In this assignment students have to transform iris data into 3 dimensions and plot a 3d chart with transformed dimensions and color each data point with specific class. Hint: import numpy as np import matplotlib.pyplot as plt from mpl_toolkits.mplot3d import Axes3D from sklearn import decomposition from sklearn import datasets

In [1]:
```
import warnings
warnings.filterwarnings("ignore")
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
from mpl_toolkits.mplot3d import Axes3D
from sklearn.decomposition import PCA
from sklearn import datasets
```

In [2]:
```
iris = datasets.load_iris()
```

In [3]:
```
X_reduced = PCA(n_components=3).fit_transform(iris.data)
Y = iris.target

fig = plt.figure(1, figsize=(8, 6))
ax = Axes3D(fig, elev=-150, azim=110)

ax.scatter(X_reduced[:, 0], X_reduced[:, 1], X_reduced[:, 2], c=Y,
           cmap=plt.cm.rainbow_r)

ax.set_title("First three PCA directions")
ax.set_xlabel("1st eigenvector")
ax.set_ylabel("2nd eigenvector")
ax.set_zlabel("3rd eigenvector")

plt.show()
```