**HANDOUT 1-Solution**

**Machine Learning-numpy**

Q1. Create a rank 1 array

import numpy as np

a = np.array([0, 1, 2])

print type(a)

print (a.shape)

print (a[0])

print (a[1])

print(a[2])

Print(a)

Q2. Create a rank 2 array

b = np.array([[0,1,2],[3,4,5]])

print(b.shape)

print(b)

print(b[0, 0], b[0, 1], b[1, 0])

Q3. Create a 3x3 array of all zeros

a = np.zeros((3,3))

print(a)

Q4. Create a 2x2 array of all ones

b = np.ones((2,2))

print(b)

Q5. Create a 3x3 constant array

c = np.full((3,3), 7)

print c

Q6. Create a 3x3 array filled with random values

d = np.random.random((3,3))

Q7. Create a 3x3 identity matrix

e = np.eye(3)

Q8. Convert list to array

f = np.array([2, 3, 1, 0])

print(f)

Q9. Use arange() to create arrays with regularly increment values

g = np.arange(20)

print(g)

Q10. Find Mean, Media, Mode, Standard Deviation of a given dataset

import numpy

from scipy import stats

speed = [99,86,87,88,111,86,103,87,94,78,77,85,86]

x = numpy.mean(speed)

y = numpy.median(speed)

z= stats.mode(speed)

p = numpy.std(speed)

print( "mean is",x)

print("median is",y)

print("mode is",z)

print("std is",p)