

Assignment 1 Solution

Ashok kumar
200110021

Vaibhav kumar
20d070087

1.Numpy

- a. In NumPy, we can find common values between two arrays with the help `intersect1d()`. It will take parameter two arrays and it will return an array in which all the common elements will appear.
- b. To find the two arrays equal or not we use the `np.array_equal(array1,array2)` it gives the result in the True or False form. This requires arrays to be exactly equal. We could as well use `np.allclose(arr1,arr2,atol,rtol)` but it doesn't require arrays to be exactly equal, it permits some tolerance.
- c. We will use `np.add(arr1,arr2,out)`, `np.divide(arr1,arr2,out)`, `np.multiply(arr1,arr2,out)`. These provide the option to store result to where we want instead without making any copies.
- d. Defined a new P array for the result, and stored the required r, θ values into it using `np.sqrt()` and `np.arctan()` functions.

2.Pandas

- a. `df.drop_duplicates()` drops the duplicates in the data frame, and then we can calculate the number of rows using the `.shape()` function.
- b. `df.mean(axis=1)` gives mean along rows, we will subtract it from the dataframe using `df.sub()` along `axis=0`.
- c. `df1.groupby()` function can be used to group the data frame by any column we want, after this we can use `.apply(lambda grps: grps.nlargest(3).sum())` to find the sum of three largest values.

