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In [1]: ## How to extract features using PCA in Python
def Snippet_124():
    print()
    print(format('How to extract features using PCA in Python', '^82'))
    import warnings
    warnings.filterwarnings("ignore")
    # load libraries
    from sklearn import decomposition, datasets
    from sklearn.preprocessing import StandardScaler
    # Load the breast cancer dataset
    dataset = datasets.load_breast_cancer()
    # Load the features
    X = dataset.data
    # View the shape of the dataset
    print(); print(X.shape)
    print(); print(X)
    # Standardize Features
    sc = StandardScaler()
    # Fit the scaler to the features and transform
    X_std = sc.fit_transform(X)
    # View the new feature data's shape
    print(); print(X_std.shape)
    print(); print(X_std)
    # Create a pca object with the 3 components
    pca = decomposition.PCA(n_components=3)
    # Fit the PCA and transform the data
    X_std_pca = pca.fit_transform(X_std)
    # View the new feature data's shape
    print(); print(X_std_pca.shape)
    print(); print(X_std_pca)
Snippet_124()

```

\*\*\*\*\*How to extract features using PCA in Python\*\*\*\*\*

(569, 30)

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[[1.799e+01 1.038e+01 1.228e+02 ... 2.654e-01 4.601e-01 1.189e-01]
 [2.057e+01 1.777e+01 1.329e+02 ... 1.860e-01 2.750e-01 8.902e-02]
 [1.969e+01 2.125e+01 1.300e+02 ... 2.430e-01 3.613e-01 8.758e-02]
 ...
 [1.660e+01 2.808e+01 1.083e+02 ... 1.418e-01 2.218e-01 7.820e-02]
 [2.060e+01 2.933e+01 1.401e+02 ... 2.650e-01 4.087e-01 1.240e-01]
 [7.760e+00 2.454e+01 4.792e+01 ... 0.000e+00 2.871e-01 7.039e-02]]
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(569, 30)

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[[ 1.09706398 -2.07333501 1.26993369 ... 2.29607613 2.75062224
 1.93701461]
 [ 1.82982061 -0.35363241 1.68595471 ... 1.0870843 -0.24388967
 0.28118999]
 [ 1.57988811 0.45618695 1.56650313 ... 1.95500035 1.152255
 0.20139121]
 ...
 [ 0.70228425 2.0455738 0.67267578 ... 0.41406869 -1.10454895
 -0.31840916]
 [ 1.83834103 2.33645719 1.98252415 ... 2.28998549 1.91908301
 2.21963528]
 [-1.80840125 1.22179204 -1.81438851 ... -1.74506282 -0.04813821
 -0.75120669]]
```

(569, 3)

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[[ 9.19283683 1.94858303 -1.12316727]
 [ 2.38780179 -3.76817176 -0.52929381]
 [ 5.73389628 -1.07517378 -0.55174638]
 ...
 [ 1.25617928 -1.9022967 0.56273076]
 [10.37479406 1.67201011 -1.87702877]
 [-5.47524331 -0.67063683 1.49044307]]
```

In [ ]: