Commonly used classes in the datetime module are:

datetime, date, time, timedelta

In [21]:

```
from datetime import datetime,date,time,timedelta
```

In [22]:

```
#create datetime with a current date and time
current_dt =datetime.now()
print(current_dt)
```

```
2022-07-22 22:25:35.383265
```

In [23]:

```
current_dt.date()
```

Out[23]:

```
datetime.date(2022, 7, 22)
```

In [24]:

```
current_dt.time()
```

Out[24]:

```
datetime.time(22, 25, 35, 383265)
```

In [25]:

```
print("year = ",current_dt.year)
print("month = ",current_dt.month)
print("day = ",current_dt.day)
print("hour = ",current_dt.hour)
print("minute = ",current_dt.minute)
print("second = ",current_dt.second)
print("microsecond = ",current_dt.microsecond)
```

```
year =  2022
month =  7
day =  22
hour =  22
minute =  25
second =  35
microsecond =  383265
```

In [26]:

```
current_dt.max
```

Out[26]:

```
datetime.datetime(9999, 12, 31, 23, 59, 59, 999999)
```

In [27]:

```
current_dt.min
```

Out[27]:

```
datetime.datetime(1, 1, 1, 0, 0)
```

In [28]:

```
x=10
```

In [29]:

```
print(x)
```

```
10
```

In [30]:

```
#create datetime with a specific timezone
import pytz
pytz.all_timezones
```

...

In [61]:

```
tz = pytz.timezone('Africa/Lagos')
current_dt = datetime.now(tz)
current_dt
```

Out[61]:

```
datetime.datetime(2022, 7, 22, 18, 3, 2, 658979, tzinfo=<DstTzInfo 'Africa/L
agos' WAT+1:00:00 STD>)
```

In [62]:

```
current_dt = datetime.today()
current_dt
```

Out[62]:

```
datetime.datetime(2022, 7, 22, 22, 33, 7, 481974)
```

In [63]:

```
current_dt.min
```

Out[63]:

```
datetime.datetime(1, 1, 1, 0, 0)
```

In [64]:

```
current_dt.max
```

Out[64]:

```
datetime.datetime(9999, 12, 31, 23, 59, 59, 999999)
```

In [65]:

```
current_dt.weekday()
```

Out[65]:

```
4
```

In [66]:

```
current_dt.isoweekday()
```

Out[66]:

```
5
```

In [67]:

```
#formating datetime
current_dt
```

Out[67]:

```
datetime.datetime(2022, 7, 22, 22, 33, 7, 481974)
```

In [68]:

```
current_dt.strftime("%A %d %B %Y")
```

Out[68]:

```
'Friday 22 July 2022'
```

In [69]:

```
current_dt.strftime("%d %m %y")
```

Out[69]:

```
'22 07 22'
```

In [70]:

```
current_dt.strftime("%d-%m-%y")
```

Out[70]:

```
'22-07-22'
```

In [71]:

```
current_dt.strftime("%d/%m/%y %H:%m hours %Z")
```

Out[71]:

```
'22/07/22 22:07 hours '
```

In [72]:

```
current_dt.strftime("%d/%m/%y %I:%m %p %Z")
```

Out[72]:

```
'22/07/22 10:07 PM '
```

Directive | Description | Example

%a Weekday, short version : Wed
%A Weekday, full version : Wednesday
%w Weekday as a number 0-6, 0 is Sunday : 3
%d Day of month 01-31 : 31
%b Month name, short version : Dec
%B Month name, full version : December
%m Month as a number 01-12 : 12
%y Year, short version, without century : 18
%Y Year, full version : 2018
%H Hour 00-23 : 17
%I Hour 00-12 : 5
%p AM/PM : PM
%M Minute 00-59 : 41
%S Second 00-59 : 8
%f Microsecond 000000-999999 : 548513
%z UTC offset : 100
%Z Timezone : CST
%j Day number of year 001-366 : 365
%U Week number of year, Sunday as the first day of week, 00-53 : 52
%W Week number of year, Monday as the first day of week, 00-53 : 52
%c Local version of date and time Mon Dec 31 17:41:00 : 2018
%C Century : 20
%x Local version of date : 12/31/18
%X Local version of time : 17:41:00

In [74]:

```
#create datetime with new values
#datetime(year=,month=,day=)
new_date=datetime(2020, 5, 1,18,44)
new_date
```

Out[74]:

```
datetime.datetime(2020, 5, 1, 18, 44)
```

In [ ]:

```
#datetime(year=,month=,day=)
new_date=datetime(year=2020, month=5, day=1)
new_date
```

In [76]:

```
#string to datetime
dob_str='22-2-1990'
type(dob_str)
```

Out[76]:

```
str
```

In [80]:

```
dob_date=datetime.strptime(dob_str,'%d-%m-%Y')
print(dob_date)
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_13556/1697603545.py in <module>
----> 1 dob_date=datetime.strptime(dob_str,'%d-%m-%Y')
      2 print(dob_date)

~\anaconda3\lib\_strptime.py in _strptime_datetime(cls, data_string, format)
    566     """Return a class cls instance based on the input string and the
    567     format string."""
--> 568     tt, fraction, gmtoff_fraction = _strptime(data_string, format)
    569     tzname, gmtoff = tt[-2:]
    570     args = tt[:6] + (fraction,)

~\anaconda3\lib\_strptime.py in _strptime(data_string, format)
    347     found = format_regex.match(data_string)
    348     if not found:
--> 349         raise ValueError("time data %r does not match format %r" %
    350                          (data_string, format))
    351     if len(data_string) != found.end():

ValueError: time data '22/2/1990' does not match format '%d-%m-%Y'
```

In [83]:

```
dob_str='22/2/1990'
type(dob_str)
dob_date=datetime.strptime(dob_str,'%d/%m/%Y')
print(dob_date)
```

```
1990-02-22 00:00:00
```

In [82]:

```
#Date
```

In [84]:

```
from datetime import date
x=date.today()
```

In [85]:

```
type(x)
```

Out[85]:

```
datetime.date
```

In [86]:

```
print(x)
```

```
2022-07-22
```

In [87]:

```
x.year
```

Out[87]:

```
2022
```

In [88]:

```
x.month
```

Out[88]:

```
7
```

In [89]:

```
x.day
```

Out[89]:

```
22
```

In [90]:

```
#create date object with specific value
d1=date(2000,12,23)
print(d1)
```

```
2000-12-23
```

In [93]:

```
#create date object with parameter names
#   date(year=, month=, day=)
d1=date(year=2000, month=12, day=23)
print(d1)
```

```
2000-12-23
```

In [92]:

```
#Task create date object with you date of birth
from datetime import date
```

In [ ]:

```
#Time
```

In [94]:

```
from datetime import time
x=time()
print(x)
```

```
00:00:00
```

In [97]:

```
# time(hour = , minute = , second = ,microsecond=)
t1=time(11,45,55,342324)
print(t1)
```

```
11:45:00
```

In [98]:

```
t1=time(hour = 13, minute = 22, second=12,microsecond=1234)
print(t1)
```

```
13:22:12.001234
```

In [99]:

```
t1.hour
```

Out[99]:

```
13
```

In [100]:

```
t1.minute
```

Out[100]:

```
22
```

In [101]:

```
t1.second
```

Out[101]:

```
12
```

In [102]:

```
x.microsecond
```

Out[102]:

```
0
```

In [ ]:

```
#Timedelta
```

In [103]:

```
#example - book issuance at library
import datetime
current_date = datetime.datetime.today()
print("current_date=",current_date.date())
```

```
current_date= 2022-07-22
```

In [104]:

```
book_due_date=current_date+datetime.timedelta(10)
print("book due date=",book_due_date.date())
```

```
book due date= 2022-08-01
```

In [106]:

```
# calculate your age
current_date = date.today()
dob = date(1998, 11, 28)
age_days=current_date-dob
age_days
```

Out[106]:

```
datetime.timedelta(days=8637)
```

In [107]:

```
print("age in days",age_days.days)
```

```
age in days 8637
```

In [110]:

```
age_years=age_days.days/365
print("age in years",round(age_years,2))
#Print age in months, minutes, seconds
type(age_days)
```

```
age in years 23.66
```

Out[110]:

```
datetime.timedelta
```

In [ ]:

```
#Task - How may years have passed since your country got indepedence/formation
#accept date of indepedence using input function
```

In [ ]:

```
#Task - enter dob in string format using input function, calculate age,
#if age<18 then prot a msg that the person is not eligible for voting
```

In [ ]:

```

```