Exercise :

1. Write a NumPy program to convert a list of numeric value into a one-dimensional NumPy array.

Solution 1 :

```
import numpy as np
l = [12.23, 13.32, 100, 36.32]
print("Original List:",l)
a = np.array(l)
print("One-dimensional NumPy array: ",a)
```

2. Write a NumPy program to create an array with values ranging from 12 to 38

Solution 2

```
import numpy as np
x = np.arange(12, 38)
print(x)
```

3. Write a NumPy program to create a 3x3 matrix with values ranging from 2 to 10

Solution 3:

```
import numpy as np
x =  np.arange(2, 11).reshape(3,3)
print(x)
```

4. Write a NumPy program to create a null vector of size 10 and update sixth value to 11

Solution 4:

```
import numpy as np
x = np.zeros(10)
print(x)
```

```
print("Update sixth value to 11")
x[6] = 11
print(x)
```

5. Write a NumPy program to reverse an array (first element becomes last).

Soultion 5:

```
x = np.arange(12, 38)
print("Original array:")
print(x)
print("Reverse array:")
y= x[::-1]
print(y)
```

6. Write a NumPy program to convert an array to a float type

Solution 6 :

```
import numpy as np
a = [1, 2, 3, 4]
print("Original array")
print(a)
x = np.asfarray(a)
print("Array converted to a float type:")
print(x)
```

7. Write a NumPy program to append values to the end of an array

Solution 7:

```
import numpy as np
x = [10, 20, 30]
print("Original array:")
print(x)
x1 = np.append(x, [[40, 50, 60], [70, 80, 90]])
print("After append values to the end of the array:")
print(x1)
```

8. Write a NumPy program to create an empty and a full array.

Solution 8 :

```
import numpy as np
# Create an empty array
x = np.empty((3,4))
print(x)
# Create a full array
y = np.full((3,3),6)
print(y)
```

9. Write a NumPy program to convert the values of Centigrade degrees into Fahrenheit degrees

Solution 9 :

```
import numpy as np
fvalues = [0, 12, 45.21, 34, 99.91]
F = np.array(fvalues)
print("Values in Fahrenheit degrees:")
print(F)
print("Values in  Centigrade degrees:")
print(5*F/9 - 5*32/9)
```

10. Write a NumPy program to find common values between two arrays

Solution 10:

```
import numpy as np
array1 = np.array([0, 10, 20, 40, 60])
print("Array1: ",array1)
array2 = [10, 30, 40]
print("Array2: ",array2)
print("Common values between two arrays:")
print(np.intersect1d(array1, array2))
```