**PW SKILLS**

**NUMPY ASSIGNMENT**

```python

import numpy as np

# Given code

list\_ = ['1', '2', '3', '4', '5']

array\_list = np.array(object=list\_)

# Q1

# Check the data type of variables list\_ and array\_list

print("Data type of list\_:", type(list\_))

print("Data type of array\_list:", type(array\_list))

# Q2

# Print the data type of each element in list\_

for element in list\_:

print("Data type of element in list\_:", type(element))

# Print the data type of each element in array\_list

for element in array\_list:

print("Data type of element in array\_list:", type(element))

# Q3

# Change the data type of array\_list to int

array\_list = np.array(object=list\_, dtype=int)

# Print the data type of each element in list\_ and array\_list after the change

for element in list\_:

print("Data type of element in list\_ after change:", type(element))

for element in array\_list:

print("Data type of element in array\_list after change:", type(element))

# New code

num\_list = [[1, 2, 3], [4, 5, 6]]

num\_array = np.array(object=num\_list)

# Q4

# (i) Print the shape of num\_array

print("Shape of num\_array:", num\_array.shape)

# (ii) Print the size of num\_array

print("Size of num\_array:", num\_array.size)

# Q5

# Create a numpy array of zeros with shape (3, 3)

zeros\_array = np.zeros((3, 3))

print("Zeros array:")

print(zeros\_array)

# Q6

# Create an identity matrix of shape (5, 5)

identity\_matrix = np.eye(5)

print("Identity matrix:")

print(identity\_matrix)

```