ex_11

November 9, 2025

[2]:

```python
import pandas as pd

# Load the dataframe.
df_diabetes = pd.read_csv('/home/mtech_fde/Sarvesh_Projects/EX 11/diabetes.csv')

# Compute the covariance matrix.
covariance_matrix = df_diabetes.cov()

# Print the covariance matrix.
covariance_matrix
```

[2]:

```
                          Pregnancies      Glucose  BloodPressure  \
Pregnancies                 11.354056    13.947131       9.214538
Glucose                     13.947131  1022.248314      94.430956
BloodPressure                9.214538    94.430956     374.647271
SkinThickness               -4.390041    29.239183      64.029396
Insulin                    -28.555231  1220.935799     198.378412
BMI                          0.469774    55.726987      43.004695
DiabetesPedigreeFunction    -0.037426     1.454875       0.264638
Age                         21.570620    99.082805      54.523453
Outcome                      0.356618     7.115079       0.600697

                          SkinThickness       Insulin         BMI  \
Pregnancies                   -4.390041    -28.555231    0.469774
Glucose                       29.239183   1220.935799   55.726987
BloodPressure                 64.029396    198.378412   43.004695
SkinThickness                254.473245    802.979941   49.373869
Insulin                      802.979941  13281.180078  179.775172
BMI                           49.373869    179.775172   62.159984
DiabetesPedigreeFunction       0.972136      7.066681    0.367405
Age                          -21.381023    -57.143290    3.360330
Outcome                        0.568747      7.175671    1.100638

                          DiabetesPedigreeFunction        Age   Outcome
Pregnancies                              -0.037426  21.570620  0.356618
Glucose                                   1.454875  99.082805  7.115079
BloodPressure                             0.264638  54.523453  0.600697
SkinThickness                             0.972136 -21.381023  0.568747
```

Insulin	7.066681	-57.143290	7.175671
BMI	0.367405	3.360330	1.100638
DiabetesPedigreeFunction	0.109779	0.130772	0.027472
Age	0.130772	138.303046	1.336953
Outcome	0.027472	1.336953	0.227483

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