Input Reading and Output Formatting in Python

January 17, 2023

1 Input Reading

[1]:
```
input() # reads data from the user in the form of a string
```

```
45
```

[1]:
```
'45'
```

[2]:
```
_input = input()
print(_input)
print(type(_input))
```

```
497
497
<class 'str'>
```

[10]:
```
a = input()
b = input()
print(a + b)
```

```
57
46
5746
```

[11]:
```
57 + 46
```

[11]:
```
103
```

[12]:
```
'57' + '46'
```

[12]:
```
'5746'
```

[13]:
```
int('57') + int('46')
```

[13]:
```
103
```

[14]:
```
a = int(input()) # reads an integer
b = int(input()) # reads an integer
print(a + b)
```

```
10
320
330
```

[16]:
```
f1 = input()
f2 = input()
print(f1 + f2)
```

```
10.2
2.3
10.22.3
```

[18]:
```
f1 = float(input()) # reads a point value
f2 = float(input()) # reads a point value
print(f1 + f2)
```

```
10.2
2.3
12.5
```

[17]:
```
first_name = input() # string reading
last_name = input() # string reading
print("Full name is", first_name + " " + last_name)
```

```
Pavan
B
Full name is Pavan B
```

[20]:
```
a = int(input())
b = int(input())
print(a + b)
```

```
10 20
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_11568\1508896596.py in <cell line: 1>()
----> 1 a = int(input())
      2 b = int(input())
      3 print(a + b)

ValueError: invalid literal for int() with base 10: '10 20'
```

[21]:
```
int('147') ** 2
```

[21]: 21609

[22]:
```
int('147s') ** 2
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_11568\1642236497.py in <cell line: 1>()
----> 1 int('147s') ** 2

ValueError: invalid literal for int() with base 10: '147s'
```

[23]:
```
a, b = map(int, input().split())
print(a + b)
```

```
10 20
30
```

[24]:
```
a, b, c = map(int, input().split())
print(a + b + c)
```

```
10 20 30
60
```

[ ]:
```
a, b, c = map(float, input().split())
print(a + b + c)
```

[ ]:
```
a, b, c = map(str, input().split())
print(a + b + c)
```

[29]:
```
a, b = map(int, input().split())
print(a + b)
```

```
10 20 30
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_11568\2026927438.py in <cell line: 1>()
----> 1 a, b = map(int, input().split())
      2 print(a + b)

ValueError: too many values to unpack (expected 2)
```

[30]:
```
a, b, c = map(int, input().split())
print(a + b)
```

```
10 20
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_11568\1175290515.py in <cell line: 1>()
----> 1 a, b, c = map(int, input().split())
```

```
      2 print(a + b)

ValueError: not enough values to unpack (expected 3, got 2)
```

[25]:
```
_string = 'this is python split'
print(_string.split())
```

```
['this', 'is', 'python', 'split']
```

[26]:
```
_string = 'this,is,python,split'
print(_string.split(','))
```

```
['this', 'is', 'python', 'split']
```

[27]:
```
_string = 'this is python split'
print(_string.split('i'))
```

```
['th', 's ', 's python spl', 't']
```

[28]:
```
a, b, c = 10, 12.2, "hello"
print(a)
print(b)
print(c)
```

```
10
12.2
hello
```

[31]:
```
a = int(input("Enter the value of a: "))
b = int(input("Enter the value of b: "))
print(a + b)
```

```
Enter the value of a: 10
Enter the value of b: 20
30
```

[32]:
```
a, b = map(int, input("Enter the values of a and b: ").split())
print(a + b)
```

```
Enter the values of a and b: 10 20
30
```

2 Output Formatting

- Old % formatting (format specifiers)
- Using .format() method on strings
- f strings

[37]:
```
a = int(input("Enter the value of a: "))
b = int(input("Enter the value of b: "))
print("Sum of the values entered is:", a + b)
```

```
Enter the value of a: 10
Enter the value of b: 20
Sum of the values entered is: 30
```

[38]:
```
a = int(input("Enter the value of a: "))
b = int(input("Enter the value of b: "))
print("Sum of", a, "and", b, "is:", a + b)
# Sum of 10 and 20 is 30.
```

```
Enter the value of a: 10
Enter the value of b: 20
Sum of 10 and 20 is: 30
```

[39]:
```
# using % formatting
a = int(input("Enter the value of a: "))
b = int(input("Enter the value of b: "))
print("Sum of %d and %d is %d"%(a, b, a + b))
# Sum of 10 and 20 is 30.
```

```
Enter the value of a: 10
Enter the value of b: 20
Sum of 10 and 20 is 30
```

[40]:
```
# using .format()
a = int(input("Enter the value of a: "))
b = int(input("Enter the value of b: "))
print("Sum of {} and {} is {}".format(a, b, a + b))
# Sum of 10 and 20 is 30.
```

```
Enter the value of a: 10
Enter the value of b: 20
Sum of 10 and 20 is 30
```

[43]:
```
# Using f"" strings
a = int(input("Enter the value of a: "))
b = int(input("Enter the value of b: "))
print(f"Sum of {a} and {b} is {a + b}")
# Sum of 10 and 20 is 30.
```

```
Enter the value of a: 10
Enter the value of b: 20
Sum of 10 and 20 is 30
```

[34]:
```
print(10, 20, 30, 40)
```

```
10 20 30 40
```

[35]:
```
print(10, 20, 30, 40, sep='-')
```

```
10-20-30-40
```

[36]:
```
print(10, 20, 30, 40, sep='pavan')
```

```
10pavan20pavan30pavan40
```

[46]:
```
a = 10
b = 3
c = 10 / 3
print("%.2f"%c)
```

```
3.33
```

3 Adjusting digits after point in floating point values

[48]:
```
a = 10
b = 3
c = 10 / 3
print("{:.4f}".format(c))
```

```
3.3333
```

[49]:
```
a = 10
b = 3
c = 10 / 3
print(f"{c:.4f}")
```

```
3.3333
```

4 Programs

[51]:
```
# inches to centimeters
inches = int(input())
print("%.2f"%(inches * 2.54))
```

```
77
195.58
```

[53]:
```
# capacity
t = int(input())
s = int(input())
b = int(input())
cap = t * s * b
print("%d KB"%cap)
```

```
15
20
```

```
30
9000 KB
```

[54]:
```python
# capacity
t = int(input())
s = int(input())
b = int(input())
cap = t * s * b
print("{} KB".format(cap))
```

```
15
20
30
9000 KB
```

[55]:
```python
# average of two numbers
a, b = map(int, input().split())
c = (a + b) / 2
print("Average of {} and {} is: {:.2f}".format(a, b, c))
```

```
12 13
Average of 12 and 13 is: 12.50
```