DS Lab Week #1

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Q1)

```python
counter = 1000
miles = 1000.0
name = "John"
print(counter)
print(miles)
print(name)
```

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q1.py"
1000
1000.0
John
$
```

Q2)

```python
a = b = c = 1
a,b,c = 1,2, "John"
print(a, b, c)
```

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q2.py"
1 2 John
$
```

Q3)

```
q3.py          X

q3.py > ...
  1    a = 5
  2    b = 4.56
  3    print(5*a)
  4    print(a/2)
  5    print(a**2)
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q3.py"
25
2.5
25
$
```

Q4)

```
q4.py          X

q4.py > ...
  1    str = 'Hello World!'
  2    print(str)
  3    print(str[0])
  4    print(str[2:5])
  5    print(str[2:])
  6    print (str * 2)
  7    print(str * 2)
  8    print(str + "TEST")
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q4.py"
Hello World!
H
llo
llo World!
Hello World!Hello World!
Hello World!Hello World!
Hello World!TEST
$
```

Q5)

```
q5.py        ×
q5.py > ...
1    var1 = "Hello World!"
2    print("Updated String:", var1[:6] + 'Python')
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q5.py"
Updated String: Hello Python
$
```

Q6)

```
q6.py        ×
q6.py
1    print("My name is %s and weight is %d kg" % ('Angad', 75))
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q6.py"
My name is Angad and weight is 75 kg
$
```

Q7)

```
q7.py        ×
q7.py > ...
1    str = "this is a string example... wow!!"
2    print(str.capitalize())
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q7.py"
This is a string example... wow!!
$
```

Q8)

```
q8.py   ✕

q8.py > ...
  1   str = "this is a string example... wow!!"
  2   print(str.count('s'))
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q8.py"
3
$ []
```

Q9)

```
q9.py   ✕

q9.py > ...
  1   str = "this is a string example... wow!!"
  2   print(str.find('example'))
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q9.py"
17
$ ▊
```

Q10)

```
q10.py   ✕

q10.py > ...
  1   str = "THIS IS STRING EXAMPLE....WOW!!!"
  2   print (str.lower())
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q10.py"
this is string example....wow!!!
$ []
```

Q11)

```
q11.py  ✕

q11.py > ...
  1   str = "this is string example....wow!!! this is really string"
  2   print (str.replace("is", "was"))
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q11.py"
thwas was string example....wow!!! thwas was really string
$ ▮
```

Q12)

```
q12.py  ✕

q12.py > ...
  1   str = "this is string example....wow!!!";
  2   print (str.swapcase())
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q12.py"
THIS IS STRING EXAMPLE....WOW!!!
$ ▯
```

Q13)

```
q13.py  ✕

q13.py > ...
  1   str = "this is string example....wow!!!";
  2   print (str.title())
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q13.py"
This Is String Example....Wow!!!
$ ▮
```

Q14)

```
q14.py  ×

q14.py > ...
  1   list = ['abcd', 786, 2.23, 'john', 70.2]
  2   tinylist = [123, 'john']
  3   print(list)
  4   print(list[0])
  5   print(list[1:3])
  6   print(list[2:])
  7   print(tinylist * 2)
  8   print(list + tinylist)
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q14.py"
['abcd', 786, 2.23, 'john', 70.2]
abcd
[786, 2.23]
[2.23, 'john', 70.2]
[123, 'john', 123, 'john']
['abcd', 786, 2.23, 'john', 70.2, 123, 'john']
$
```

Q15)

```
q15.py  ×

q15.py > ...
  1   list = ['physics', 'chemistry', 1997, 2000]
  2   list.append('maths')
  3   print(list)
  4   del list[2]
  5   print(list)
  6   print('physics' in list)
  7   print('english' in list)
  8   print(len(list))
  9   print(list.count('physics'))
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q15.py"
['physics', 'chemistry', 1997, 2000, 'maths']
['physics', 'chemistry', 2000, 'maths']
True
False
4
1
$ 
```

Q16)

```
q16.py  ×

q16.py > ...
  1   list = ['physics','chemistry', 1997, 2000]
  2   list.pop()
  3   print(list)
  4   list = ['physics','chemistry', 1997, 2000]
  5   list.insert(2, 'maths')
  6   print(list)
  7   list = ['physics','chemistry', 1997, 2000]
  8   list.remove('chemistry')
  9   list = ['physics','chemistry', 1997, 2000]
 10   list.reverse()
 11   print(list)
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q16.py"
['physics', 'chemistry', 1997]
['physics', 'chemistry', 'maths', 1997, 2000]
[2000, 1997, 'chemistry', 'physics']
$ 
```

Q17)

```
q17.py ×

q17.py > ...
  1    tuple = ( 'abcd', 786 , 2.23, 'john', 70.2)
  2    list = [ 'abcd', 786, 2.23, 'john', 70.2 ]
  3    print(tuple)
  4    print(list)
  5    tuple[2] = 1000
  6    list[2] = 1000
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q17.py"
('abcd', 786, 2.23, 'john', 70.2)
['abcd', 786, 2.23, 'john', 70.2]
Traceback (most recent call last):
  File "/home/190905494/Documents/190905494/Week 1/q17.py", line 5, in <module>
    tuple[2] = 1000
TypeError: 'tuple' object does not support item assignment
$
```

Q18)

```
q18.py ×

q18.py > ...
  1    num = float(input("Enter a number: "))
  2    if num > 0:
  3        print("pos number")
  4    elif num == 0:
  5        print("zero")
  6    else:
  7        print('Neg number')
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q18.py"
Enter a number: 15
pos number
$
```

Q19)

```
q19.py  ✕

q19.py > ...
  1    x=float(input("Enter a number: "))
  2    if x < 10:
  3        print('smaller')
  4    elif x > 20:
  5        print('bigger')
  6    print('Finished')
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q19.py"
Enter a number: 25
bigger
Finished
$
```

Q20)

```
q20.py  ✕

q20.py > ...
  1    x = 5
  2    print('Before 5')
  3    if x==5:
  4        print('this is 5')
  5        print('still 5')
  6    print('After 5')
  7    print('Before 6')
  8    if x== 6:
  9        print('this is 6')
 10    print('After 6')
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q20.py"
Before 5
this is 5
still 5
After 5
Before 6
After 6
$
```

Q21)

```
q21.py    ×

q21.py > ...
  1   x=float(input("Enter a number: "))
  2   if x < 20:
  3       print('Below 20')
  4   elif x < 10:
  5       print('Below 10')
  6   else:
  7       print('something else')
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q21.py"
Enter a number: 15
Below 20
$
```

Q22)

```
q22.py    ×

q22.py > ...
  1   x=42
  2   if x > 1:
  3       print('above one')
  4   if x < 100:
  5       print('less than 100')
  6   print('All done')
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q22.py"
above one
less than 100
All done
$
```

Q23)

```
q23.py ✕

q23.py > ...
  1  age=15
  2  b = ('kid' if age < 18 else 'adult')
  3  print(b)
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q23.py"
kid
$ ▮
```

Q24)

```
q24.py ✕

q24.py > ...
  1  for val in [5,4,3,2,1]:
  2      print(val)
  3  print('Done')
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q24.py"
5
4
3
2
1
Done
$ ▮
```

Q25)

```
q25.py    ×

q25.py > ...
  1    stud = ['Ram', 'Vijay', 'Anu', 'Ramesh', 'suja']
  2    for k in stud:
  3        print('Hello: ', k)
  4    print('done')
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q25.py"
Hello:  Ram
Hello:  Vijay
Hello:  Anu
Hello:  Ramesh
Hello:  suja
done
$ ▯
```

Q26)

```
q26.py    ×

q26.py > ...
  1    for i in range(5):
  2        print(i)
  3        if i > 2:
  4            print('Bigger than 2')
  5            print('Done with i', i)
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q26.py"
0
1
2
3
Bigger than 2
Done with i 3
4
Bigger than 2
Done with i 4
$ ▮
```

Q27)

```
q27.py    ×

q27.py > ...
  1    x=int(input('Enter a number: '))
  2    for i in range(1, x+1):
  3        if x % i == 0:
  4            print(i)
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q27.py"
Enter a number: 50
1
2
5
10
25
50
$
```

Q28)

```
q28.py    ×

q28.py > ...
  1    from math import *
  2    x=[9,41,12,3,74,15]
  3    largest=-inf
  4    for i in x:
  5        if i > largest:
  6            largest = i
  7    print(largest)
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q28.py"
74
$
```

Q29)

```
q29.py ×

q29.py > ...
  1    from math import *
  2    x=[9,41,12,3,74,15]
  3    smallest = inf
  4    for i in x:
  5        if i < smallest:
  6            smallest = i
  7    print(smallest)

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q29.py"
3
$ 
```

Q30)

```
q30.py ×

q30.py > ...
  1    x = [9, 41, 12, 3, 74, 15]
  2    count = sum = avg = 0
  3    for i in x:
  4        count = count + 1
  5        sum = sum + i
  6    avg = sum/count
  7    print(count)
  8    print(sum)
  9    print(avg)

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q30.py"
6
154
25.666666666666668
$ 
```

Q31)

```
q31.py    X

q31.py > ...
  1    x=[9,41,12,3,74,15]
  2    for i in x:
  3        if i > 20:
  4            print(i)
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q31.py"
41
74
$ █
```

Q32)

```
q32.py    X

q32.py > ...
  1    x=[9,41,12,3,74,15]
  2    res = []
  3    for i in x:
  4        if i > 20:
  5            res.append(i)
  6    print(res)
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q32.py"
[41, 74]
$ █
```

Q33)

```
q33.py    ×

q33.py > ...
  1   import numpy as np
  2   x = [9,41,12,3,74,15]
  3   y= np.zeros(len(x))
  4   for i in range(len(x)):
  5       if x[i] > 20:
  6           y[i] = x[i]
  7   print(y)
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
$ /usr/bin/python3 "/home/190905494/Documents/190905494/Week 1/q33.py"
[  0.  41.   0.   0.  74.   0.]
$ ▮
```