

INPUT, OUTPUT AND ERROR STREAMS

STREAMS IN PYTHON

- The standard input device is the keyboard.
- The standard output device is the monitor.
- The standard error device is the monitor.
- These standard devices are implemented as files and are called as standard streams
- stdin- Standard input stream
- stdout – standard output stream.
- stderr – standard error stream.
- sys module has to be imported for using these streams.

SYNTAX

`import sys`

`sys.stdin.read()` – receive the input

`sys.stdout.write()` – display the output

`sys.stderr.write()` – display the error

Example

- To check if division is possible

$32/4$ – division is possible

$28/0$ – division is not possible

Example

```
import sys
sys.stdout.write("Enter the first number")
a= int(sys.stdin.readline())
sys.stdout.write("Enter the second number")
b = int(sys.stdin.readline())
if b==0:
    sys.stderr.write("Cannot divide by 0")
else:
    sys.stdout.write("Division is possible")
```

Example

```
import sys
sys.stdout.write("Enter the name of the file to output")
fname = sys.stdin.readline()
F= open(fname.strip(), 'r')
while True:
    ch=F.read(1)
    if ch=="":
        sys.stderr.write("End of file reached")
        break
    else:
        sys.stdout.write(ch)
F.close()
```

Exceptions

<https://docs.python.org/3/library/exceptions.html#builtin-exceptions>

Concrete exceptions

The following exceptions are the exceptions that are usually raised.

exception EOFError - Raised when the [input\(\)](#) function hits an end-of-file condition (EOF) without reading any data. (N.B.: the `io.IOBase.read()` and [io.IOBase.readline\(\)](#) methods return an empty string when they hit EOF.)

exception ImportError - Raised when the [import](#) statement has troubles trying to load a module. Also raised when the “from list” in `from ... import` has a name that cannot be found.

***exception* IndexError** - Raised when a sequence subscript is out of range. (Slice indices are silently truncated to fall in the allowed range; if an index is not an integer, [TypeError](#) is raised.)

***exception* KeyError** - Raised when a mapping (dictionary) key is not found in the set of existing keys.

exception MemoryError- Raised when an operation runs out of memory but the situation may still be rescued (by deleting some objects). The associated value is a string indicating what kind of (internal) operation ran out of memory. Note that because of the underlying memory management architecture.

exception NameError- Raised when a local or global name is not found. This applies only to unqualified names. The associated value is an error message that includes the name that could not be found.