

## 9. PYTHON – INPUT AND OUTPUT

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### 9. Input and Output

#### 1. Input and output

- ✓ Input represents data given to the program.
- ✓ Output represents the result of the program.

#### 2. Hard coding

- ✓ Till now we have executed examples by hard coding values to variables
- ✓ In this chapter we will learn how to take values at run time.

<b>Program Name</b>	Hard coding the values demo1.py
	<pre>age = 16 print(age)</pre>
<b>output</b>	16

- ✓ Based on requirement we can take values at runtime or dynamically as well.

<pre>Please enter the age: 16 Entered value is: 16</pre>
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### 3. input(p) function

- ✓ **input(p)** is a predefined function.
- ✓ This function accepts input from the keyboard.
- ✓ This function takes a value from keyboard and returns it as a string type.
- ✓ Based on requirement we can convert from string to other types.

**Program Name**      Printing name by taking value at run time  
demo2.py

```
name = input("Enter the name:")  
print("You entered name as:", name)
```

**Run**                  py demo2.py

**Output**

```
Enter the name: Daniel  
You entered name as: Daniel
```

**Program Name**      Printing name and age by taking value at run time  
demo3.py

```
name = input("Enter the name: ")  
age = input("Enter the age: ")  
  
print("You entered name as: ", name)  
print("You entered age as: ", age)
```

**Run**                  py demo3.py

**Output**

```
Enter the name: Prasad  
Enter the age: 16
```

You entered name as: Prasad  
You entered age as: 16

**Program Name**      Checking return type value for **input()** function  
demo4.py

```
value = input("Enter the value ")  
print("Entered value as: ", value)  
print("type is: ", type(value))
```

**Run**                  py demo4.py

**Output**

Enter the value: **Daniel**  
Entered value as: **Daniel**  
type is: <class '**str**'>

**Run**                  py demo4.py

**Output**

Enter the value:**123**  
Entered value as: **123**  
type is: <class '**str**'>

**Run**                  py demo4.py

**Output**

Enter the value:**123.456**  
Entered value as: **123.456**  
type is: <class '**str**'>

### 4. Convert from string to int

- ✓ We can convert the string value into int value.
- ✓ `int(p)` is a predefined function
- ✓ This function converts to int data type.

**Program**      Converting from string to int data type  
**Name**          demo5.py

```
a = "123"  
print(a)  
print(type(a))
```

```
b = int(a)  
print(b)  
print(type(b))
```

**Output**

```
123  
<class 'str'>  
123  
<class 'int'>
```

**Program Name**      Converting from string to int data type  
demo7.py

```
a = input("Enter a value:")  
print("Your value is:", a)  
print("data type is:", type(a))  
  
b = int(a)  
print("After converting the value is:", b)  
print("data type is:", type(b))
```

**Run**                  py demo5.py

**Output**

```
Enter a value:123  
Your value is: 123  
data type is: <class 'str'>  
After converting the value is: 123  
data type is: <class 'int'>
```

### 5. Convert from string type to other type

- ✓ We can convert the string value into float value.
- ✓ float(p) is a predefined function
- ✓ This function converts to float data type.

**Program**      Converting from string to float data type  
**Name**          demo8.py

```
a = "123.99"  
print(a)  
print(type(a))
```

```
b = float(a)  
print(b)  
print(type(b))
```

**Output**

```
123.99  
<class 'str'>  
123.99  
<class 'float'>
```

**Program Name**      Converting from string to float data type  
demo9.py

```
a = input("Enter a value:")  
print("Your value is:", a)  
print("data type is:", type(a))  
  
b = float(a)  
print("After converting the value is:", b)  
print("data type is:", type(b))
```

**Run**                  py demo9.py

**Output**

```
Enter a value:123.99  
Your value is: 123.99  
data type is: <class 'str'>  
After converting the value is: 123.99  
data type is: <class 'float'>
```



### 6. Convert float data type value into int data type

- ✓ `int(p)` is predefined function in python.
- ✓ This function converts value into int data type

**Program Name**      Converting from float to int data type  
demo10.py

```
a = 10000.45  
print(a)  
print(type(a))
```

```
b = int(a)  
print(b)  
print(type(b))
```

**Output**

```
10000.45  
<class 'float'>  
10000  
<class 'int'>
```

**Program** + operator concatenates/joins two string values  
**Name** demo11.py

```
p1 = input("Enter First product price:")  
p2 = input("Enter Second product price:")
```

```
print("Total price is:", p1+p2)
```

**Run** py demo11.py

**Output**

```
Enter First product price:111  
Enter Second product price:222  
Total price is: 111222
```

**Program Name**      Converting string to int and perform + operator  
demo12.py

```
p1 = input("Enter First product price:")  
p2 = input("Enter Second product price:")
```

```
a = int(p1)  
b = int(p2)
```

```
print("Total price is:", a+b)
```

**Run**                  py demo12.py

**Output**

```
Enter First product price:111  
Enter Second product price:222  
Total price is: 333
```

### 7. List out few type conversion functions in python

1. `int(p)` – converts other data type into integer type
2. `float(p)` – converts other data type into float type
3. `str(p)` – converts other data type into a string.
4. `bool(p)` – converts other data type into boolean type
5. `list(p)` – converts sequence to list
6. `tuple(p)` – converts sequence to a tuple.
7. `set(p)` – converts sequence to set.
8. `dict(p)` – converts a tuple of order (key, value) into a dictionary.