In [15]:
```
#Practical-12 SVD By Shubham S Kale
import numpy as np
from sklearn.decomposition import TruncatedSVD
from sklearn.datasets import fetch_olivetti_faces
orl = fetch_olivetti_faces()
X = orl.data
target = orl.target
svd = TruncatedSVD(n_components=5, n_iter=7, random_state=42)
print(X.shape)
```

```
(400L, 4096L)
```

In [14]:
```
model = TruncatedSVD(n_components=10).fit(X)
X_proj = model.transform(X)
explained_variances = np.var(X_proj, axis=0) / np.var(X, axis=0).sum()
print(explained_variances)
```

```
[ 0.21919981  0.14410808  0.08080812  0.051126    0.04175536  0.03160613
  0.02528731  0.02120919  0.02024743  0.01672308]
```

In [ ]:
```

```