Python Day 2

Identifiers

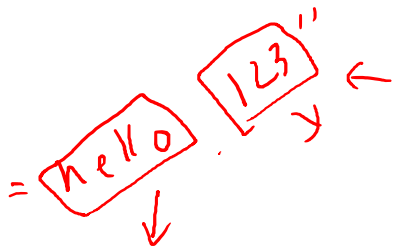
- hello
- _
- _one
- 1try
- #good
- make1
- another#
- as

Keywords

- False
- None
- True
- and
- as
- assert
- break
- class
- continue
- def
- del
- elif
- else
- except
- finally
- for
- from
- global
- if
- import
- in
- is
- lambda
- nonlocal
- not
- or
- pass
- raise
- return
- try
- while
- with
- yield

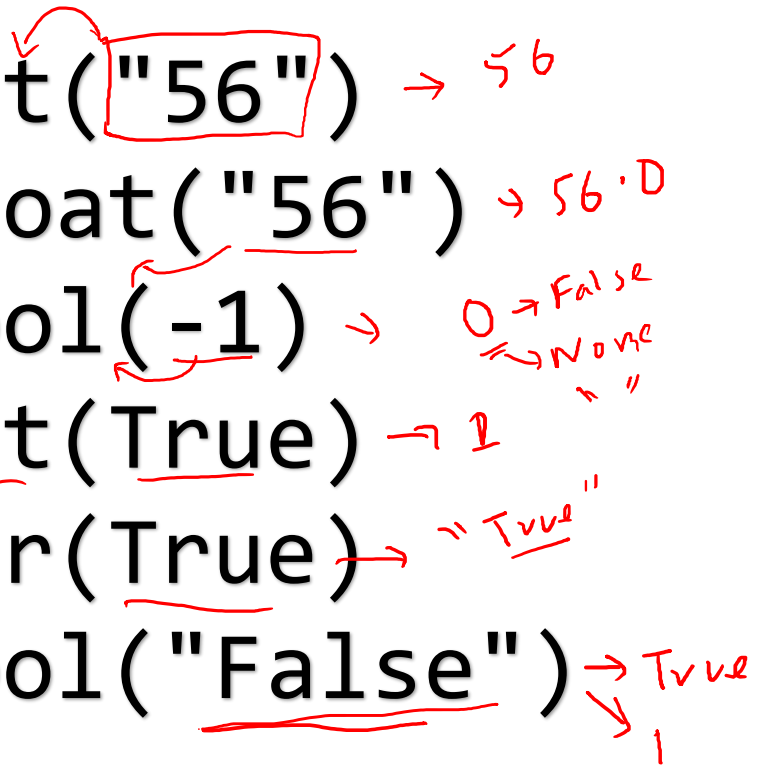
Data Types

- str
- int, float
- list, tuple
- dict
- set
- bool



Converting One Type into Another

- `int("56")`
- `float("56")`
- `bool(-1)`
- `int(True)`
- `str(True)`
- `bool("False")`



cloth.py

```
1  r_width = 140
2  price_per_metre = 5
3
4  w_height = input('Enter the height of the w (cm): ')
5  w_width = input('Enter the width of the w (cm): ')
6
7  c_width = float(w_width) * 0.75 + 20
8  c_length = float(w_height) + 15
9
10 widths = c_width / r_width
11 total_length = c_length * widths
12
13 total_length = (total_length * 2) / 10
14
15 price = total_length * price_per_metre
16
17 print(f"You need {total_length:.2f} meters of cloth for {price:.2f}")
```

Conditional Statements

```
1  x = 5
2  y = 6
3
4  if x%2 == 0 :
5      print('x is even')
6  else :
7      print('x is odd')
8
9  if x < y:
10     print('x is less than y')
11 elif x > y:
12     print('x is greater than y')
13 else:
14     print('x and y are equal')
```

Errors!!!

```
1  r_width = 140
2  price_per_metre = 5
3
4  w_height = input('Enter the height of the w (cm): ')
5      w_width = input('Enter the width of the w (cm): ')
6
7  c_width = (w_width * 0.75) + 20
8
9  if c_length < r_width:
10     total_length = (c_width * 2) / 100
11 elif c_width > r_width:
12     if extra_material < (r_width / 2):
13     widths +=1
14 else:
15     total_length = (c_length * 2) / 100
16
17 print('total:', round(total_length, 2))
18
19 price = total_length * price_per_metre
20 print('price:', round(price, 2))
```

cloth3.py (01)

```
1  r_width = 140
2  price_per_metre = 5
3
4  w_height = input('Enter the height of the w (cm): ')
5  w_width = input('Enter the width of the w (cm): ')
6
7  print()
8
9  c_width = (float(w_width) * 0.75) + 20
10 print('width:', round(c_width, 2))
11 c_length = float(w_height) + 15
12 print('height:', round(c_length, 2))
13
14
15 print('shorter?:', c_length < r_width)
16 print('wider?:', c_width > r_width)
```

cloth3.py (02)

```
18 if c_length < r_width:
19     total_length = (c_width * 2) / 100
20 elif c_width > r_width:
21     widths = int(c_width/r_width)
22     extra_material = c_width%r_width
23     if extra_material < (r_width / 2):
24         widths +=1
25     if extra_material > (r_width / 2):
26         widths +=2
27     print('widths:', widths)
28     total_length = (c_length * widths) / 100
29 else:
30     total_length = (c_length * 2) / 100
31
32 print('total:', round(total_length, 2))
33
34 price = total_length * price_per_metre
35 print('price:', round(price, 2))
```

int(3.33) → 3

round(3.33, 0)

3.5 → 3 3.0

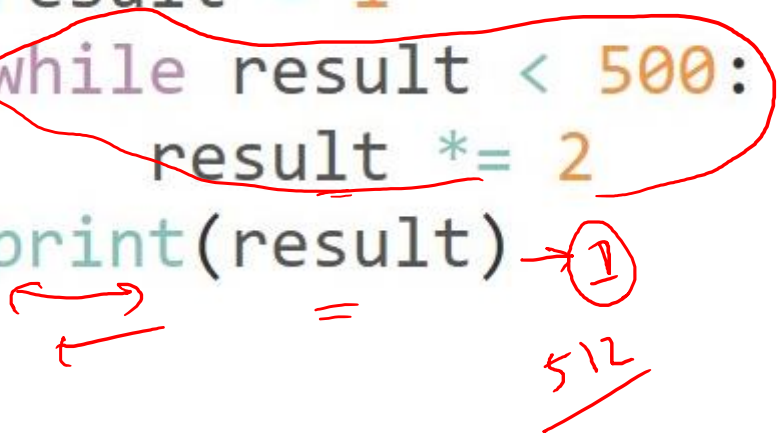
Loop (while)

```
1 result = 1
2 while result < 500:
3     result *= 2
4     print(result)
```

2
4
8
16
32
64
128
256
512

Loop (while)

```
1 result = 1
2 while result < 500:
3     result *= 2
4 print(result)
```

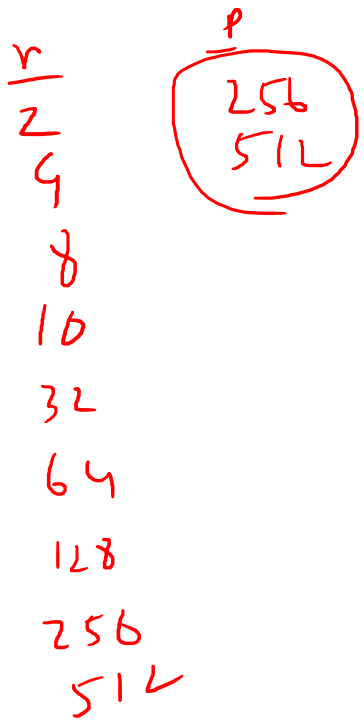


break

```
1 result = 1
2 while True:
3     result *= 2
4     print(result)
5     if (result > 500):
6         break
```

continue

```
1 result = 1
2 while result < 500:
3     result *= 2
4     if result < 200:
5         continue
6     print(result)
```



break - continue

```
1 result = 1
2 while True:
3     result *= 2
4     if (result > 500):
5         break
6     if result < 200:
7         continue
8     print(result)
```

256

r
2
4
8
16
32
64
128
256
512

p

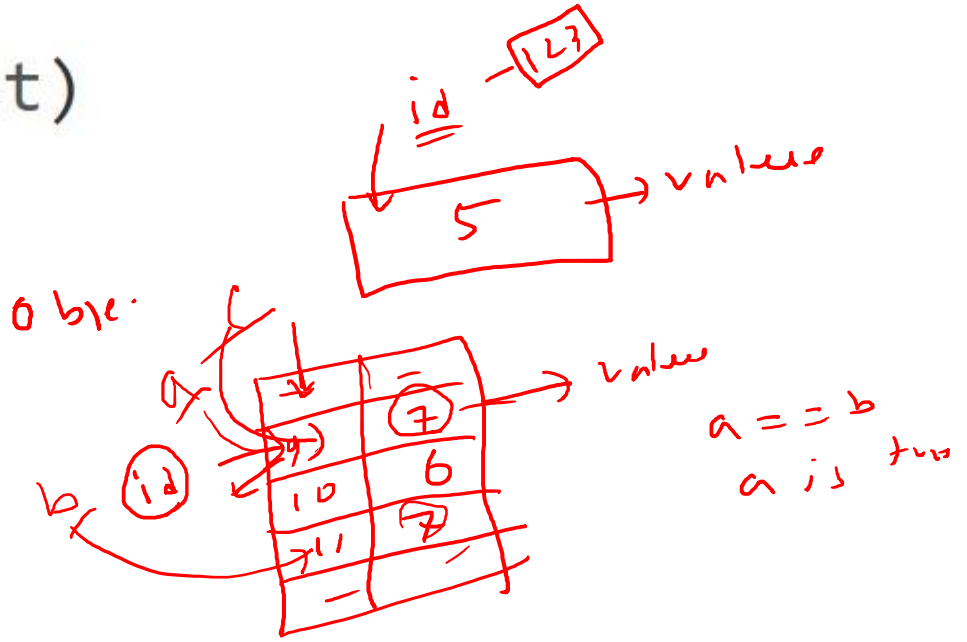
256

Loop (for)

```
1 for i in range(5):
2     print(i)
3
4 for i in range(5):
5     print(2 ** i)
6
7 for i in range(5):
8     print(i % 2 == 0)
```

Loop (for)

```
1 largest = None
2 print('Before:', largest)
3 for i in [3, 41, 12, 9, 74, 15]:
4     if largest is None or i > largest :
5         largest = i
6     print('Loop:', i, largest)
7 print('Largest:', largest)
```



list

```
1  # list is a sequence
2  strings = ['hello', 'world']
3  numbers = [17, 123]
4  empty = []
5
6
7  # lists are mutable
8  numbers = [17, 123]
9  numbers[1] = 5
10 print(numbers)
11
12 # traversing a list
13
14 for i in numbers:
15     print(i)
16
17 for i in range(len(numbers)):
18     print(numbers[i])
```

list

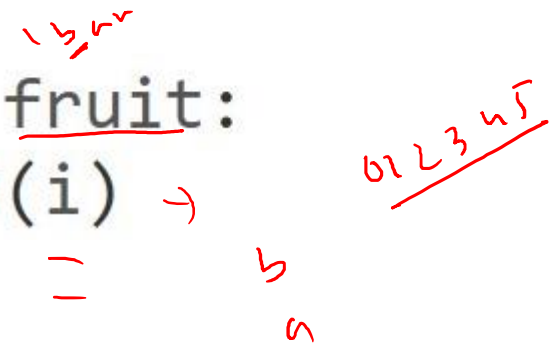
```
1  t1 = [2, 9, 4]
2  t2 = [3, 1]
3
4  t1.append(6)
5  print(t1)
6
7  t1.extend(t2)
8  print(t1)
9
10 t1.sort()
11 print(t1)
12
13 x = t1.pop(2)
14 print(t1, x)
15
16 t1.remove(6)
17 print(t1)
```

dir(

help(=)

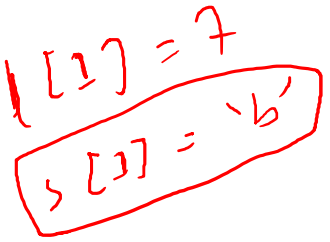
string

```
1 fruit = 'banana'
2 print(fruit[1])
3 print(fruit[-3])
4
5
6 for i in fruit:
7     print(i)
```



in

```
1 l = [1, 4, 6, 8]
2 s = "hello world"
3
4 print(4 in l)
5 print([4, 8] in l)
6 print([4, 6] in l)
7 print('h' in s)
8 print('hw' in s)
9 print('he' in s)
```



4 6 8

4 8 6

String methods

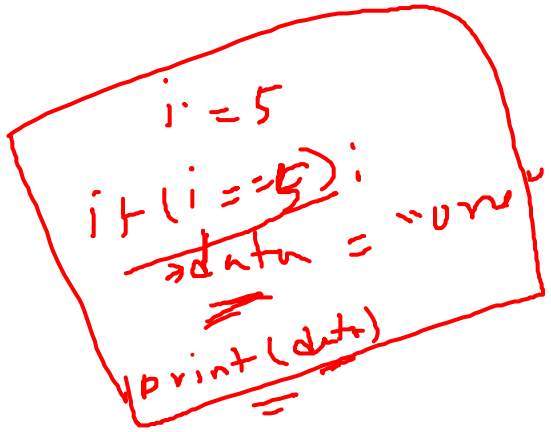
```
1 print("hello world".split(" "))
2 print(",".join(['a', 'b', "c"]))
3 print("  one".strip())
4 print("UPPER lower".upper())
5 print("UPPER lower".lower())
6 print("one two three".replace(" ", ","))
7 print("one two three".find("two"))
8 print("one two three".find("four"))
```

String methods

```
11 print("as12A".isalnum())
12 print("aAa".isalpha())
13 print("123".isdecimal())
14 print("123".isdigit())
15 print("123".isnumeric())
16 print(u"½¼".isnumeric())
17 print(" ".isspace())
18 print("hello".islower())
19 print("HELLO".isupper())
```

file

```
1  f = open("test.txt", "r")
2  data = f.read()
3  print(data)
4  f.close()
5
6  f = open("test.txt", "w")
7  f.write("ok12")
8  f.close()
9
10 with open("test.txt") as f:
11     data = f.read()
12     print(data)
```



file

in1.txt

```
1,almasud,Abdullah Al Masud
2,rimon,Rimol Ali
3,niloy,Niloy Roy
4,sourov,Sourov Deb Sharma
5,sathi,Sathi Rani Roy
```

Out1.txt

```
1-Abdullah Al Masud
2-Rimol Ali
3-Niloy Roy
4-Sourov Deb Sharma
5-Sathi Rani Roy
```