

Weekly Test 2

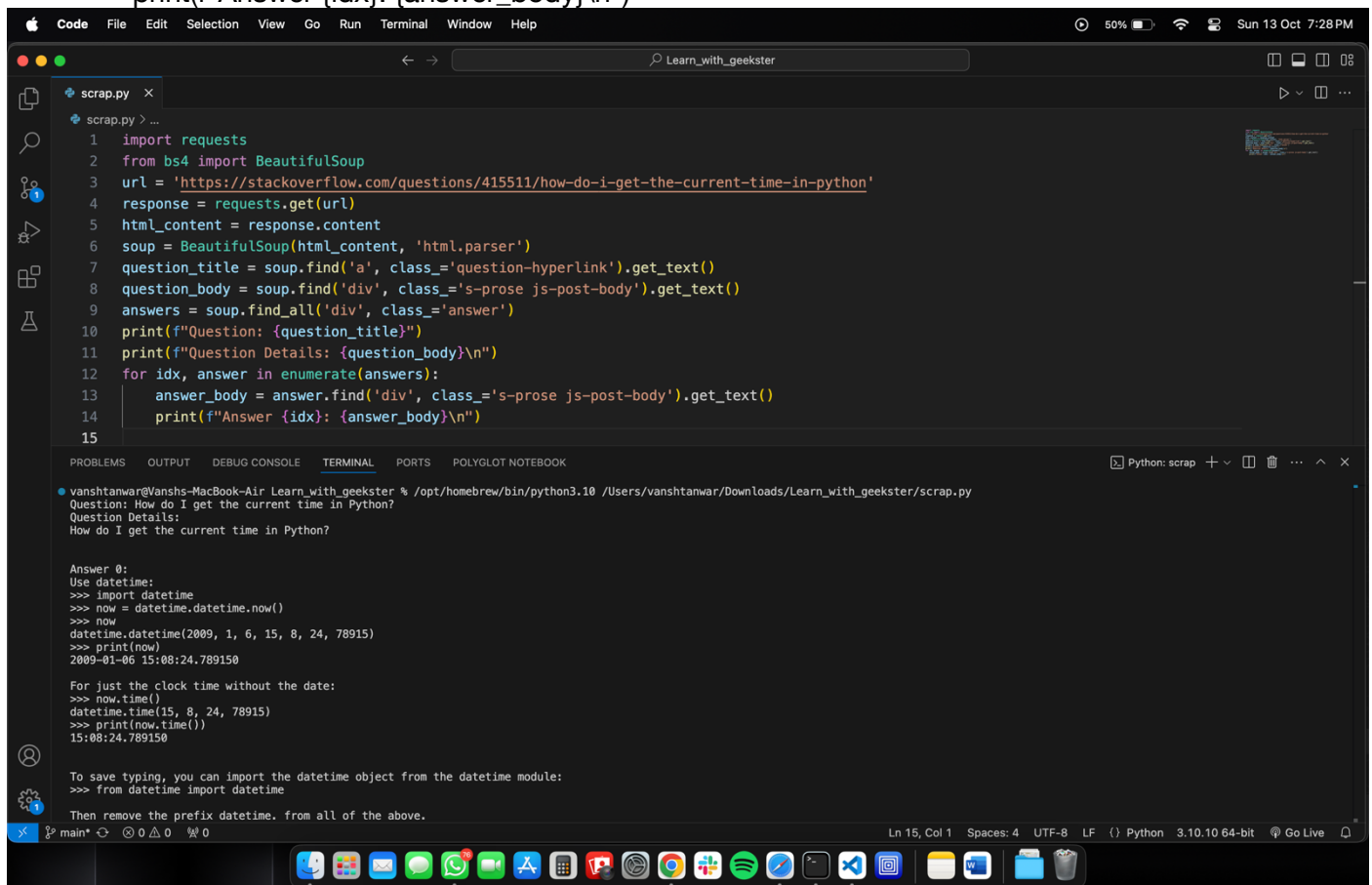
Installing BeautifulSoup

—>pip install BeautifulSoup4

```
vanshtanwar@Vanshs-MacBook-Air Learn_with_geekster % pip install BeautifulSoup4
Requirement already satisfied: BeautifulSoup4 in /Library/Frameworks/Python.framework/Versions/3.12/lib/python3.12/site-packages (4.12.3)
Requirement already satisfied: soupsieve>1.2 in /Library/Frameworks/Python.framework/Versions/3.12/lib/python3.12/site-packages (from BeautifulSoup4) (2.6)
vanshtanwar@Vanshs-MacBook-Air Learn_with_geekster %
```

Code

```
import requests
from bs4 import BeautifulSoup
url = 'https://stackoverflow.com/questions/415511/how-do-i-get-the-current-time-in-python'
response = requests.get(url)
html_content = response.content
soup = BeautifulSoup(html_content, 'html.parser')
question_title = soup.find('a', class_='question-hyperlink').get_text()
question_body = soup.find('div', class_='s-prose js-post-body').get_text()
answers = soup.find_all('div', class_='answer')
print(f"Question: {question_title}")
print(f"Question Details: {question_body}\n")
for idx, answer in enumerate(answers):
    answer_body = answer.find('div', class_='s-prose js-post-body').get_text()
    print(f"Answer {idx}: {answer_body}\n")
```



```
scrap.py
1 import requests
2 from bs4 import BeautifulSoup
3 url = 'https://stackoverflow.com/questions/415511/how-do-i-get-the-current-time-in-python'
4 response = requests.get(url)
5 html_content = response.content
6 soup = BeautifulSoup(html_content, 'html.parser')
7 question_title = soup.find('a', class_='question-hyperlink').get_text()
8 question_body = soup.find('div', class_='s-prose js-post-body').get_text()
9 answers = soup.find_all('div', class_='answer')
10 print(f"Question: {question_title}")
11 print(f"Question Details: {question_body}\n")
12 for idx, answer in enumerate(answers):
13     answer_body = answer.find('div', class_='s-prose js-post-body').get_text()
14     print(f"Answer {idx}: {answer_body}\n")
15
```

```
• vanshtanwar@Vanshs-MacBook-Air Learn_with_geekster % /opt/homebrew/bin/python3.10 /Users/vanshtanwar/Downloads/Learn_with_geekster/scrap.py
Question: How do I get the current time in Python?
Question Details:
How do I get the current time in Python?

Answer 0:
Use datetime:
>>> import datetime
>>> now = datetime.datetime.now()
>>> now
datetime.datetime(2009, 1, 6, 15, 8, 24, 78915)
>>> print(now)
2009-01-06 15:08:24.789150

For just the clock time without the date:
>>> now.time()
datetime.time(15, 8, 24, 78915)
>>> print(now.time())
15:08:24.789150

To save typing, you can import the datetime object from the datetime module:
>>> from datetime import datetime

Then remove the prefix datetime. from all of the above.
```

Output

Question: How do I get the current time in Python?

Question Details:

How do I get the current time in Python?

Answer 0:

Use datetime:

```
>>> import datetime
>>> now = datetime.datetime.now()
>>> now
datetime.datetime(2009, 1, 6, 15, 8, 24, 78915)
>>> print(now)
2009-01-06 15:08:24.789150
```

For just the clock time without the date:

```
>>> now.time()
datetime.time(15, 8, 24, 78915)
>>> print(now.time())
15:08:24.789150
```

To save typing, you can import the datetime object from the datetime module:

```
>>> from datetime import datetime
```

Then remove the prefix datetime. from all of the above.

Answer 1:

Use time.strftime():

```
>>> from time import gmtime, strftime
>>> strftime("%Y-%m-%d %H:%M:%S", gmtime())
'2009-01-05 22:14:39'
```

Answer 2:

```
from datetime import datetime
datetime.now().strftime('%Y-%m-%d %H:%M:%S')
```

Example output: '2013-09-18 11:16:32'

See list of strftime directives.

Answer 3:

Similar to Harley's answer, but use the str() function for a quick-n-dirty, slightly more human readable format:

```
>>> from datetime import datetime
>>> str(datetime.now())
'2011-05-03 17:45:35.177000'
```

Answer 4:

How do I get the current time in Python?

The time module

The time module provides functions that tell us the time in "seconds since the epoch" as well as other utilities.

```
import time
```

Unix Epoch Time

This is the format you should get timestamps in for saving in databases. It is a simple floating-point number that can be converted to an integer. It is also good for arithmetic in seconds, as it represents the number of seconds since Jan 1, 1970, 00:00:00, and it is memory light relative to the other representations of time we'll be looking at next:

```
>>> time.time()
1424233311.771502
```

This timestamp does not account for leap-seconds, so it's not linear - leap seconds are ignored. So while it is not equivalent to the international UTC standard, it is close, and therefore quite good for most cases of record-keeping.

This is not ideal for human scheduling, however. If you have a future event you wish to take place at a certain point in time, you'll want to store that time with a string that can be parsed into a datetime object or a serialized datetime object (these will be described later).
time.ctime

You can also represent the current time in the way preferred by your operating system (which means it can change when you change your system preferences, so don't rely on this to be standard across all systems, as I've seen others expect). This is typically user friendly, but doesn't typically result in strings one can sort chronologically:

```
>>> time.ctime()
'Tue Feb 17 23:21:56 2015'
```

You can hydrate timestamps into human readable form with ctime as well:

```
>>> time.ctime(1424233311.771502)
'Tue Feb 17 23:21:51 2015'
```

This conversion is also not good for record-keeping (except in text that will only be parsed by humans - and with improved Optical Character Recognition and Artificial Intelligence, I think the number of these cases will diminish).

datetime module

The datetime module is also quite useful here:

```
>>> import datetime
```

datetime.datetime.now

The datetime.now is a class method that returns the current time. It uses the time.localtime without the timezone info (if not given, otherwise see timezone aware below). It has a representation (which would allow you to recreate an equivalent object) echoed on the shell, but when printed (or coerced to a str), it is in human readable (and nearly ISO) format, and the lexicographic sort is equivalent to the chronological sort:

```
>>> datetime.datetime.now()
datetime.datetime(2015, 2, 17, 23, 43, 49, 94252)
>>> print(datetime.datetime.now())
2015-02-17 23:43:51.782461
```

datetime's utcnow

You can get a datetime object in UTC time, a global standard, by doing this:

```
>>> datetime.datetime.utcnow()
datetime.datetime(2015, 2, 18, 4, 53, 28, 394163)
>>> print(datetime.datetime.utcnow())
2015-02-18 04:53:31.783988
```

UTC is a time standard that is nearly equivalent to the GMT timezone. (While GMT and UTC do not change for Daylight Savings Time, their users may switch to other timezones, like British Summer Time, during the Summer.)

datetime timezone aware

However, none of the datetime objects we've created so far can be easily converted to various timezones. We can solve that problem with the pytz module:

```
>>> import pytz
>>> then = datetime.datetime.now(pytz.utc)
>>> then
datetime.datetime(2015, 2, 18, 4, 55, 58, 753949, tzinfo=<UTC>)
```

Equivalently, in Python 3 we have the timezone class with a utc timezone instance attached, which also makes the object timezone aware (but to convert to another timezone without the handy pytz module is left as an exercise to the reader):

```
>>> datetime.datetime.now(datetime.timezone.utc)
datetime.datetime(2015, 2, 18, 22, 31, 56, 564191, tzinfo=datetime.timezone.utc)
```

And we see we can easily convert to timezones from the original UTC object.

```
>>> print(then)
2015-02-18 04:55:58.753949+00:00
>>> print(then.astimezone(pytz.timezone('US/Eastern')))
2015-02-17 23:55:58.753949-05:00
```

You can also make a naive datetime object aware with the pytz timezone localize method, or by replacing the tzinfo attribute (with replace, this is done blindly), but these are more last resorts than best practices:

```
>>> pytz.utc.localize(datetime.datetime.utcnow())
datetime.datetime(2015, 2, 18, 6, 6, 29, 32285, tzinfo=<UTC>)
>>> datetime.datetime.utcnow().replace(tzinfo=pytz.utc)
datetime.datetime(2015, 2, 18, 6, 9, 30, 728550, tzinfo=<UTC>)
```

The pytz module allows us to make our datetime objects timezone aware and convert the times to the hundreds of timezones available in the pytz module.

One could ostensibly serialize this object for UTC time and store that in a database, but it would require far more memory and be more prone to error than simply storing the Unix Epoch time, which I demonstrated first.

The other ways of viewing times are much more error-prone, especially when dealing with data that may come from different time zones. You want there to be no confusion as to which timezone a string or serialized datetime object was intended for.

If you're displaying the time with Python for the user, ctime works nicely, not in a table (it doesn't typically sort well), but perhaps in a clock. However, I personally recommend, when dealing with time in Python, either using Unix time, or a timezone aware UTC datetime object.

Answer 5:

```
Do
from time import time
```

```
t = time()
```

t - float number, good for time interval measurement.

There is some difference for Unix and Windows platforms.

Answer 6:

```
>>> from time import gmtime, strftime
>>> strftime("%a, %d %b %Y %X +0000", gmtime())
'Tue, 06 Jan 2009 04:54:56 +0000'
```

That outputs the current GMT in the specified format. There is also a localtime() method. This page has more details.

Answer 7:

The previous answers are all good suggestions, but I find it easiest to use ctime():

```
In [2]: from time import ctime
In [3]: ctime()
Out[3]: 'Thu Oct 31 11:40:53 2013'
```

This gives a nicely formatted string representation of the current local time.

Answer 8:

The quickest way is:

```
>>> import time
>>> time.strftime("%Y%m%d")
'20130924'
```

Answer 9:

If you need current time as a time object:

```
>>> import datetime
>>> now = datetime.datetime.now()
>>> datetime.time(now.hour, now.minute, now.second)
datetime.time(11, 23, 44)
```

Answer 10:

You can use the time module:

```
>>> import time
>>> print(time.strftime("%d/%m/%Y"))
06/02/2015
```

The use of the capital Y gives the full year, and using y would give 06/02/15.

You could also use the following code to give a more lengthy time:

```
>>> time.strftime("%a, %d %b %Y %H:%M:%S")
'Fri, 06 Feb 2015 17:45:09'
```

Answer 11:

.isoformat() is in the documentation, but not yet here

(this is mighty similar to @Ray Vega's answer):

```
>>> import datetime
>>> datetime.datetime.now().isoformat()
'2013-06-24T20:35:55.982000'
```

Answer 12:

Why not ask the U.S. Naval Observatory, the official timekeeper of the United States Navy?

```
import requests
from lxml import html
```

```
page = requests.get('http://tycho.usno.navy.mil/cgi-bin/timer.pl')
tree = html.fromstring(page.content)
print(tree.xpath('//html//body//h3//pre/text()')[1])
```

If you live in the D.C. area (like me) the latency might not be too bad...

Answer 13:

Using pandas to get the current time, kind of overkilling the problem at hand:

```
import pandas as pd
print(pd.datetime.now())
print(pd.datetime.now().date())
print(pd.datetime.now().year)
print(pd.datetime.now().month)
print(pd.datetime.now().day)
print(pd.datetime.now().hour)
print(pd.datetime.now().minute)
print(pd.datetime.now().second)
print(pd.datetime.now().microsecond)
```

Output:

```
2017-09-22 12:44:56.092642
2017-09-22
2017
9
22
12
44
```

56
92693

Answer 14:

if you are using numpy already then directly you can use `numpy.datetime64()` function.

```
import numpy as np
str(np.datetime64('now'))
```

for only date:

```
str(np.datetime64('today'))
```

or, if you are using pandas already then you can use `pandas.to_datetime()` function

```
import pandas as pd
str(pd.to_datetime('now'))
```

or,

```
str(pd.to_datetime('today'))
```

Answer 15:

This is what I ended up going with:

```
>>>from time import strftime
>>>strftime("%m/%d/%Y %H:%M")
01/09/2015 13:11
```

Also, this table is a necessary reference for choosing the appropriate format codes to get the date formatted just the way you want it (from Python "datetime" documentation here).

Answer 16:

`datetime.now()` returns the current time as a naive datetime object that represents time in the local timezone. That value may be ambiguous e.g., during DST transitions ("fall back"). To avoid ambiguity either UTC timezone should be used:

```
from datetime import datetime
```

```
utc_time = datetime.utcnow()
print(utc_time) # -> 2014-12-22 22:48:59.916417
```

Or a timezone-aware object that has the corresponding timezone info attached (Python 3.2+):

```
from datetime import datetime, timezone
```

```
now = datetime.now(timezone.utc).astimezone()
print(now) # -> 2014-12-23 01:49:25.837541+03:00
```

Answer 17:

This question doesn't need a new answer just for the sake of it ... a shiny new-ish toy/module, however, is enough justification. That being the `Pendulum` library, which appears to do the sort of things which `arrow` attempted, except without the inherent flaws and bugs which beset `arrow`.

For instance, the answer to the original question:

```
>>> import pendulum
>>> print(pendulum.now())
2018-08-14T05:29:28.315802+10:00
>>> print(pendulum.now('utc'))
2018-08-13T19:29:35.051023+00:00
```

There's a lot of standards which need addressing, including multiple RFCs and ISOs, to worry about. Ever get them mixed up; not to worry, take a little look into `dir(pendulum.constants)` There's a bit more than RFC and ISO formats there, though.

When we say local, though what do we mean? Well I mean:

```
>>> print(pendulum.now().timezone_name)
Australia/Melbourne
>>>
```

Presumably most of the rest of you mean somewhere else.

And on it goes. Long story short: Pendulum attempts to do for date and time what requests did for HTTP. It's worth consideration, particularly for both its ease of use and extensive documentation.

Answer 18:

```
import datetime
date_time = datetime.datetime.now()

date = date_time.date() # Gives the date
time = date_time.time() # Gives the time

print date.year, date.month, date.day
print time.hour, time.minute, time.second, time.microsecond
```

Do `dir(date)` or any variables including the package. You can get all the attributes and methods associated with the variable.

Answer 19:

```
>>> import datetime, time
>>> time = time.strftime("%H:%M:%S:%MS", time.localtime())
>>> print time
'00:21:38:20S'
```

Answer 20:

By default, `now()` function returns output in the YYYY-MM-DD HH:MM:SS:MS format. Use the below sample script to get the current date and time in a Python script and print results on the screen. Create file `getDateTime1.py` with the below content.

```
import datetime
```

```
currentDT = datetime.datetime.now()
print (str(currentDT))
```

The output looks like below:
2018-03-01 17:03:46.759624

Answer 21:

Try the arrow module from <http://crsmithdev.com/arrow/>:

```
import arrow
arrow.now()
```

Or the UTC version:

```
arrow.utcnow()
```

To change its output, add `.format()`:

```
arrow.utcnow().format('YYYY-MM-DD HH:mm:ss ZZ')
```

For a specific timezone:

```
arrow.now('US/Pacific')
```

An hour ago:
`arrow.utcnow().replace(hours=-1)`

Or if you want the gist.
`arrow.get('2013-05-11T21:23:58.970460+00:00').humanize()`
`>>> '2 years ago'`

Answer 22:

Current time of a timezone
`from datetime import datetime`
`import pytz`

`tz_NY = pytz.timezone('America/New_York')`
`datetime_NY = datetime.now(tz_NY)`
`print("NY time:", datetime_NY.strftime("%H:%M:%S"))`

`tz_London = pytz.timezone('Europe/London')`
`datetime_London = datetime.now(tz_London)`
`print("London time:", datetime_London.strftime("%H:%M:%S"))`

`tz_India = pytz.timezone('Asia/India')`
`datetime_India = datetime.now(tz_India)`
`print("India time:", datetime_India.strftime("%H:%M:%S"))`

`#list timezones`
`pytz.all_timezones`

Answer 23:

To get exactly 3 decimal points for milliseconds 11:34:23.751 run this:

```
def get_time_str(decimal_points=3):  
    return time.strftime("%H:%M:%S", time.localtime()) + '.%d' % (time.time() % 1 *  
10**decimal_points)
```

More context:

I want to get the time with milliseconds. A simple way to get them:
`import time, datetime`

```
print(datetime.datetime.now().time()) # 11:20:08.272239
```

```
# Or in a more complicated way  
print(datetime.datetime.now().time().isoformat()) # 11:20:08.272239  
print(datetime.datetime.now().time().strftime('%H:%M:%S.%f')) # 11:20:08.272239
```

```
# But do not use this:  
print(time.strftime("%H:%M:%S.%f", time.localtime()), str) # 11:20:08.%f
```

But I want only milliseconds, right? The shortest way to get them:
`import time`

```
time.strftime("%H:%M:%S", time.localtime()) + '.%d' % (time.time() % 1 * 1000)  
# 11:34:23.751
```

Add or remove zeroes from the last multiplication to adjust number of decimal points, or just:

```
def get_time_str(decimal_points=3):  
    return time.strftime("%H:%M:%S", time.localtime()) + '.%d' % (time.time() % 1 *  
10**decimal_points)
```

Answer 24:

If you just want the current timestamp in ms (for example, to measure execution time), you can also use the "timeit" module:

```
import timeit
start_time = timeit.default_timer()
do_stuff_you_want_to_measure()
end_time = timeit.default_timer()
print("Elapsed time: {}".format(end_time - start_time))
```

Answer 25:

You can use this function to get the time (unfortunately it doesn't say AM or PM):

```
def gettime():
    from datetime import datetime
    return ((str(datetime.now())).split(' ')[1]).split('.')[0]
```

To get the hours, minutes, seconds and milliseconds to merge later, you can use these functions:

Hour:

```
def gethour():
    from datetime import datetime
    return (((str(datetime.now())).split(' ')[1]).split('.')[0]).split(':')[0]
```

Minute:

```
def getminute():
    from datetime import datetime
    return (((str(datetime.now())).split(' ')[1]).split('.')[0]).split(':')[1]
```

Second:

```
def getsecond():
    from datetime import datetime
    return (((str(datetime.now())).split(' ')[1]).split('.')[0]).split(':')[2]
```

Millisecond:

```
def getmillisecond():
    from datetime import datetime
    return (str(datetime.now())).split('.')[1]
```

Answer 26:

You can try the following

```
import datetime
```

```
now = datetime.datetime.now()
print(now)
```

or

```
import datetime
```

```
now = datetime.datetime.now()
print(now.strftime("%Y-%b-%d, %A %I:%M:%S"))
```

Answer 27:

Because no one has mentioned it yet, and this is something I ran into recently... a pytz timezone's fromutc() method combined with datetime's utcnow() is the best way I've found to get a useful current time (and date) in any timezone.

```
from datetime import datetime
```

```
import pytz
```

```
JST = pytz.timezone("Asia/Tokyo")
```

```
local_time = JST.fromutc(datetime.utcnow())
```

If all you want is the time, you can then get that with `local_time.time()`.

Answer 28:

```
import datetime

todays_date = datetime.date.today()
print(todays_date)
>>> 2019-10-12

# adding strftime will remove the seconds
current_time = datetime.datetime.now().strftime('%H:%M')
print(current_time)
>>> 23:38
```

Answer 29:

```
You can do so using ctime():
from time import time, ctime
t = time()
ctime(t)
```

output:

```
Sat Sep 14 21:27:08 2019
```

These outputs are different because the timestamp returned by `ctime()` depends on your geographical location.

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