
Assignment # 02

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Course: Software Engineering

Section: AI-3C

Arid no: 24-Arid-4081

Question no 01;

Nested List Sum:

Def nested-sum(lst):

Total =0

for item in lst:

if isinstance (item,list):

total+=nested-sum(item)

else:

total+=item

```
return total
```

Question no 02;

Max Product in Nested Dictionary:

```
Product = {
```

```
    "Electronics": {"laptop": ,1200, "Phone":800},
```

```
    "Clothes": {"Shirt": ,50, "Shoes":100},
```

```
    "Grocery": {"Rice": ,20, "Milk":10},
```

```
}
```

```
Max-product=""
```

```
Max price=0
```

```
for category in products:
```

```
    for item,price in product[category].item():
```

```
        if price>max-price:
```

```
            max-price=price
```

```
            max-product=item
```

```
print (max-product,max-price)
```

Question no 03:

Nested list in Dictionary:

```
Def count_frequency(lst,freq=name):
```

```
If freq is None:
```

```
    Freq = {}
```

```
    for item in list:
```

```
        if isinstance(item,list):
```

```
            count_frequency(item,freq)
```

```
        else:
```

```
freq[item]=freq.get(item,0)+1  
return freq
```

Question no 04;

GPS (1)

```
{'action': 'more-green-disk-to-table',  
'preconds':[ 'green-disk-on-top', 'green-disk-on-pole' ],  
'Add':[ 'green-disk-on-table', "blue-disk-on-top" ],  
'delete':[ 'green-disk-on-top', 'green-disk-on-pole' ]},  
  
{'action': 'more-blue-disk-to-table',  
'preconds':[ 'blue-disk-on-top', 'blue-disk-on-pole' ],  
'Add':[ 'blue-disk-on-table', "red-disk-on-top" ],  
'delete':[ 'blue-disk-on-top', 'blue-disk-on-pole' ]},  
  
{'action': move-red-disk-to-Pole',  
'preconds':[ 'red-disk-on-top', 'red-disk-on-pole' ],  
'Add':[ 'red-disk-on-table' ],  
'delete':[ 'red-disk-on-top', 'red-disk-on-top' ]},  
  
{'action': move-blue-disk-to-Pole',  
'preconds':[ 'blue-disk-on-Pole', 'red-disk-on-top' ],  
'Add':[ 'blue-disk-on-pole', 'blue-disk-on-top' ],  
'delete':[ 'blue-disk-on-table', ' blue-disk-on-top' ]},  
  
{'action': move-green-disk-to-Pole',  
'preconds':[ 'green-disk-on-Pole', 'blue-disk-on-top' ],  
'Add':[ 'green-disk-on-pole', 'green-disk-on-top' ],  
'delete':[ 'green-disk-on-table', ' blue-disk-on-top' ]},
```

]

GPS(2)

```
{'action': 'P and Q cross side1 → side2',  
 'preconds':[‘P side1’, ‘Qside1’,’Lantern side1’],  
 ‘Add’:[‘P side2’,’Qside2’,’Lantern side2’],  
 ‘delete’:[‘Pside1’,’Qside1’,’lantern side’]},  
  
{‘action’: ‘P return side2 → side1’,  
 ‘preconds’:[‘P side2’,’Lantern side2’],  
 ‘Add’:[‘P side1’,’Lantern side1’],  
 ‘delete’:[‘Pside2’,’lantern side2’]},  
  
{‘action’: ‘R and S cross side1 → side2’,  
 ‘preconds’:[‘R side1’,’S side1’,’Lantern side1’],  
 ‘Add’:[‘R side2’,’S side2’,’Lantern side2’],  
 ‘delete’:[‘Rside1’,’S side1’”lantern side1’]},  
  
{‘action’: ‘Q return side2 → side1’,  
 ‘preconds’:[‘Q side2’,’Lantern side2’],  
 ‘Add’:[‘Q side1’,’Lantern side1’],  
 ‘delete’:[‘Qside2’,’lantern side2’]},  
  
{‘action’: ‘P and Q cross side1 → side2 again’,  
 ‘preconds’:[‘P side1’,’Q side1’,’Lantern side1’],  
 ‘Add’:[‘P side2’,’Q side2’,’Lantern side2’],  
 ‘delete’:[‘Pside1’,’Q side1’”lantern side1’]},
```

]

