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In [5]: #Practical-11 PCA By Shubham S Kale
import numpy as np
from sklearn.decomposition import PCA
from sklearn.datasets import fetch_olivetti_faces
orl = fetch_olivetti_faces()
X = orl.data
target = orl.target
ipca = PCA()
ipca.fit(X)
x_new = ipca.transform(X)
print(X.shape)
print(x_new.shape)
print(ipca.explained_variance_ratio_)
```

(400L, 4096L)

(400L, 400L)

[2.38127294e-01	1.39939710e-01	7.96861377e-02	4.99833132e-02
	3.60984796e-02	3.15693929e-02	2.42683229e-02	2.03639767e-02
	1.95811410e-02	1.67212182e-02	1.59522173e-02	1.43697886e-02
	1.24674106e-02	1.14713319e-02	1.06287736e-02	9.77720323e-03
	9.19060282e-03	8.15573267e-03	7.53874527e-03	7.46984788e-03
	6.98577774e-03	6.14628184e-03	5.83927712e-03	5.69722525e-03
	5.46190782e-03	5.31855320e-03	5.13816218e-03	4.95841285e-03
	4.57664067e-03	4.41183409e-03	4.02001707e-03	3.84189832e-03
	3.61950970e-03	3.34542390e-03	3.20380734e-03	3.16040880e-03
	3.05147321e-03	2.98634741e-03	2.82141010e-03	2.74006497e-03
	2.59771982e-03	2.53990361e-03	2.44547104e-03	2.39839586e-03
	2.30890402e-03	2.26419090e-03	2.2286389e-03	2.20442947e-03
	2.08920884e-03	2.04983074e-03	1.96842973e-03	1.91435940e-03
	1.85046049e-03	1.78938961e-03	1.77608167e-03	1.72482705e-03
	1.68585023e-03	1.64168161e-03	1.61885451e-03	1.58394304e-03
	1.55428284e-03	1.52232926e-03	1.49957485e-03	1.47712214e-03
	1.42608932e-03	1.40597571e-03	1.36941065e-03	1.33972762e-03
	1.30914945e-03	1.28719635e-03	1.27427965e-03	1.26231557e-03
	1.23800743e-03	1.21333736e-03	1.17883275e-03	1.14881496e-03
	1.14184290e-03	1.10183682e-03	1.09685530e-03	1.08622906e-03
	1.06534842e-03	1.04695608e-03	1.01680574e-03	9.87809908e-04
	9.74820722e-04	9.63704163e-04	9.55994376e-04	9.33097455e-04
	9.11879528e-04	9.08564470e-04	8.90563447e-04	8.81069809e-04
	8.75609004e-04	8.64560522e-04	8.25340255e-04	8.06901723e-04
	7.97248607e-04	7.94179529e-04	7.86682768e-04	7.72961430e-04
	7.57980256e-04	7.54067165e-04	7.40207049e-04	7.34334599e-04
	7.18259863e-04	7.11515211e-04	7.00335774e-04	6.86411777e-04
	6.73601005e-04	6.67970577e-04	6.57396059e-04	6.54191471e-04
	6.39304009e-04	6.30952473e-04	6.23455023e-04	6.20931312e-04
	6.12621374e-04	5.92792990e-04	5.89645020e-04	5.79747663e-04
	5.72390100e-04	5.63834123e-04	5.54131896e-04	5.47773551e-04
	5.45162183e-04	5.41708121e-04	5.38290120e-04	5.29012616e-04
	5.24270881e-04	5.17421298e-04	5.11849189e-04	4.98627949e-04
	4.93514901e-04	4.86231755e-04	4.80935896e-04	4.77416289e-04
	4.72869248e-04	4.66713197e-04	4.62844303e-04	4.57348462e-04
	4.45894296e-04	4.43867075e-04	4.39831576e-04	4.32065125e-04
	4.26230007e-04	4.24525165e-04	4.21003393e-04	4.18194466e-04
	4.10199942e-04	4.07422093e-04	4.03956679e-04	3.98036777e-04
	3.96363510e-04	3.91015063e-04	3.88758801e-04	3.86635523e-04
	3.80882523e-04	3.74048696e-04	3.71895371e-04	3.69400468e-04
	3.65424907e-04	3.61814415e-04	3.59215400e-04	3.54972166e-04