### Homework Practice 3

***NUMPY***

Q1 -

import numpy as np

A = np.array([[1, 2, 3], [4, 5, 6]])

B = np.array([[7, 8, 9], [10, 11, 12]])

stacked\_vertically = np.vstack((A, B))

stacked\_horizontally = np.hstack((A, B))

print("Stacked Vertically:\n", stacked\_vertically)

print("Stacked Horizontally:\n", stacked\_horizontally)

Q2 -

import numpy as np

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

B = np.array([3, 4, 5, 6, 7])

common\_elements = np.intersect1d(A, B)

print("Common elements between A and B:", common\_elements)

Q3 -

import numpy as np

A = np.array([2, 6, 8, 3, 10, 12, 7, 9, 4])

lower\_bound = 5

upper\_bound = 10

mask = (A >= lower\_bound) & (A <= upper\_bound)

elements\_in\_range = A[mask]

print("Elements within the range:", elements\_in\_range)

Q4 -

import numpy as np

url = 'https://archive.ics.uci.edu/ml/machine-learning-databases/iris/iris.data'

iris\_2d = np.genfromtxt(url, delimiter=',', dtype='float', usecols=[0, 1, 2, 3])

petal\_length\_condition = iris\_2d[:, 2] > 1.5

sepal\_length\_condition = iris\_2d[:, 0] < 5.0

filtered\_rows = iris\_2d[petal\_length\_condition & sepal\_length\_condition]

print("Filtered Rows:")

print(filtered\_rows)

***PANDAS***

Q1 -

import pandas as pd

filtered\_rows = df.iloc[::20, [0, 1, 2]]

filtered\_rows.reset\_index(drop=True, inplace=True)

print(filtered\_rows)

Q2 -

import pandas as pd

df['Min.Price'].fillna(df['Min.Price'].mean(), inplace=True)

df['Max.Price'].fillna(df['Max.Price'].mean(), inplace=True)

Q3 -

import pandas as pd

row\_sums = df.sum(axis=1)

mask = row\_sums > 100