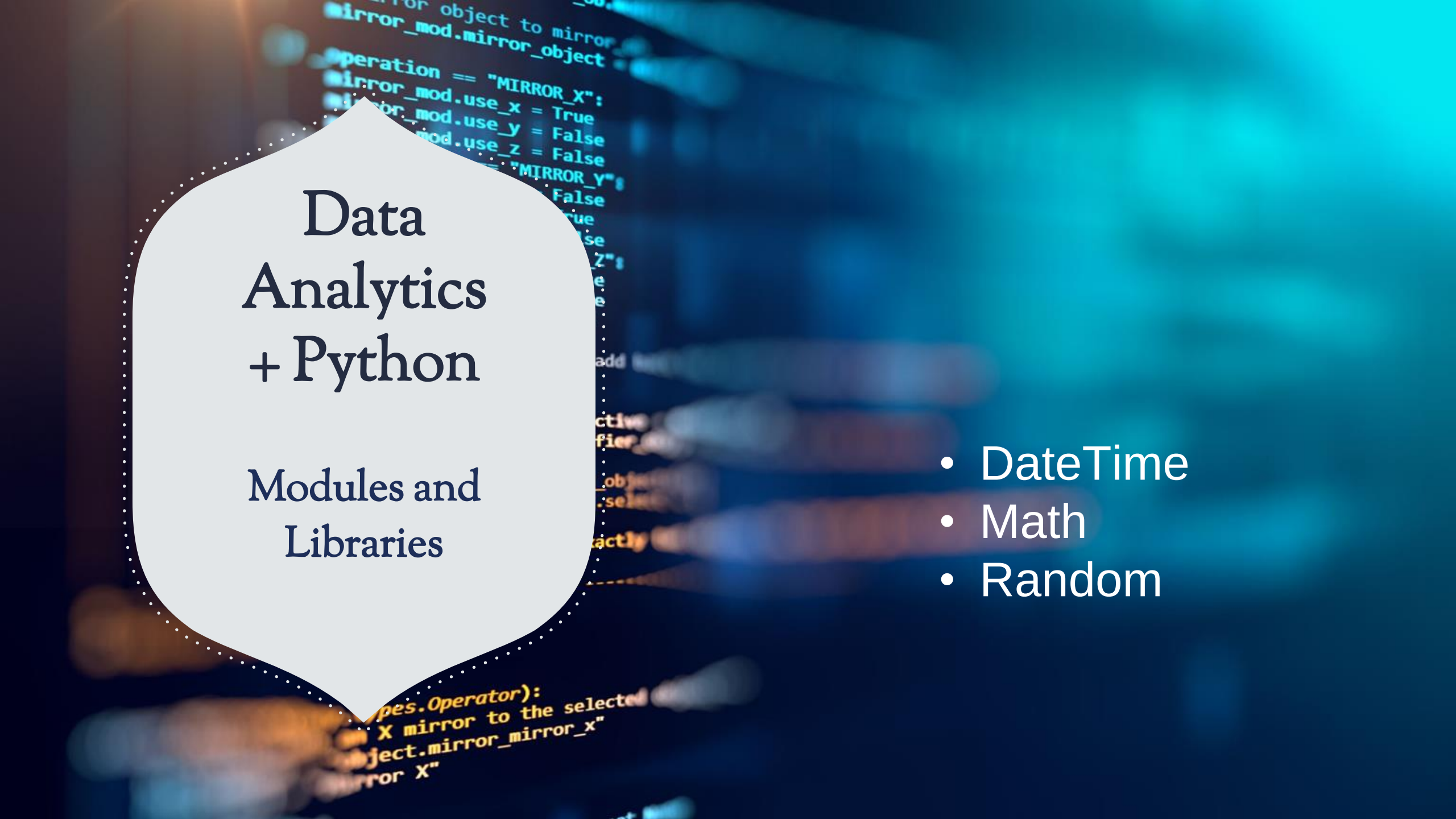


Data Analytics + Python

Modules and Libraries

- DateTime
- Math
- Random

What are Python modules?

LIBRARIES OF PRE-WRITEN CODE
THAT ARE WITHIN PYTHON
TO ACCOMPLISH DIFFERENT GOALS --
REDUCES HAVING TO REWRITE A LOT OF CODE

There are 137,000 Python Libraries, and growing … !

- TensorFlow
- SciPy
- Pandas
- Matplotlib
- Keras
- NetWorkX
- NumPy
- BeautifulSoup
- Scrapy
- PyTorch
- SciKit-Learn
- Eli5

Python Libraries we'll use

- **DateTime** = elegantly handle date and time calculations
- **Math** = advanced functions normally found on calculator
- **Random** = random generator of chance and possibilities
- **Pandas** = (Python Data Analysis) used for data analysis and cleaning of data
- **NumPy** = (Numerical Python) use for numerical computation and multi-dimensional arrays
- **Matplotlib** = a graphic plotting library
- **BeautifulSoup** = used for web crawling and data scraping

Anytime you use a module, you will have to IMPORT it into your program to use it.

```
import {module_name_here}

import datetime
```

Datetime

- Not a data type of its own
- We import the module datetime to work with dates and date objects

%a = weekday, abrev.
%A = weekday, full name
%w = weekday, number
%d = day of month
%b = month, abrev.
%B = month, full name
%m = month as a number
%y = year, short
%Y = year, full

Datetime

```
import datetime

x = datetime.datetime.now()

Y = datetime.datetime(2020, 5, 17)

print(x)
print(Y)
```

Datetime

```
import datetime

x =
datetime.datetime.n
ow()

print(x.year)
print(x.strftime("%
A"))
```

```
import datetime

x =
datetime.datetime(2
018, 6, 1)

print(x.strftime("%
B"))
```

Math Module

Basic Operators

+ = addition

- = subtraction

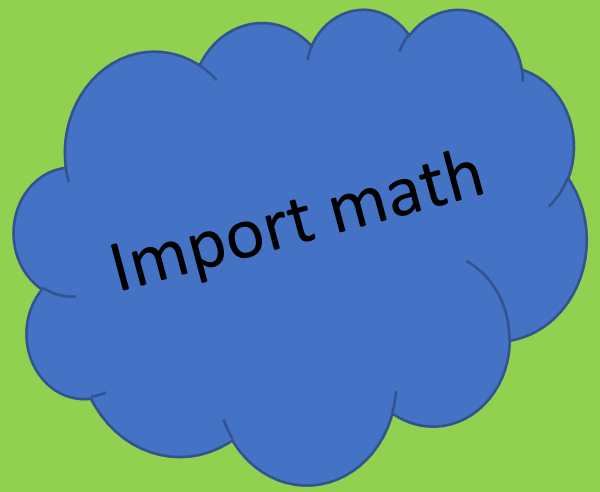
/ = division

* = multiplication

```
x = 39
x += 5
print(x)
```

```
y = 100
y -= 75
print(y)
```

```
print(math.pi)
```



Random Module

- Allows you to use random numbers when needed
- import random

```
prob = random.random()
print(prob)

diceThrow=random.randrange(1,10)
Print(diceThrow)
```