Lab Task 1

(Lists ,Tuples, Dictionaries, Sets, Numpy)

Task 1:

Create a list of areas that contains the areas of the bedroom, hallway, bathroom, kitchen, and living room of a house with the following values respectfuly.

**112.0, 113.5, 189.5, 789.0 , 230.2.**

Make a clone of the areas list and name it as float\_area now remove all values except for float values in the float\_area list. Do the same for string values as well and name it as str\_area. Now you will have three lists.

**Areas**

**Float\_area**

**Str\_area**

1. Print all elements of lists using slicing
2. Print the area of bedroom along its name from Areas list using slicing

Task 2:

Consider that you have won a lottery and you want to extend your house. Add

another list of the pool\_area with the area allotted as ‘112.7, 177.9’. Along with this add a list garage with an area of 112.0. The final list will look something like this

**[‘bed’, 112.0 , ‘hall’, 113.5, ‘bath’, 189.5, ‘kit’,789.0, ‘liv’, 230.0 , [‘pool’,112.7,117.9],[‘grg’,112.0]].**

Write a Python program to deep flattens the above list.Following is an example.

Original list elements:

[1, [2], [[3], [4], 5], 6]

Deep flatten the said list:

[1, 2, 3, 4, 5, 6]

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[[[1, 2, 3], [4, 5]], 6]

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Task 3:

Write a Python program to extract values from a given dictionaries and create a list of lists from those values.

**Original Dictionary**:

[{'student\_id': 1, 'name': 'Jean Castro', 'class': 'V'}, {'student\_id': 2, 'name': 'Lula Powell', 'class': 'V'}, {'student\_id': 3, 'name': 'Brian Howell', 'class': 'VI'}, {'student\_id': 4, 'name': 'Lynne Foster', 'class': 'VI'}, {'student\_id': 5, 'name': 'Zachary Simon', 'class': 'VII'}]

**Extract values from the said dictionarie and create a list of lists using those values**:

[[1, 'Jean Castro', 'V'], [2, 'Lula Powell', 'V'], [3, 'Brian Howell', 'VI'], [4, 'Lynne Foster', 'VI'], [5, 'Zachary Simon', 'VII']]

[[1, 'Jean Castro'], [2, 'Lula Powell'], [3, 'Brian Howell'], [4, 'Lynne Foster'], [5, 'Zachary Simon']]

[['Jean Castro', 'V'], ['Lula Powell', 'V'], ['Brian Howell', 'VI'], ['Lynne Foster', 'VI'], ['Zachary Simon', 'VII']]

And vice versa

Task 4:

Let’s suppose that you have a list of lists. This basically is a list of people and their favorite food items. Write a python function that returns the indices of people whose list of favorite food items is not a subset of any other list of favorites food items.Keep in mind that ou have to return the indices in increasing order. Following is the given list of lists

Fav\_food\_items = [[‘pizza’,’burger’,’hotdogs’] ,

[‘pasta’,’hotdogs’],[‘pizza’],[‘burger’,’hotdogs’],[‘rice’ ,’pasta’] ,[‘pasta’]]

Output : [0,4]

Task 5:

Builds a ten-element tuple of random numbers and then sort the tupple in increasing order without using built-in function. Rember the result should be a tupple.

Numpy

Task 1:

Write a NumPy program to create an array of 10 zeros, 10 ones, 10 fives.

Task 2:

Write a NumPy program to create a 3x4 matrix filled with values ​​from 10 to 21.

Task 3:

Write a NumPy program to save a given array to a text file and load it.

Task 4:

Write a NumPy program to create a three-dimension array with shape (3,5,4) and set to a variable, then swap rows and columns of a given array in reverse order.

Lambda

Task 5:

Write a Python program to square and cube every number in a given list of integers using Lambda.