HW1

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1 Homework 1

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[23]:
```
a = 5
b = 7
c = 3.14
d = 99.2
```

(i)

[24]:
```
a**c
```

[24]:
```
156.59064522818883
```

(ii)

[25]:
```
(a+b)*c+d
```

[25]:
```
136.88
```

(iii)

[26]:
```
a/b+c/d
```

[26]:
```
0.7459389400921659
```

(c)

[27]:
```
list1 = [1, 2, 3]
list2 = [4, 5, 6]
list1+list2
```

[27]:
```
[1, 2, 3, 4, 5, 6]
```

(d)

[28]:
```
dict1 = {'a': 5, 'b': 7, 'c': 3.14, 'd': 99.2}
dict1['c']
```

[28]: 3.14

1.0.2 Problem 2: Basic Functions

(a)

[29]:
```
def solution_a(lst, item):
    count = 0
    for x in lst:
        if x == item:
            count += 1
    return count
```

[30]:
```
list_a=['cat','dog',1,2,'bear',2,4,1]
print(solution_a(list_a,'cat'))
print(solution_a(list_a,2))
print(solution_a(list_a,3))
```

```
1
2
0
```

(b)

[31]:
```
def solution_b(nums):
    total = 0
    product = 1
    for x in nums:
        total += x
        product *= x
    return (total, product)
```

[32]:
```
list_b=[1.1,2.1,3.1,4.4,1.4,1.9,100,12.]
solution_b(list_b)
```

[32]: (126.0, 100574.81280000001)

(c)

[37]:
```
def solution_c(lst):
    total = 0
    for x in lst:
        if type(x) == int or type(x) == float:
            total += x
        else:
            print("Error: not a float or int:", x, "type:", type(x))
    return total
```

[38]:
```
list_c = [1, 2, 3, 'a', 4, 5, 'b', 6]
solution_c(list_c)
```

```
Error: not a float or int: a type: <class 'str'>
Error: not a float or int: b type: <class 'str'>
```

[38]: 21

(d)

[43]:
```
def solution_d(my_class, student_name, class_name):
    if student_name not in my_class:
        return "Error: there is no this student in this class"
    if class_name not in my_class[student_name]:
        return "Error: class not found for this student"
    return my_class[student_name][class_name]
```

[45]:
```
my_class={'Alice': {'Phys4':'A','Phys41':'A+'}}
my_class['Alice']
```

[45]: {'Phys4': 'A', 'Phys41': 'A+'}

[46]:
```
print(solution_d(my_class, 'Alice', 'Phys41'))
print(solution_d(my_class, 'Andy', 'Phys41'))
print(solution_d(my_class, 'Alice', 'Math20D'))
```

```
A+
Error: there is no this student in this class
Error: class not found for this student
```