```
#session02
'''
this is the codes for
session 02
'''
```

```
print("holle world")
a=5
print(a)
print("a")
```

```
holle world
5
a
```

```
a
```

```
5
```

```
#variable type
a = 42.3
is_it_thursday=True
my_name='Mustafa'
```

```
#lists
numbers = [43,23,12]
names=[]
numbers.append(90)

numbers[1]
```

```
23
```

```
#tuples
cars = ("audi","vw","opel")
```

```
thisdict = { "first":"Coskun", "second": "UZH", "year":2023 }
thisdict["year"]
```

```
2023
```

```
f1=5.75
f2=2.25
#arithmetic operations
print(f1+f2)
print(f1-f2)
print(f1/f2)
print(f1*f2)
```

```
8.0
8.0
8.0
```

```
d=15
b=4
c = d % b
print(c)
```

```
3
```

```
!pip install numpy
```

```
Requirement already satisfied: numpy in /opt/python/envs/default/lib/pyt

[notice] A new release of pip is available: 23.1.2 -> 23.2.1
[notice] To update, run: pip install --upgrade pip
```

```
import numpy as np
print(np.pi)
print(np.e)
```

```
3.141592653589793
2.718281828459045
```

```
angle = np.pi / 4
print(np.sin(angle))
#https://numpy.org/
```

```
0.7071067811865475
```

```
x = [1,2,3,4]
y = [5,6,7,8]
z=x+y
z
```

```
[1, 2, 3, 4, 5, 6, 7, 8]
```

```
np.sum(x)
```

```
10
```

```
np.add(x,y)
```

```
array([ 6,  8, 10, 12])
```

```
#x=[1,2,3,4]
for i in x:
    b = i * i
    print(b)
print("this line is outside of for loop")
```

```
1
4
9
16
```

```
t=5
while t<10:
    t = t + 1
    print(t)
print("this is out of iteration block")
```

```
6
7
8
9
10
this is out of iteration block
```

```
for i in range(12,46,2):
    print(i)
```

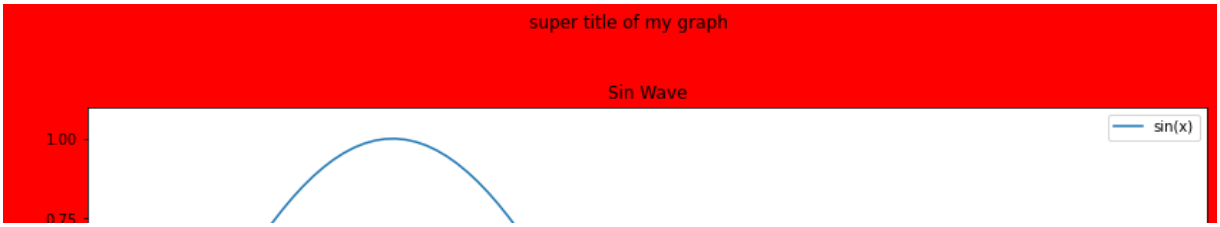
```
12
14
16
18
20
22
24
26
28
30
32
34
36
```

```
38
40
42
44
```

```
#conditional
xx=34
if x<78:
    print("smaller")
else:
    print("greater")
```

```
import matplotlib.pyplot as plt
import numpy as np
#lets generate some sample data between 0 and 2pi 100 elements
mx = np.linspace(0,2 * np.pi,100)
my = np.sin(mx)

#create a figure and a set subplots
fig, ax = plt.subplots()


ax.plot(mx,my,label="sin(x)")
ax.set_xlabel("X-Axis")
ax.set_ylabel("Y-Axis")
ax.set_title("Sin Wave")
ax.legend()

fig.suptitle("super title of my graph")
fig.set_size_inches(14,9)
fig.set_facecolor("red")
fig.savefig("aaa.png")

plt.show()
```

Download




```
#pandas

import pandas as pd
ches=pd.read_csv("https://www.chesdata.eu/s/CHES2019_experts.csv")
```

```
ches
```

	id	party	party_name	party_id	position	eu_salience	eu_dissent	eu_blur	lrecon	lrecon_blur	.
0	1	1	GERB	2010	7.0	9.0	1.0	NaN	5	NaN	.
1	1	2	BSP	2003	5.0	6.0	4.0	NaN	3	NaN	.
2	1	3	DPS	2004	7.0	9.0	2.0	NaN	5	NaN	.
3	1	4	Volya	2017	3.0	6.0	4.0	NaN	7	NaN	.
4	1	5	NFSB	2014	3.0	6.0	4.0	NaN	7	NaN	.
...	...	...	...	...	...	...	...	...	...	...	.
3818	17	8	BREXIT	1110	1.0	8.0	NaN	1.0	.d	NaN	.
3819	4	8	BREXIT	1110	1.0	10.0	0.0	NaN	8	1	.
3820	11	8	BREXIT	1110	NaN	NaN	NaN	NaN	.d	.d	.
3821	16	8	BREXIT	1110	2.0	5.0	NaN	3.0	8	.d	.
3822	3	8	BREXIT	1110	2.0	10.0	7.0	NaN	8	NaN	.

3823 rows × 63 columns

```
len(ches)
```

3823

```
ches.head(5)
```

	id	party	party_name	party_id	position	eu_salience	eu_dissent	eu_blur	lrecon	lrecon_blur	...
0	1	1	GERB	2010	7.0	9.0	1.0	NaN	5	NaN	...
1	1	2	BSP	2003	5.0	6.0	4.0	NaN	3	NaN	...
2	1	3	DPS	2004	7.0	9.0	2.0	NaN	5	NaN	...
3	1	4	Volya	2017	3.0	6.0	4.0	NaN	7	NaN	...
4	1	5	NFSB	2014	3.0	6.0	4.0	NaN	7	NaN	...

5 rows × 63 columns

```
ches.tail(9)
```

	id	party	party_name	party_id	position	eu_salience	eu_dissent	eu_blur	lrecon	lrecon_blur	.
3814	15	8	BREXIT	1110	2.0	NaN	NaN	NaN	.d	.d	.
3815	7	8	BREXIT	1110	2.0	7.0	1.0	NaN	6	NaN	.
3816	9	8	BREXIT	1110	5.0	10.0	3.0	NaN	7	NaN	.
3817	5	8	BREXIT	1110	1.0	8.0	NaN	NaN	.d	NaN	.
3818	17	8	BREXIT	1110	1.0	8.0	NaN	1.0	.d	NaN	.
3819	4	8	BREXIT	1110	1.0	10.0	0.0	NaN	8	1	.
3820	11	8	BREXIT	1110	NaN	NaN	NaN	NaN	.d	.d	.
3821	16	8	BREXIT	1110	2.0	5.0	NaN	3.0	8	.d	.
3822	3	8	BREXIT	1110	2.0	10.0	7.0	NaN	8	NaN	.

9 rows × 63 columns

```
pd.set_option("display.max.columns",None)
ches
```

	id	party	party_name	party_id	position	eu_salience	eu_dissent	eu_blur	lrecon	lrecon_blur	l
0	1	1	GERB	2010	7.0	9.0	1.0	NaN	5	NaN	1
1	1	2	BSP	2003	5.0	6.0	4.0	NaN	3	NaN	5
2	1	3	DPS	2004	7.0	9.0	2.0	NaN	5	NaN	1
3	1	4	Volya	2017	3.0	6.0	4.0	NaN	7	NaN	5
4	1	5	NFSB	2014	3.0	6.0	4.0	NaN	7	NaN	5
...	...	...	...	...	...	...	...	...	...	...	.
3818	17	8	BREXIT	1110	1.0	8.0	NaN	1.0	.d	NaN	N
3819	4	8	BREXIT	1110	1.0	10.0	0.0	NaN	8	1	N
3820	11	8	BREXIT	1110	NaN	NaN	NaN	NaN	.d	.d	N
3821	16	8	BREXIT	1110	2.0	5.0	NaN	3.0	8	.d	N
3822	3	8	BREXIT	1110	2.0	10.0	7.0	NaN	8	NaN	6

3823 rows × 63 columns

```
pd.set_option("display.precision",2)
ches
```

	id	party	party_name	party_id	position	eu_salience	eu_dissent	eu_blur	lrecon	lrecon_blur	l
0	1	1	GERB	2010	7.0	9.0	1.0	NaN	5	NaN	1
1	1	2	BSP	2003	5.0	6.0	4.0	NaN	3	NaN	5
2	1	3	DPS	2004	7.0	9.0	2.0	NaN	5	NaN	1
3	1	4	Volya	2017	3.0	6.0	4.0	NaN	7	NaN	5
4	1	5	NFSB	2014	3.0	6.0	4.0	NaN	7	NaN	5
...	...	...	...	...	...	...	...	...	...	...	.
3818	17	8	BREXIT	1110	1.0	8.0	NaN	1.0	.d	NaN	N
3819	4	8	BREXIT	1110	1.0	10.0	0.0	NaN	8	1	N
3820	11	8	BREXIT	1110	NaN	NaN	NaN	NaN	.d	.d	N
3821	16	8	BREXIT	1110	2.0	5.0	NaN	3.0	8	.d	N
3822	3	8	BREXIT	1110	2.0	10.0	7.0	NaN	8	NaN	6

3823 rows × 63 columns

```
ches.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 3823 entries, 0 to 3822
Data columns (total 63 columns):
```

```
 #   Column                Non-Null Count  Dtype
---  ------                --------------  -----
 0   id                    3823 non-null   int64
 1   party                 3823 non-null   int64
 2   party_name            3811 non-null   object
 3   party_id              3823 non-null   int64
 4   position              3561 non-null   float64
 5   eu_salience           3523 non-null   float64
 6   eu_dissent            1499 non-null   float64
 7   eu_blur               1802 non-null   float64
 8   lrecon                3651 non-null   object
 9   lrecon_blur           1873 non-null   object
 10  lrecon_dissent        1520 non-null   float64
 11  lrecon_salience       3523 non-null   float64
 12  galtan                3677 non-null   object
 13  galtan_blur           1642 non-null   float64
 14  galtan_dissent        1676 non-null   float64
```

```
ches.describe()
```

	id	party	party_id	position	eu_salience	eu_dissent	eu_blur	lrecon_dissent	lrecon_sali
count	3823.00	3823.00	3823.00	3561.00	3523.00	1499.00	1802.00	1520.00	3523.00
mean	8.64	5.35	1864.38	4.97	6.09	2.63	3.15	2.96	6.36
std	5.67	3.10	1100.26	1.93	2.46	2.22	2.60	2.14	2.25
min	1.00	1.00	102.00	1.00	0.00	0.00	0.00	0.00	0.00
25%	4.00	3.00	837.00	3.00	4.00	1.00	1.00	1.00	5.00
50%	8.00	5.00	2101.00	6.00	6.00	2.00	3.00	2.00	7.00
75%	12.00	8.00	2804.00	7.00	8.00	4.00	5.00	4.00	8.00
max	27.00	14.00	4508.00	7.00	10.00	10.00	10.00	10.00	10.00

```
ches.describe(include=object)
```

	party_name	lrecon	lrecon_blur	galtan	anti_islam_rhetoric	party_b_econ	cname
count	3811	3651	1873	3677	3419	3733	1989
unique	258	12	12	12	12	7	21
top	V	5	2	5	0	9	esp
freq	58	502	263	381	1065	1866	195

```
ches["party_name"].value_counts()
```

```
V             58
SPD           48
SD            46
PS            44
SDP           38
              ..
LSAP/POSL      2
DP/PD          2
KOP            2
EDEK           2
CVP/PCS        2
Name: party_name, Length: 258, dtype: int64
```

```
ches.loc[10:100:5]
```

	id	party	party_name	party_id	position	eu_salience	eu_dissent	eu_blur	lrecon	lrecon_blur	lre
10	2	1	GERB	2010	5.0	7.0	3.0	NaN	5	NaN	2.(
15	2	6	Ataka	2007	1.0	7.0	0.0	NaN	2	NaN	0.(
20	3	1	GERB	2010	7.0	9.0	4.0	NaN	7	7	Na
25	3	6	Ataka	2007	3.0	5.0	NaN	NaN	2	NaN	Na
30	4	1	GERB	2010	6.0	8.0	4.0	NaN	4	7	Na
35	4	6	Ataka	2007	2.0	3.0	2.0	NaN	1	9	Na
40	5	1	GERB	2010	6.0	7.0	2.0	NaN	6	7	Na
45	5	6	Ataka	2007	3.0	3.0	2.0	NaN	9	6	Na
50	6	1	GERB	2010	7.0	10.0	NaN	1.0	8	2	Na
55	6	6	Ataka	2007	2.0	1.0	NaN	1.0	2	1	Na
60	7	1	GERB	2010	7.0	8.0	NaN	0.0	5	NaN	0.(
65	7	6	Ataka	2007	1.0	9.0	NaN	0.0	1	NaN	0.(
70	8	1	GERB	2010	7.0	9.0	2.0	NaN	8	NaN	0.(
75	8	6	Ataka	2007	3.0	5.0	NaN	NaN	NaN	NaN	0.(
80	9	1	GERB	2010	7.0	10.0	NaN	1.0	6	NaN	2.(
85	9	6	Ataka	2007	2.0	1.0	NaN	2.0	1	NaN	2.(
90	10	1	GERB	2010	7.0	10.0	NaN	6.0	4	8	Na
95	10	6	Ataka	2007	1.0	9.0	NaN	2.0	1	6	Na
100	11	1	GERB	2010	7.0	8.0	NaN	6.0	7	8	Na

```
ches.loc[ches["party_name"].isin(["Ataka","CHP","GERB"])]
```

	id	party	party_name	party_id	position	eu_salience	eu_dissent	eu_blur	lrecon	lrecon_blur	lre
0	1	1	GERB	2010	7.0	9.0	1.0	NaN	5	NaN	1.(
5	1	6	Ataka	2007	3.0	6.0	4.0	NaN	3	NaN	5.
10	2	1	GERB	2010	5.0	7.0	3.0	NaN	5	NaN	2.
15	2	6	Ataka	2007	1.0	7.0	0.0	NaN	2	NaN	0.
20	3	1	GERB	2010	7.0	9.0	4.0	NaN	7	7	Na
25	3	6	Ataka	2007	3.0	5.0	NaN	NaN	2	NaN	Na
30	4	1	GERB	2010	6.0	8.0	4.0	NaN	4	7	Na

```
ches.loc[(ches["party_name"].isin(["Ataka","CHP","GERB"])) & (ches["positi
```

	party_id	party_name
5	2007	Ataka
10	2010	GERB
15	2007	Ataka
25	2007	Ataka
35	2007	Ataka
45	2007	Ataka
55	2007	Ataka
65	2007	Ataka
75	2007	Ataka
85	2007	Ataka
95	2007	Ataka
105	2007	Ataka
115	2007	Ataka
125	2007	Ataka
135	2007	Ataka
150	2010	GERB
155	2007	Ataka
165	2007	Ataka
175	2007	Ataka
185	2007	Ataka
195	2007	Ataka
205	2007	Ataka

```
import requests as re
import pandas as pd
from bs4 import BeautifulSoup
df=pd.DataFrame(columns=["date","category","title","text"])
URL="https://www.news.uzh.ch/en/feeds/allnews.html?year=2023"
page=re.get(URL)
soup=BeautifulSoup(page.content,"html.parser")
contents=soup.find_all("div",class_="NewsArticleItem--content")
for content in contents:
    time=content.find("time",class_="NewsArticleItem--date")
    category=content.find("span",class_="NewsArticleItem--category")
    title=content.find("h3",class_="NewsArticleItem--title")
    text=content.find("div",class_="NewsArticleItem--text")
    df=df._append({
        'date':time.text,
        'category':category.text,
        "title":title.text,
        "text":text.text
    },ignore_index=True)
df
```

	date	category	title	text
0	27.09.2023	Data Protection and Ethics	A Solid Basis for Research	A new self-assessment tool enables researchers...
1	25.09.2023	Media Research	News Coverage in Major Media Outlets Is Politi...	A new study by the fög shows that news coverag...
2	22.09.2023	Evolutionary Biology	AI Increases Precision in Plant Observation	Researchers at UZH have used big data, machine...
3	22.09.2023	DSI Strategy Lab "Artificial Intelligence in ...	Our Digital Doppelgangers	Artificial intelligence is also revolutionizin...
4	21.09.2023	Internationale Studierende	Sprechen Sie Deutsch?	A new semester has started, which means that m...
...	...	...	...	...
116	17.01.2023	In Memoriam	Swimming Against the Current	In 1986, UZH physicist and IBM Fellow K. Alex ...
117	16.01.2023	UZH Postdoc Team Award	Checking the Pulse of Society	The newly established Postdoc Team Award allow...
118	11.01.2023	Jurisprudence	Taking Climate to Court	Over a dozen climate-related lawsuits are pend...
119	09.01.2023	UZH Spin-Offs in 2022	Entrepreneurial Milestones in Life Sciences	Three new spin-offs were founded at UZH in 202...
120	04.01.2023	Top of the Press Pops 2022	Donated Livers, Dolphin Apothecaries and Dange...	Evolution, health, and animal and human behavi...

121 rows × 4 columns