

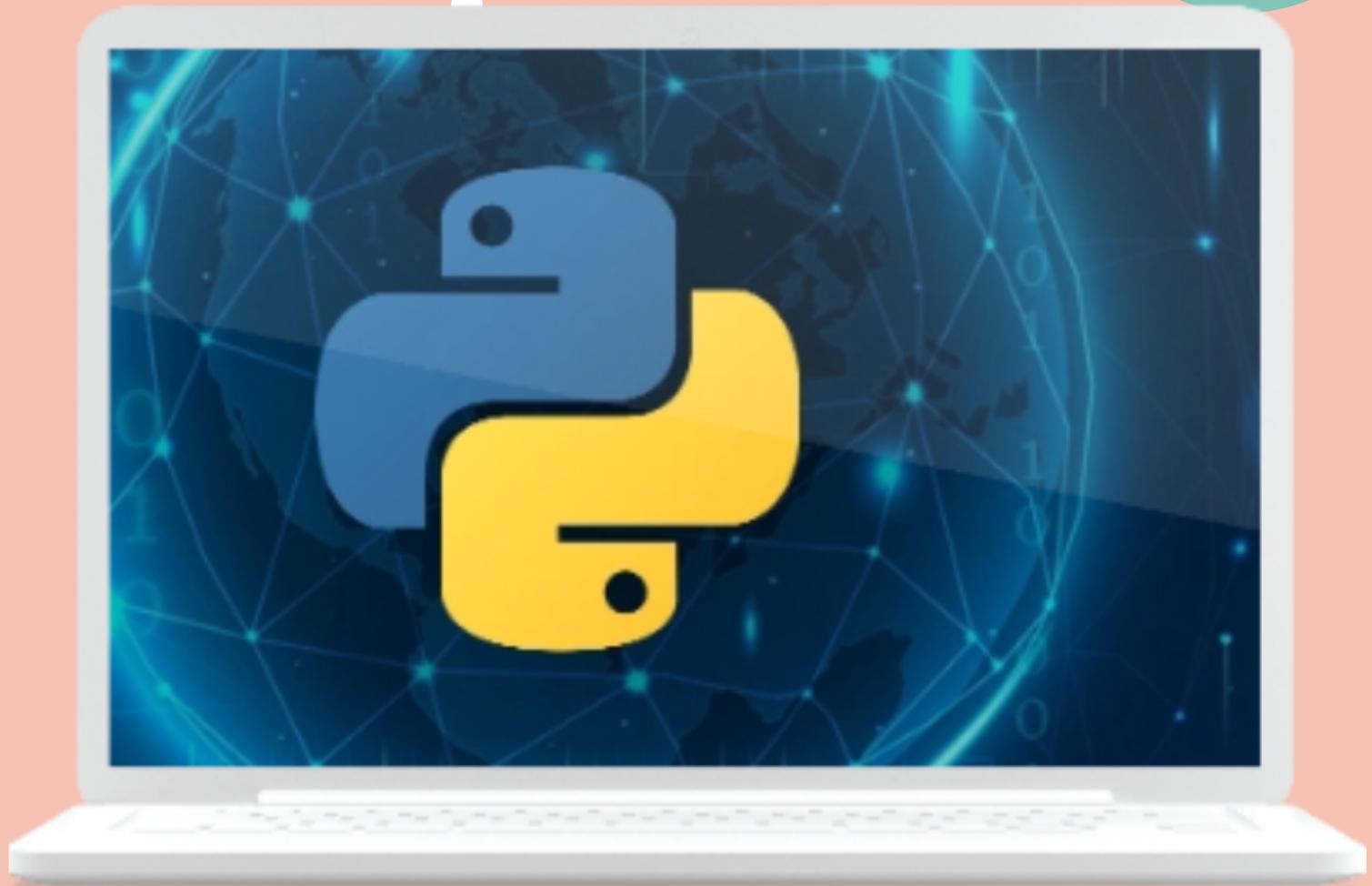
TASK II

ADVANCED DATA TYPE

PRESENTED BY GROUP
WHITESPACE



INTRODUCTION



Python is one of programming language that available in the world. Python is an interpreted, interactive, object-oriented programming language. It incorporates modules, exceptions, dynamic typing, very high level dynamic data types, and classes. It supports multiple programming paradigms beyond object-oriented programming, such as procedural and functional programming. Python is often used as a support language for software developers, for build control and management, testing, and in many other ways. SCons for build control. Buildbot and Apache Gump for automated continuous compilation and testing. Roundup or Trac for bug tracking and project management.

GOALS



LEARN ABOUT ADVANCED
DATA TYPE



OPERATION THAT
AVAILABLE FOR EACH
ADVANCED DATA TYPE



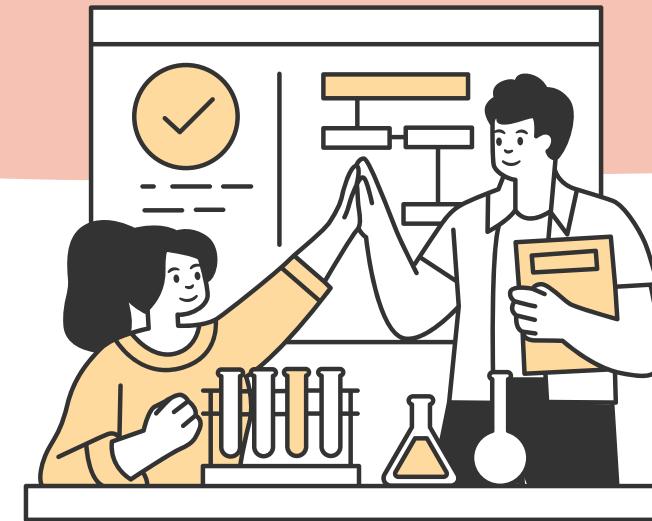
USE CASE FOR EACH
ADVANCED DATA TYPE

ADVANCED DATA TYPE



LIST

A list is an ordered data structure with elements separated by a comma and enclosed within square brackets



TUPLE

The tuple data type is an immutable, ordered data type that allows you to store data in Python

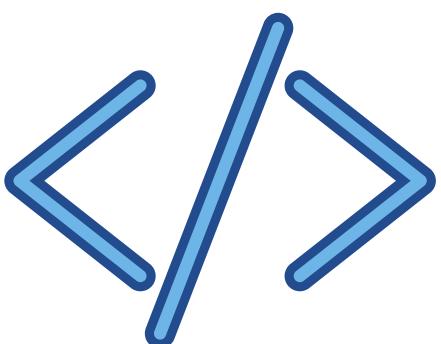
ADVANCED DATA TYPE

DICTIONARY

Python's dictionaries are kind of hash table type. They work like associative arrays or hashes found in Perl and consist of key-value pairs. A dictionary key can be almost any Python type, but are usually numbers or strings. Values, on the other hand, can be any arbitrary Python object

SET

set is an abstract data type that can store unique values, without any particular order



Use case: advanced data type

List

list is one of advanced type data used most cause its flexibility. this kind of data aslo allow us to place a dulicated value so useful for something like matrix in matematic

Tuple

we use tuple when we want to make data that impossible to change like in dictionary type data key

Dictionary

Dictionary is use when we want to call value with keyword we already prepare cause usuallu dictionary use for group data with a lot data make hard to count its index if go with manual



Set

set usually use for matematic use or if we dont want duplicated value

Its Possible
to Use 2
Type Data
Simultaneously

Example :

{"key note":20}
with this key for dictionary
cant be change anymore cause
tuple is immutable



Example list: [7,9.4,True,"Whitespace"]

from example above we can see list using square bracket and contain of group data can be different data type

Example dictionary: {"nama":"Enchards",l:"game ID"}

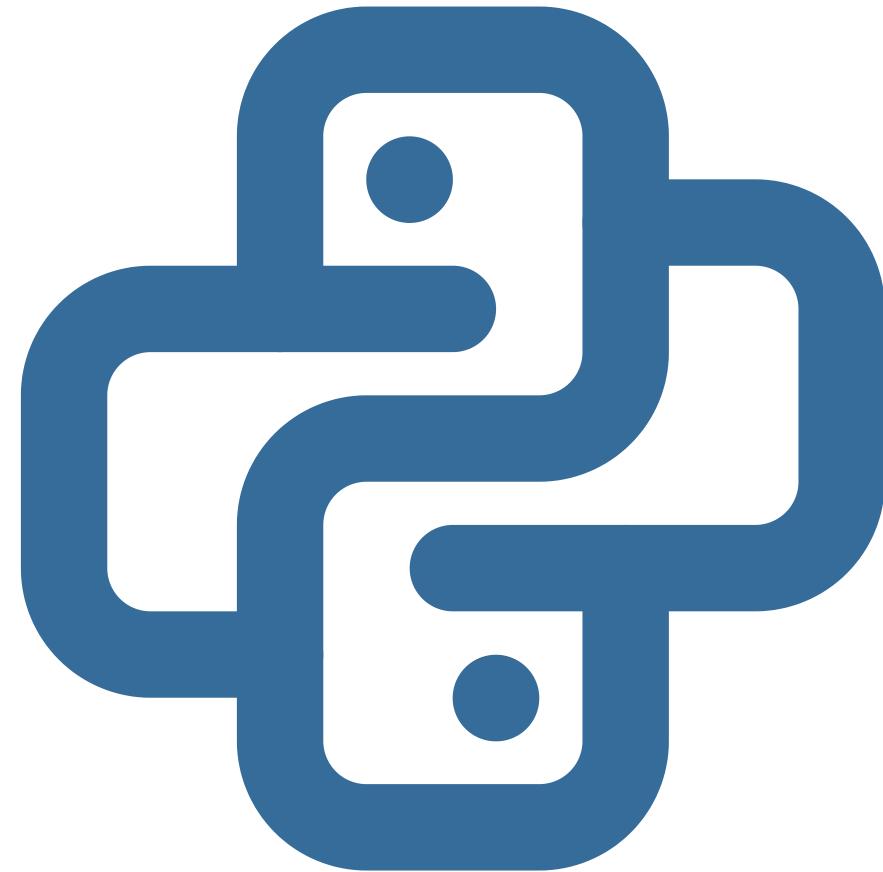
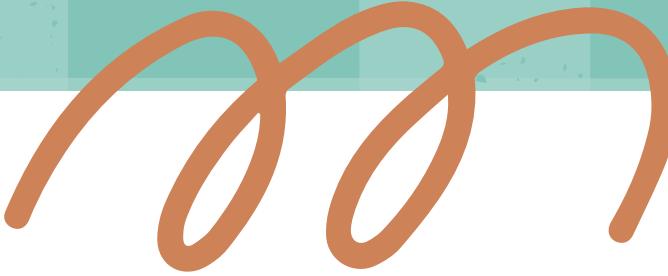
from example above we can see each data pair contain key and value with example 'l' is keyword and 'game ID' is value that will be call

Example tuple: (2,9.8,"white",False)

from example above we can see tuple data type using parentheses and also can contain different data type

Example set: {2.3,6,8,"Value"}

from example above we can see that set contain a unique data so if there duplicated data will delete duplicated data

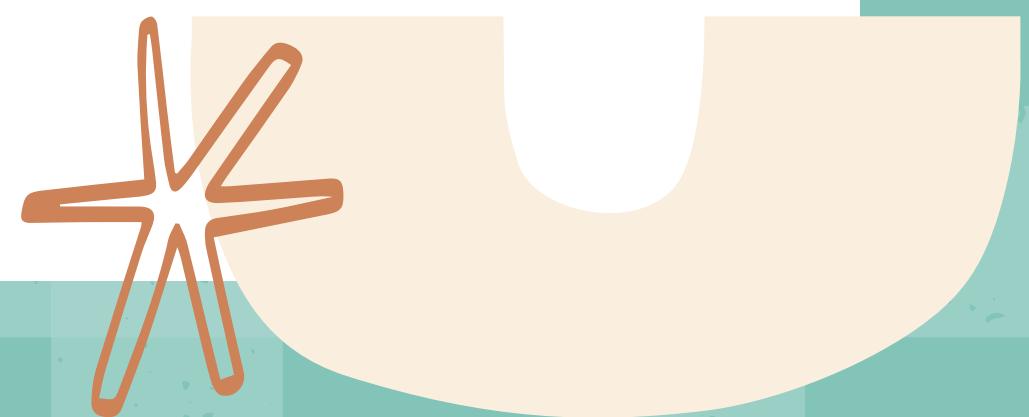


Operation Possible for List Data Type

- slicing
- input new data
- change one of element

Operation Possible for Tuple Data Type

- slicing

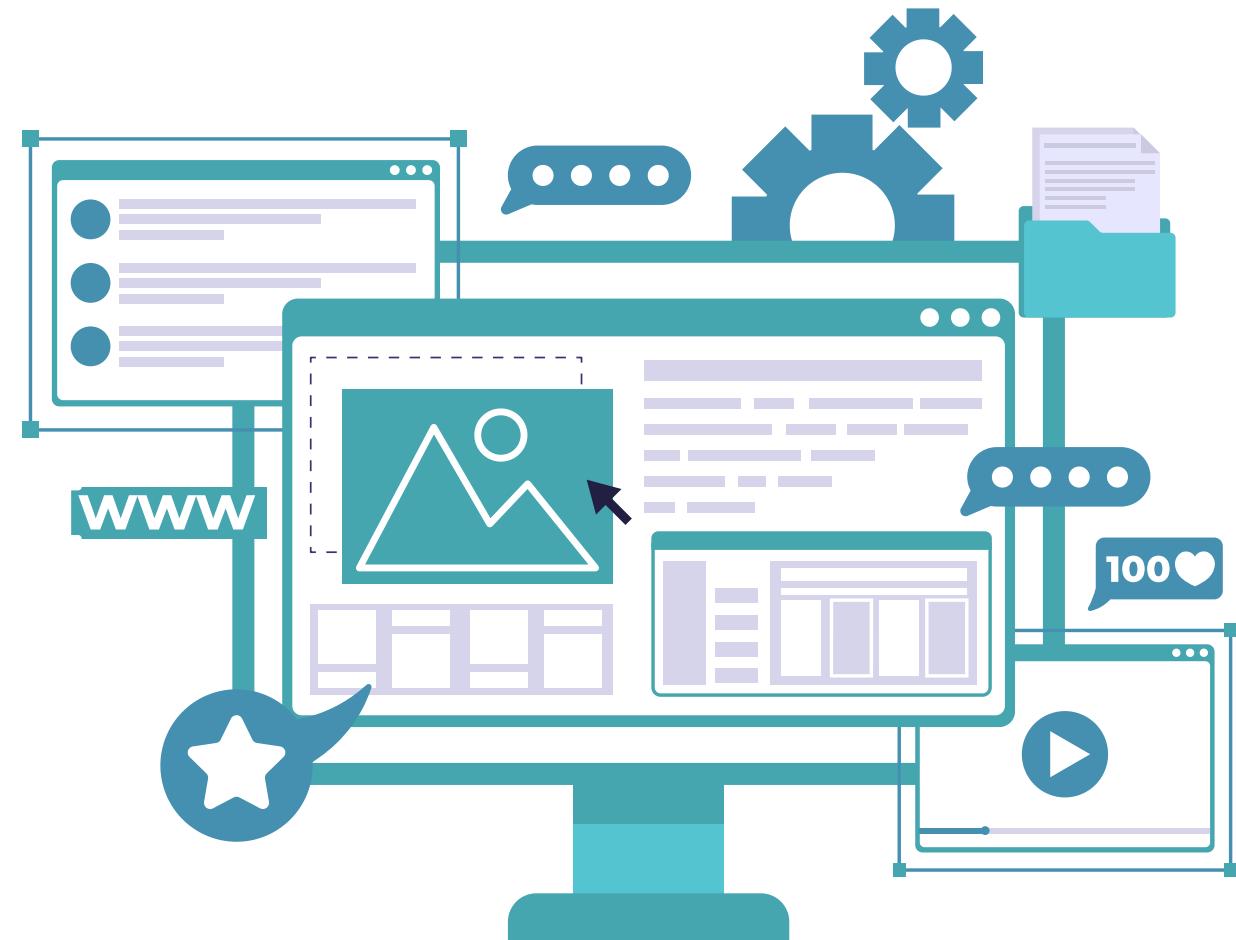


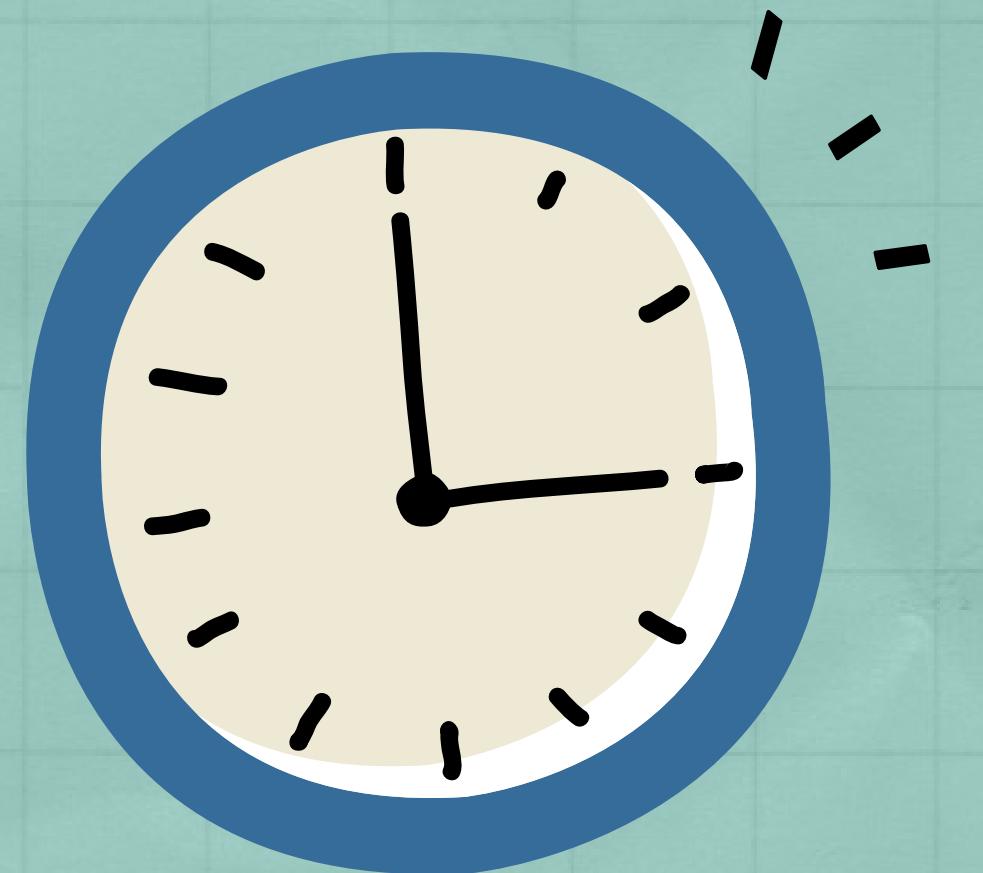
Operation Possible for Dictionary Data Type

- special slicing
- change one of element

Operation Possible for Set Data Type

- mathematical method for et
of number





SLICING

slicing is a way to take a part from group of data. slicing only possible in list, dictionary, and tuple

How To Do Slicing

name variable that already assign
follow up with square bracket that
contain number you want to slice



example:

a[2] will slice group data in python index 2

Slicing Rules

Note :
indexing in python start at
0

1

only one index inside square bracket
mean only call one data that place in that
index

2

to call more than one data use colon with
detail (start data you want to take : end
data you want to take +l : step of the
returned items)

3

Blank in treat as default if blank in start
data mean want to take data from the
beginning , if blank in end data mean
want to take data till the end of the
group data and if blank in step mean
that every first item will be returned in
the result

Example:

For data list :

- `c=[2,1,3,"enchards","siegehart",9.0]`
- `c[1]` output will be 1
- `c[1:4]` output will be 1,3,"enchards","siegehart"
- `c[-1]` output will be 9.0
- `c[0:5:2]` output will be 2,3,"sieghart"

Note for dictionary we not use index but keyword instead.



INPUT NEW VALUE

input new value only available in list data type. this operation use to input external data to group data that already assign before



How To Do Input New Data

With Function :

- append
- extend
- input

Input New Data Rules



1

append function will add one data to group data in the end of group data with format inside parentheses (data you want to input)

2

extend function will add another list data to list in the end of group data with format inside parentheses ([list you want to input])

3

insert function will add one data to specific index with format inside parentheses (index, data you want input)

Example :



1

2

3

```
x=[1,2.3,"user ID"]  
x.append(5)  
output will be  
x=[1,2.3,"user ID",5]
```

```
x=[1,2.3,"user ID"]  
x.extend([5,7,8])  
output will be  
x=[1,2.3,"user ID",5,7,8]
```

```
x=[1,2.3,"user ID"]  
x.insert(1,8)  
output will be  
x=[1,8,2.3,"ganti user"]
```



A pink speech bubble shape containing text and a graphic element. The text reads "CHANGE ONE OF THE ELEMENT". To the right of the text is a graphic of a pencil with a brown and grey striped pattern. A green stylized leaf or branch icon is also present on the right edge of the slide.

Let's say that you want to change
the one item in the list

CHANGE ONE OF THE ELEMENT

How To Do Change One Element

You can then use this method to change
items in a list in Python:

- DEL
- POP
- Remove
- Replace

Change One of The Element Rules

1

Del, you can remove elements by index from the list with the del statement.

2

Remove, you can delete the first item from the list of values whose value is equal to the specified value by remove.

3

Pop, a function that removes the item at the specified index from the list. pop will remove the last value if it doesn't specify a value.

4

x[index]=..., replace element with slice data equal to new data to replace that slice data with new data

Example

1

DEL:

```
a=[2, 4, 8, 10, 12, 14, 16]  
del a[0]  
print(a)  
[4, 8, 10, 12, 14, 16]
```

2

Remove:

```
a=["alice",2, 4, 8, 10, 12]  
a.remove("Alice")  
print(a)  
[2, 4, 8, 10, 12]
```

3

Pop:

```
a=[2, 4, 8, 10, 12, 14, 16]  
print(a.pop(0))  
2  
print(a)  
[4, 8, 10, 12, 14, 16]
```

4

x[index]=value

```
a=[2, 4, 8, 10, 12, 14, 16]  
a[0]=10  
print(a)  
[10,4, 8, 10, 12, 14, 16]
```

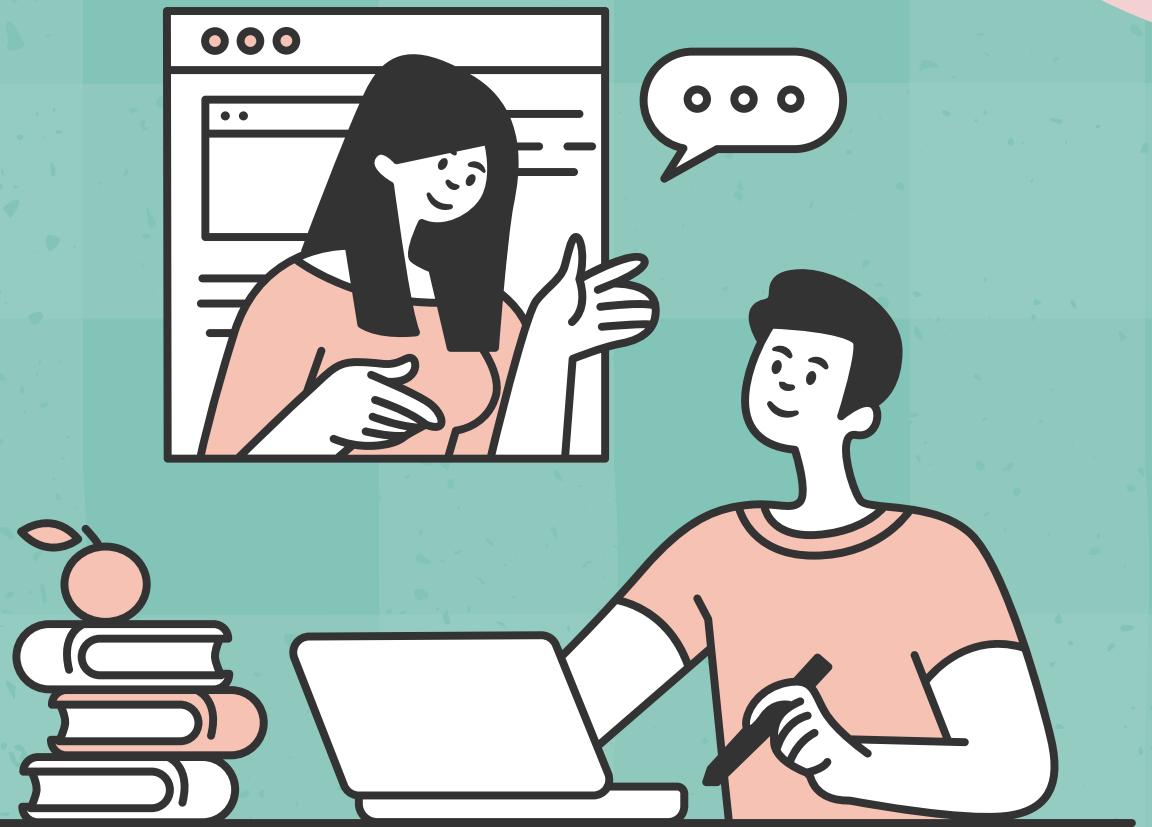




Related Material :

Link github:

<https://github.com/DeanSetyawani/Advanced-Data-type.git>



THANK YOU

DO YOU HAVE ANY QUESTIONS OF US?