```
C:\Users\brand\OneDrive - stevens.edu\CPE 322>pip install jdcal
Collecting jdcal
  Downloading jdcal-1.4.1-py2.py3-none-any.whl (9.5 kB)
Installing collected packages: jdcal
Successfully installed jdcal-1.4.1

[notice] A new release of pip available: 22.2.1 -> 23.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\brand\OneDrive - stevens.edu\CPE 322>pip install astral
Collecting astral
  Downloading astral-3.2-py3-none-any.whl (38 kB)
Requirement already satisfied: tzdata in c:\users\brand\appdata\local\programs\pyth
Installing collected packages: astral
Successfully installed astral-3.2

[notice] A new release of pip available: 22.2.1 -> 23.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\brand\OneDrive - stevens.edu\CPE 322>pip install geopy
Collecting geopy
  Downloading geopy-2.4.0-py3-none-any.whl (125 kB)
     ------------------------------------- 125.4/125.4 kB 3.7 MB/s eta 0:00:00
Collecting geographiclib<3,>=1.52
  Downloading geographiclib-2.0-py3-none-any.whl (40 kB)
     ------------------------------------- 40.3/40.3 kB 1.9 MB/s eta 0:00:00
Installing collected packages: geographiclib, geopy
Successfully installed geographiclib-2.0 geopy-2.4.0

[notice] A new release of pip available: 22.2.1 -> 23.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\brand\OneDrive - stevens.edu\CPE 322>cd iot

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot>cd *3

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py julian.py
Calendar Date: 2023-10-22
Julian Date: 2460239.5
Modified Julian Date: 60239.0

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py date_example.py
Date: 2023-10-22
Date: 10-22-23
Day of Week: Sunday
Month: October
Year: 2023
51 days after the first day of classes
53 days before the last day of classes
```

```
C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py datetime_example.py
2023-10-22 14:58:11.059918
2023-10-22 14:58:11.059918
2023-10-22 18:58:11.062056
1698001091.0620568
Sun Oct 22 14:58:11 2023
2023-10-22 14:58:11.068686
2023-10-22 18:58:11.069326

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py time_example.py
Sun Oct 22 14:58:13 2023
Sun Oct 22 14:58:23 2023

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py sun.py 'New York'
Traceback (most recent call last):
  File "C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3\sun.py", line 6, in <
    city = lookup(city_name, database())
  File "C:\Users\brand\AppData\Local\Programs\Python\Python310\lib\site-packages\astral
    raise KeyError(f"Unrecognised name - {name}")
KeyError: "Unrecognised name - 'New"

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py sun.py "New York"
Information for New York/USA

Timezone: US/Eastern
Latitude: 40.72; Longitude: -74.00

Dawn:    2023-10-22 06:46:27.821959-04:00
Sunrise: 2023-10-22 07:14:52.013261-04:00
Noon:    2023-10-22 12:40:33-04:00
Sunset:  2023-10-22 18:05:26.785163-04:00
Dusk:    2023-10-22 18:33:49.406297-04:00
```

```
C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py moon.py
2023-10-22 Moon Phase: 7
2023-10-23 Moon Phase: 8
2023-10-24 Moon Phase: 9
2023-10-25 Moon Phase: 10
2023-10-26 Moon Phase: 11
2023-10-27 Moon Phase: 12
2023-10-28 Moon Phase: 13
2023-10-29 Moon Phase: 14
2023-10-30 Moon Phase: 15
2023-10-31 Moon Phase: 16
2023-11-01 Moon Phase: 17
2023-11-02 Moon Phase: 18
2023-11-03 Moon Phase: 19
2023-11-04 Moon Phase: 20
2023-11-05 Moon Phase: 21
2023-11-06 Moon Phase: 22
2023-11-07 Moon Phase: 22
2023-11-08 Moon Phase: 23
2023-11-09 Moon Phase: 24
2023-11-10 Moon Phase: 25
2023-11-11 Moon Phase: 26
2023-11-12 Moon Phase: 27
2023-11-13 Moon Phase: 0
2023-11-14 Moon Phase: 1
2023-11-15 Moon Phase: 1
2023-11-16 Moon Phase: 2
2023-11-17 Moon Phase: 4
2023-11-18 Moon Phase: 5
2023-11-19 Moon Phase: 6
2023-11-20 Moon Phase: 7

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py coordinates.py "SC Williams Library"
Berkeley County Library, US 52, Moncks Corner, Berkeley County, South Carolina, 44600, United States
(33.1879204, -79.9998833)

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py address.py "40.74480675, -74.02532862031404"
Stevens Institute of Technology, Hoboken Newport Walkway- Hudson River Waterfront Walkway, Hoboken, Hudson County, New Jersey, 07030, United States
(40.744809599999996, -74.0252392276461)
```

```
C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py cpu.py
Traceback (most recent call last):
  File "C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3\cpu.py", line 2, in <module>
    import psutil
ModuleNotFoundError: No module named 'psutil'

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>pip install psutil
Collecting psutil
  Downloading psutil-5.9.6-cp37-abi3-win_amd64.whl (252 kB)
     ---------------------------------------- 252.3/252.3 kB 16.1 MB/s eta 0:00:00
Installing collected packages: psutil
Successfully installed psutil-5.9.6

[notice] A new release of pip available: 22.2.1 -> 23.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py cpu.py
The number of physical cores =  8
The number of logical CPUs =  16
The utilization per second as a percentage for each CPU
[11.6, 3.1, 0.0, 1.5, 0.0, 15.6, 0.0, 0.0, 0.0, 0.0, 1.5, 0.0, 1.6, 0.0, 1.5, 0.0]
[9.0, 4.6, 0.0, 0.0, 4.8, 6.2, 0.0, 3.1, 7.8, 1.6, 1.6, 0.0, 1.6, 3.1, 0.0, 0.0]
[0.0, 0.0, 4.8, 3.1, 1.5, 1.6, 1.5, 3.1, 0.0, 0.0, 1.5, 0.0, 3.0, 0.0, 1.6, 1.5]
[13.2, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 3.1]
[0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0]
[1.6, 0.0, 3.1, 1.5, 1.5, 1.6, 1.6, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 1.5, 1.5, 1.6]
[0.0, 0.0, 0.0, 0.0, 1.6, 0.0, 1.5, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 1.5]
[0.0, 0.0, 1.6, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 1.6, 0.0, 0.0, 1.6, 1.6, 0.0, 0.0]
[0.0, 0.0, 10.8, 1.5, 4.6, 0.0, 9.2, 1.6, 1.6, 3.1, 4.6, 0.0, 1.5, 4.6, 4.7, 1.6]
[3.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 1.6, 0.0, 0.0, 0.0, 0.0]

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py battery.py
sbattery(percent=100, secsleft=<BatteryTime.POWER_TIME_UNLIMITED: -2>, power_plugged=True)

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>py documentstats.py document.txt
Word Count: 1343
Top Ten Words: [('our', 26), ('their', 20), ('has', 20), ('he', 19), ('them', 15), ('these', 13), ('have', 11), ('we', 11), ('us', 11), ('people', 10)]

C:\Users\brand\OneDrive - stevens.edu\CPE 322\iot\lesson3>
```