

// Already known – random & math

```
import random
random.randint(1, 10)    # random int
random.choice(lst)     # random element
random.shuffle(lst)    # shuffle in place

import math
math.sqrt(16)          # 4.0
math.floor(3.7)        # 3
math.ceil(3.2)         # 4
math.pi                # 3.14159...
math.pow(2, 8)         # 256.0
```

// datetime

```
from datetime import datetime, date, timedelta

datetime.now()         # date + time
date.today()           # date only
dt.strftime("%Y-%m-%d") # -> string
datetime.strptime(s,fmt) # string -> dt
date.today() + timedelta(days=7)
end - start            # timedelta
```

// statistics

```
import statistics

statistics.mean(lst)   # average
statistics.median(lst) # middle value
statistics.mode(lst)   # most frequent
statistics.multimode(lst) # all most frequent
statistics.stdev(lst)  # standard deviation
```

// your own modules

```
# utils.py – your module
def greet(name):
    return f"Hello, {name}."

if __name__ == '__main__':
    print(greet('Raven')) # direct only

# main.py – import it
import utils                # utils.greet()
from utils import greet     # greet() directly
# module must be in the same folder
```

// time

```
import time

time.sleep(2)           # pause 2s
time.sleep(0.5)        # pause 0.5s

start = time.perf_counter()
# ... code ...
end = time.perf_counter()
print(end - start)     # elapsed
```

// collections

```
from collections import Counter, defaultdict

Counter(lst)            # count all
counter[key]            # 0 if missing
counter.most_common(n)  # top n

defaultdict(list)      # missing -> []
defaultdict(int)       # missing -> 0
defaultdict(set)       # missing -> set()
```

// string

```
import string

string.ascii_lowercase # a-z
string.ascii_uppercase # A-Z
string.ascii_letters   # a-z + A-Z
string.digits           # 0123456789
string.punctuation     # all punctuation
```

// import patterns

```
import math                # math.sqrt()
from math import sqrt      # sqrt()
from datetime import datetime, date
from utils import greet, is_active

# standard library – no pip needed
# your modules – same folder required
```