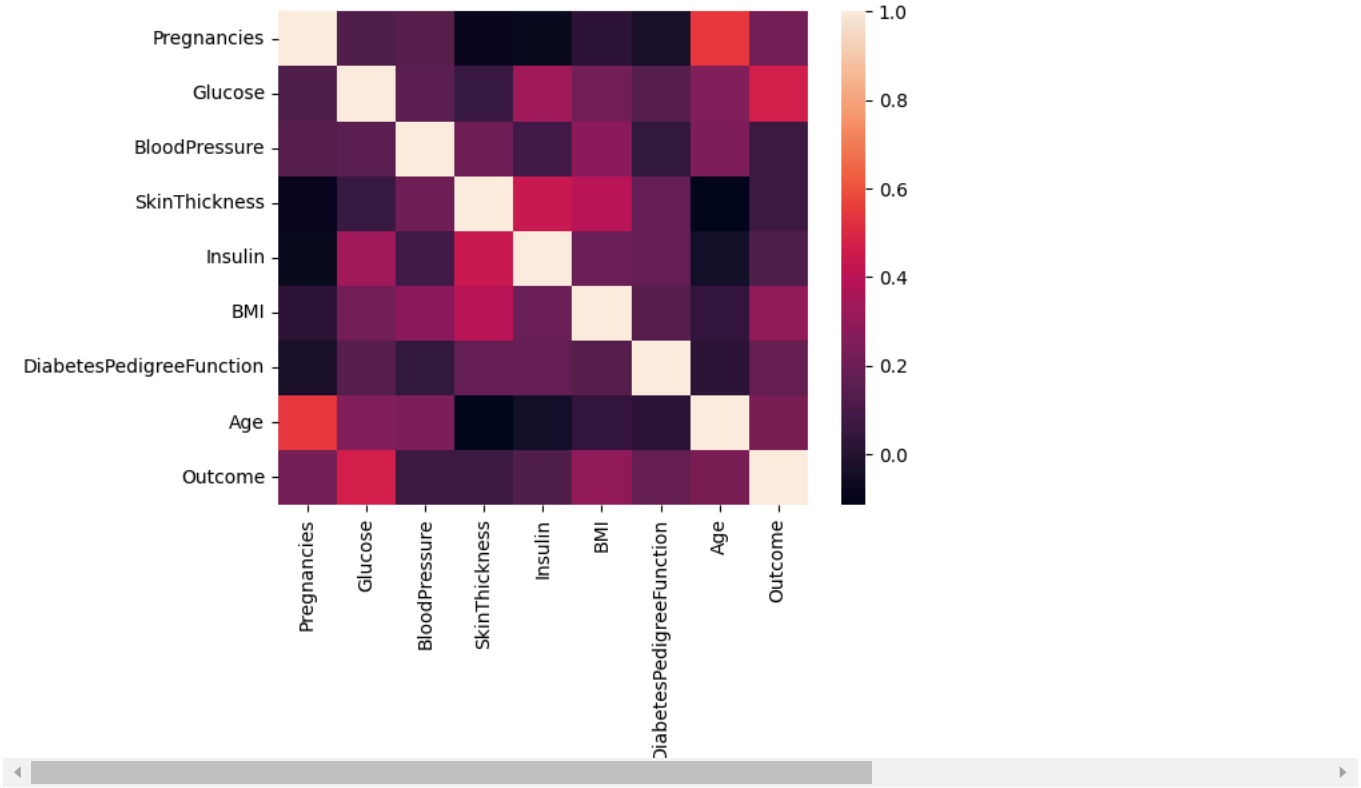
```
correlation=data.corr()
print(correlation)
```

```
                          Pregnancies   Glucose  ...       Age   Outcome
Pregnancies                  1.000000  0.129459  ...  0.544341  0.221898
Glucose                      0.129459  1.000000  ...  0.263514  0.466581
BloodPressure                0.141282  0.152590  ...  0.239528  0.065068
SkinThickness               -0.081672  0.057328  ... -0.113970  0.074752
Insulin                     -0.073535  0.331357  ... -0.042163  0.130548
BMI                          0.017683  0.221071  ...  0.036242  0.292695
DiabetesPedigreeFunction    -0.033523  0.137337  ...  0.033561  0.173844
Age                          0.544341  0.263514  ...  1.000000  0.238356
Outcome                      0.221898  0.466581  ...  0.238356  1.000000

[9 rows x 9 columns]
```

```
sns.heatmap(correlation)
```

```
<Axes: >
```



Train test split

```
X=data.drop("Outcome", axis=1)
Y=data["Outcome"]

X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=0.2)
X_train
```

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age
258	1	193	50	16	375	25.9	0.655	24
516	9	145	88	34	165	30.3	0.771	53
224	1	100	66	15	56	23.6	0.666	26

Next steps: Generate code with X_train View recommended plots New interactive sheet

Training the model

```
model=LogisticRegression()
model.fit(X_train, Y_train)
```

```
/usr/local/lib/python3.11/dist-packages/sklearn/linear_model/_logistic.py:465: ConvergenceWarning: lbfgs failed to converge (status=
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()
```

Making predictions

```
predictions=model.predict(X_test)
predictions
```

```
array([1, 0, 0, 0, 1, 1, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0,
       0, 0, 1, 0, 0, 1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1,
       0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 1, 0, 0, 1,
       1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 0, 1, 0, 0, 0, 1,
       0, 1, 0, 1, 1, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1, 1, 1, 1, 0, 0,
       0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0])
```

Evaluation

```
accuracy=accuracy_score(predictions, Y_test)
print(accuracy)
```

```
0.7792207792207793
```

Start coding or generate with AI.