Dictionary inside a list , or a list inside a dictionary is useful.

*'''*

*Quick Introduction to Dictionary*

*'''*

dict = {*"SG"*:32, *"KL"*:34, *"BK"*:35, *"TK"*:28}

print(dict)

print(dict[*"BK"*])

dict[*"SY"*]= 100

print(dict)

dict[*"SG"*]= 132

print(dict[*"SG"*])

dict2 = {101:1000, 201:340, 23:123}

print(dict2[101]) # Crash if key does not exist

#print(dict2[999])

val = dict2.get(999) # return none if value does not exist

if val == None:

print(*"Does not exist"*)

print(val)

if 999 in dict2:

print(*"Exist"*)

else:

print(*"Not in dictionary"*)

val = dict2.get(999, -1) # return -1 if key does not exist

# Get all the keys

for val in dict.keys():

print(val)

# Get all the values

for val in dict.values():

print(val)

# Get both key and value, one pair at a time

for val in dict.items():

print(val)

# Another way to get both key and value pair

for v1, v2 in dict.items():

print(v1, v2)

# Remove key-value pair from dictionary

del dict[*"KL"*] # Remove key = "KL"

print(dict)

dict.popitem() # Remove last key-value pair

# Dictionary can contain anything as value (list, number etc)

student = {}

student [*"S1"*] = {*"name"*: *"Alice"*, *"major"*: *"BICT"*, *"GPA"*: 3.5}

student [*"S2"*] = {*"name"*: *"Benny"*, *"major"*: *"BEHAS"*, *"GPA"*: 3.2}

for s in student.keys():

print(s, student[s])

{'SG': 32, 'KL': 34, 'BK': 35, 'TK': 28}

35

{'SG': 32, 'KL': 34, 'BK': 35, 'TK': 28, 'SY': 100}

132

1000

Does not exist

None

Not in dictionary

SG

KL

BK

TK

SY

132

34

35

28

100

('SG', 132)

('KL', 34)

('BK', 35)

('TK', 28)

('SY', 100)

SG 132

KL 34

BK 35

TK 28

SY 100

{'SG': 132, 'BK': 35, 'TK': 28, 'SY': 100}

S1 {'name': 'Alice', 'major': 'BICT', 'GPA': 3.5}

S2 {'name': 'Benny', 'major': 'BEHAS', 'GPA': 3.2}

*'''*

*Example of dictionary containing list*

*{"team A": [3, 1, 1, 5, 1, 10], "team B": [3, 1, 1, 5, 1, 10]...."}*

*A, 3, 1, 1, 5, 1, 10 ---> split(",")*

*values = ["A", "3", "1", "1", "5", "1", "10"]*

*key --> "A"*

*value --> [3, 1, 1, 5, 1, 10]*

*team["A"] = [...]*

*'''*

def **getTeamData**():

teams = {}

datafile = open(*"TeamOne.txt"*, *"r"*)

for eachLine in datafile:

values = eachLine.split(*","*)

name = values[0]

stat = []

for num in values[1:]:

stat.append(int(num))

teams[name] = stat

datafile.close()

return teams

### main starts here

sgTeam = getTeamData()

print(sgTeam)



{'A': [3, 1, 1, 5, 1, 10], 'B': [3, 1, 1, 5, 1, 10], 'c': [3, 1, 1, 5, 1, 10]}

*'''*

*Example of dictionary containing list*

*{"team A": [3, 1, 1, 5, 1, 10], "team B": [3, 1, 1, 5, 1, 10]...."}*

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datafile = open(*"TeamOne.txt"*, *"r"*)

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name = values[0]

stat = []

for num in values[1:]:

stat.append(int(num))

teams[name] = stat

datafile.close()

return teams

def **updateTeam**(teamStat, gScored, gAllowed):

if gScored > gAllowed:

teamStat[0] += 1

teamStat[5] += 3

elif gScored < gAllowed:

teamStat[1] += 1

else:

teamStat[2] += 1

teamStat[5] += 1

teamStat[3] += gScored

teamStat[4] += gAllowed

### main starts here

sgTeams = getTeamData()

# Loop to allow user to enter match result and update the dictonary

matchResult = input(*"Enter name, goals scored, goals allowed: "*)

while matchResult != *""*:

name, gScored, gAllowed = matchResult.split() # "A 5 2"

gScored, gAllowed = int(gScored), int(gAllowed) # Convert string to int

teamStat = sgTeams[name]

updateTeam(teamStat, gScored, gAllowed)

matchResult = input(*"Enter name, goals scored, goals allowed"*)

# Show result

for team in sgTeams:

print(team, sgTeams[team])

Enter name, goals scored, goals allowed: B 5 2

Enter name, goals scored, goals allowed A 2 1

Enter name, goals scored, goals allowed

A [4, 1, 1, 7, 2, 13]

B [4, 1, 1, 10, 3, 13]

c [3, 1, 1, 5, 1, 10]

*'''*

*Finding Max*

*'''*

myList = [[*"a"*, 10, 10], [*"x"*, 40, 200], [*"m"*, 20, 5], [*"W"*, 50, 40]]

index = 0

highest = myList[0][2]

for idx in range(1, len(myList)):

if highest < myList[idx][2]:

index = idx

highest = myList[idx][2]

print(index)

print(highest)

import random

def **getDummyData**(students):

for idx in range(1, 11):

name = *"S{}"*.format(idx)

score = random.randint(0, 100)

students[name] = score

def **showMenu**():

print(*"1 Add"*)

print(*"2 Update"*)

print(*"3 Remove"*)

print(*"4 Retrieve score by name"*)

print(*"5 Retrieve name(s) by score"*)

print(*"0 Quit"*)

def **main**():

students = {}

getDummyData(students) # Call function to fill up dictionary

showMenu()

option = int(input(*"Enter an option: "*))

while option !=0:

if option == 1:

name = input(*"Enter student name: "*)

score = int(input(*"Enter score: "*))

students[name] = score

elif option == 2:

name = input(*"Enter student name: "*)

score = int(input(*"Enter score: "*))

if name in students:

students[name] = score

else:

print(*"No such student"*)

students[name] = score

elif option == 3:

name = input(*"Enter student name: "*)

if name in students:

students.pop(name)

else:

print(*"No such student"*)

elif option == 4: # Retrieve score by name

name = input(*"Enter student name: "*)

score = students.get(name, -99)

if score == -99:

print(*"No such student"*)

else:

print(*"Student {} has score {}"*.format(name, score))

elif option == 5:

score = int(input(*"Enter score: "*))

for eachPair in students.items(): # Alternatively, can use for sName, sScore in students.items()

if eachPair[1] == score: # if sScore == score:

print(eachPair[0]) # print(sName)

else:

print(*"Invalid option"*)

showMenu()

option = int(input(*"Enter a option"*))