Lab 5

# 1. Learning Practice to use list, dict and set

**1. useful list operations**

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| L = ["Python", "Java", "C++"] |  |
| A = L[-1] | A = ‘C++’ |
| A = L[::2]) | A =['Python', 'C++'] |
| L.append("Go") | L = ['Python', 'Java', 'C++', 'Go'] |
| L.insert(1, "C#") | L =['Python', 'C#', 'Java', 'C++', 'Go'] |
| L.sort() | L =['C#', 'C++', 'Go', 'Java', 'Python'] |
| L.pop(2) | L = ['C#', 'C++', 'Java', 'Python'] |
| L.remove("Java") | L =['C#', 'C++', 'Python'] |
| L.extend(["Php", "JavaScript"]) | L =['C#', 'C++', 'Python', 'Php', 'JavaScript'] |

**2. Shallow copy vs deep copy for lists**

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| import copy  a = [1, 2, [3, 4]]  b = a  c = copy.copy(a) # Shallow copy  d = copy.deepcopy(a) # Deep copy |  |
| a[0] = 5 | a =[5, 2, [3, 4]]  b = [5, 2, [3, 4]]  c = [1, 2, [3, 4]]  d =[1, 2, [3, 4]] |
| a[2][1] = 0 | a =[5, 2, [3, 0]]  b = [5, 2, [3, 0]]  c = [1, 2, [3, 0]]  d =[1, 2, [3, 4]] |

**3. Accessing values in a dict**

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| d = {"name": "John", "age": 30} |  |
| A = d["name"])  B = d.get("age") | A =’John’  B = 30 |
| A = “name” in d  B = “Gender” in d | A =True  B =False |
| A = d.keys()  B = d.values() | A =dict\_keys(['name', 'age'])  B =dict\_values(['John', 30]) |

**4. Set operations**

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| set1 = {1, 2, 3}  set2 = {3, 4, 5} |  |
| A = set1 | set2 # union  B = set1 & set2 # intersection  C = set1 - set2 # difference | A ={1,2,3,4,5}  B ={3}  C ={1,2} |