# Python Identifiers and Reserved Words

## Identifiers

In Python, a **name used in a program** is called an *identifier*. It can be the name of a:

* Class
* Function
* Module
* Variable

Example:

a = 10

### Rules for Defining Identifiers in Python

1. **Allowed Characters**  
   Identifiers can only contain:
   * Alphabet symbols (a–z, A–Z)
   * Digits (0–9)
   * Underscore symbol \_
2. ❌ Using any other symbol like $ will result in a syntax error.

cash = 10 # Valid  
ca$h = 20 # Invalid

1. **Should Not Start with a Digit**

123total = 50 # Invalid  
total123 = 50 # Valid

1. **Case Sensitivity**  
   Identifiers in Python are case-sensitive.

total = 10  
TOTAL = 999  
  
print(total) # Output: 10  
print(TOTAL) # Output: 999

1. **Cannot Use Reserved Words**  
   Reserved words in Python cannot be used as identifiers.

def = 10 # Invalid

1. **No Length Limit**  
   There is no maximum length for an identifier, but it's best to avoid excessively long names.
2. **Dollar Symbol Not Allowed**  
   $ is not permitted in Python identifiers.
3. **Identifiers Starting with Underscore**
   * \_identifier: Indicates *private*.
   * \_\_identifier: Indicates *strongly private*.
   * \_\_identifier\_\_: Indicates a *language-defined special name* (also known as *magic methods*).
   * Example:

\_\_add\_\_ # Magic method used for operator overloading

### Valid and Invalid Identifiers

| Identifier | Validity |
| --- | --- |
| 123total | ❌ Invalid |
| total123 | ✅ Valid |
| java2share | ✅ Valid |
| ca$h | ❌ Invalid |
| \_abc\_abc\_ | ✅ Valid |
| def | ❌ Invalid (reserved word) |
| if | ❌ Invalid (reserved word) |

## Reserved Words

In Python, certain words are **reserved** to represent specific meanings or functionalities. These are known as **reserved words** or **keywords**.

There are 33 reserved words in Python (as of version 3.x):

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

### Notes:

1. All reserved words contain **only alphabet characters**.  
   2. All are in **lowercase**, *except*:
   * True
   * False
   * None

a = true # Invalid  
a = True # Valid

### Checking Reserved Words in Python

You can view the list of reserved words using the keyword module:

import keyword  
print(keyword.kwlist)

Output:

['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']