Lab Dictionary

Data We Want to Organize

You are given a dataset as below represented as a list. You should organize them in the required data structure in following tasks.

```
SIZE = 48
names = ['STU' + str(i) for i in range(100,100+SIZE)]
names
```

```
['STU100',
 'STU101',
 'STU102',
 'STU103',
 'STU104',
 'STU105',
 'STU106',
 'STU107',
 'STU108',
 'STU109',
 'STU110',
 'STU111',
 'STU112',
 'STU113',
 'STU114',
 'STU115',
 'STU116',
 'STU117',
 'STU118',
 'STU119',
 'STU120',
 'STU121',
 'STU122',
 'STU123',
 'STU124',
 'STU125',
 'STU126',
 'STU127',
 'STU128',
 'STU129',
 'STU130',
 'STU131',
 'STU132',
 'STU133',
 'STU134',
 'STU135',
 'STU136',
 'STU137',
 'STU138',
 'STU139',
 'STU140',
 'STU141',
 'STU142',
 'STU143',
 'STU144',
 'STU145',
 'STU146',
 'STU147']
```

```python
import random

scores1 = [random.randint(60, 100) for i in range(SIZE)]
```

scores1

```
[80,
 74,
 75,
 93,
 68,
 99,
 80,
 97,
 67,
 71,
 86,
 71,
 71,
 100,
 100,
 97,
 79,
 71,
 85,
 78,
 95,
 68,
 87,
 90,
 71,
 83,
 80,
 77,
 60,
 74,
 98,
 66,
 77,
 90,
 98,
 92,
 77,
 63,
 87,
 74,
 85,
 90,
 71,
 99,
 78,
 99,
 97,
 91]
```

```
scores2 = [random.randint(60, 100) for i in range(SIZE)]
scores2
```

[88,
 88,
 99,
 65,
 74,
 80,
 90,
 71,
 63,
 81,
 70,
 96,
 63,
 76,
 86,
 64,
 71,
 94,
 73,
 61,
 87,
 97,
 60,
 95,
 85,
 68,
 70,
 93,
 70,
 77,
 83,
 87,
 90,
 67,
 83,
 73,
 74,
 83,
 88,
 87,
 83,
 78,
 87,
 67,
 88,
 61,
 97,
 62]

Dictionary

Task: Create a dictionary `d1`, in which names as key and scores1 as values

```python
d1 = {name:score1 for name, score1 in zip(names, scores1)}
d1
```

```
{'STU100': 80,
 'STU101': 74,
 'STU102': 75,
 'STU103': 93,
 'STU104': 68,
 'STU105': 99,
 'STU106': 80,
 'STU107': 97,
 'STU108': 67,
 'STU109': 71,
 'STU110': 86,
 'STU111': 71,
 'STU112': 71,
 'STU113': 100,
 'STU114': 100,
 'STU115': 97,
 'STU116': 79,
 'STU117': 71,
 'STU118': 85,
 'STU119': 78,
 'STU120': 95,
 'STU121': 68,
 'STU122': 87,
 'STU123': 90,
 'STU124': 71,
 'STU125': 83,
 'STU126': 80,
 'STU127': 77,
 'STU128': 60,
 'STU129': 74,
 'STU130': 98,
 'STU131': 66,
 'STU132': 77,
 'STU133': 90,
 'STU134': 98,
 'STU135': 92,
 'STU136': 77,
 'STU137': 63,
 'STU138': 87,
 'STU139': 74,
 'STU140': 85,
 'STU141': 90,
 'STU142': 71,
 'STU143': 99,
 'STU144': 78,
 'STU145': 99,
 'STU146': 97,
 'STU147': 91}
```

Task: Print the score of the student with name 'STU136'

```
print(d1['STU136'])
```

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Task: Create a dictionary `d2`, in which names as key and scores2 as values

```python
d2 = {name:score2 for name, score2 in zip(names, scores2)}
d2
```

```
{'STU100': 88,
 'STU101': 88,
 'STU102': 99,
 'STU103': 65,
 'STU104': 74,
 'STU105': 80,
 'STU106': 90,
 'STU107': 71,
 'STU108': 63,
 'STU109': 81,
 'STU110': 70,
 'STU111': 96,
 'STU112': 63,
 'STU113': 76,
 'STU114': 86,
 'STU115': 64,
 'STU116': 71,
 'STU117': 94,
 'STU118': 73,
 'STU119': 61,
 'STU120': 87,
 'STU121': 97,
 'STU122': 60,
 'STU123': 95,
 'STU124': 85,
 'STU125': 68,
 'STU126': 70,
 'STU127': 93,
 'STU128': 70,
 'STU129': 77,
 'STU130': 83,
 'STU131': 87,
 'STU132': 90,
 'STU133': 67,
 'STU134': 83,
 'STU135': 73,
 'STU136': 74,
 'STU137': 83,
 'STU138': 88,
 'STU139': 87,
 'STU140': 83,
 'STU141': 78,
 'STU142': 87,
 'STU143': 67,
 'STU144': 88,
 'STU145': 61,
 'STU146': 97,
 'STU147': 62}
```

Task: Print the names of student whose score is 88

```
for name in d2:
    if d2[name] == 88:
        print(name)
```

    STU100
    STU101
    STU138
    STU144

Task: Createa a dictionary `d3`, in which names as key, and a list of scores as value. The list of scores has two elements: the first one is from scores1, and the second one is from scores2.

```python
d3 = {name:[score1, score2] for name, score1, score2 in zip(names, scores1, scores2
d3
```

```
{'STU100': [80, 88],
 'STU101': [74, 88],
 'STU102': [75, 99],
 'STU103': [93, 65],
 'STU104': [68, 74],
 'STU105': [99, 80],
 'STU106': [80, 90],
 'STU107': [97, 71],
 'STU108': [67, 63],
 'STU109': [71, 81],
 'STU110': [86, 70],
 'STU111': [71, 96],
 'STU112': [71, 63],
 'STU113': [100, 76],
 'STU114': [100, 86],
 'STU115': [97, 64],
 'STU116': [79, 71],
 'STU117': [71, 94],
 'STU118': [85, 73],
 'STU119': [78, 61],
 'STU120': [95, 87],
 'STU121': [68, 97],
 'STU122': [87, 60],
 'STU123': [90, 95],
 'STU124': [71, 85],
 'STU125': [83, 68],
 'STU126': [80, 70],
 'STU127': [77, 93],
 'STU128': [60, 70],
 'STU129': [74, 77],
 'STU130': [98, 83],
 'STU131': [66, 87],
 'STU132': [77, 90],
 'STU133': [90, 67],
 'STU134': [98, 83],
 'STU135': [92, 73],
 'STU136': [77, 74],
 'STU137': [63, 83],
 'STU138': [87, 88],
 'STU139': [74, 87],
 'STU140': [85, 83],
 'STU141': [90, 78],
 'STU142': [71, 87],
 'STU143': [99, 67],
 'STU144': [78, 88],
 'STU145': [99, 61],
 'STU146': [97, 97],
 'STU147': [91, 62]}
```

Task: find the cluster of students whose scores are all at least 90.

```python
students_A = {s:[d3[s][0], d3[s][1]] for s in d3 if d3[s][0] >=90 and d3[s][1] >=90
students_A
```

    {'STU123': [90, 95], 'STU146': [97, 97]}