PYTHON FUNDAMENTALS

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Bootcamp

June 2024

AGENDA

- Review yesterday's lab topics
  - Lists
  - Tuples
  - Mutability vs Immutability
  - Dictionaries
  - Sets
- Lab Session 3

LEARNING OBJECTIVES

During this Bootcamp, you will learn:

Day 1:

- ✓ Variables
- ✓ Datatypes (string, int, float, bool)

Day 2:

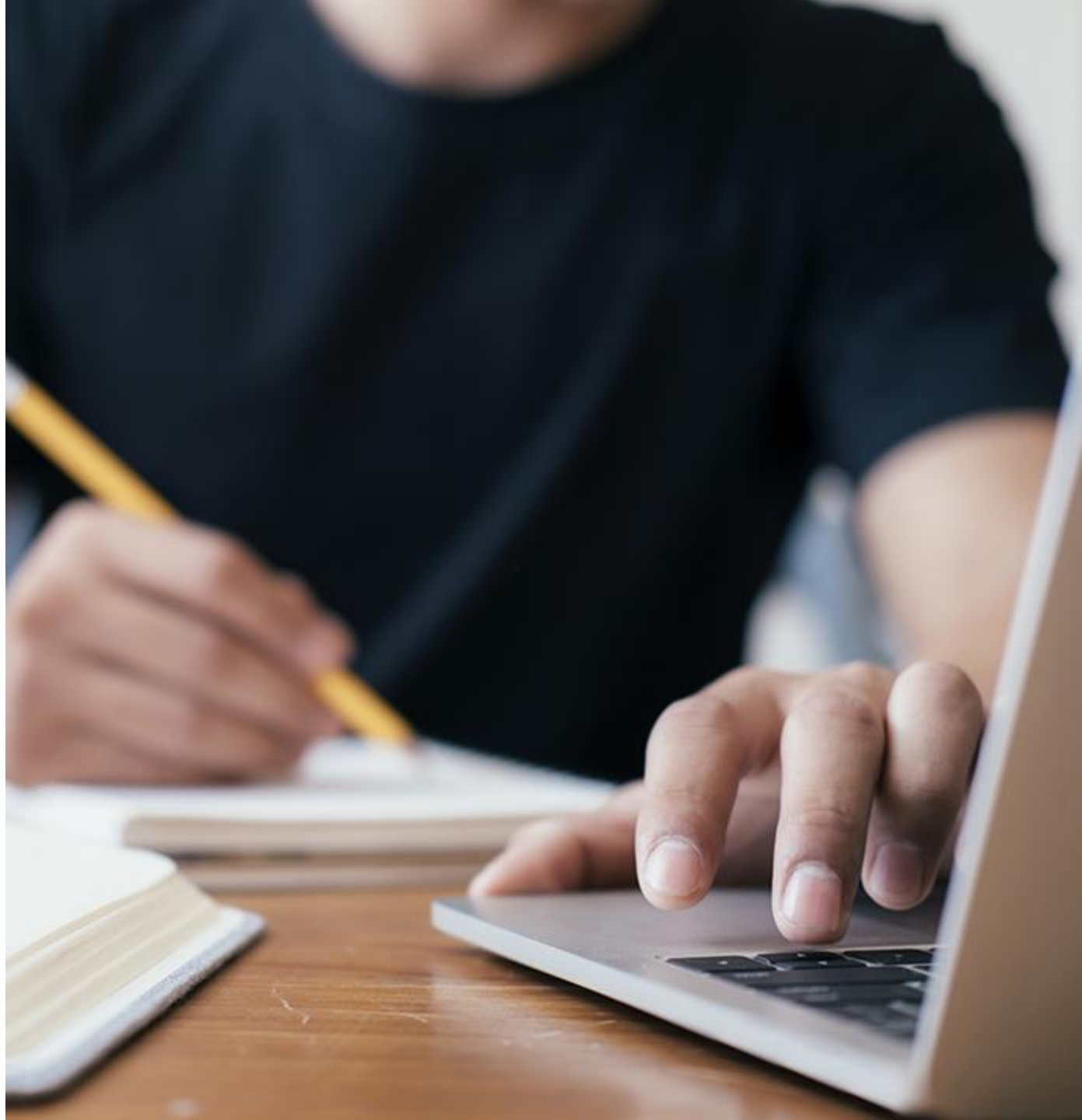
- ✓ Data structures (lists, tuple, dict, set)

Day 3:

- Flow control
  - If / else statements
  - For loops

Day 4:

- Functions
  - User defined functions
  - Modules
  - Packages



LISTS

```
ingredients = ["spam", "ham", "eggs", "cheese"]

# Index
ingredients[0]

# Slice
ingredients[0:2]

# Append
ingredients.append("mushroom")

# Sorting (in place)
ingredients.sort()
```

TUPLES

```
# The Dutch Flag NL
first_color = “red”
second_color = “white”
third_color = “blue”

# Tuple packing
flag = (first_color, second_color, third_color)

# Tuple unpacking
first_color, second_color, third_color = flag

# Methods
flag.count("red")
flag.index("blue")
```

MUTABILITY VS IMMUTABILITY

Immutable		Mutable
bool		list
int		dict
float		set
str		
tuple		

DICTIONARIES

```
person = {"name": "Alice",
          "age": 42,
          "email": "alice@gmail.com"}

# Methods
person.keys()
person.values()
person.items()

# Getting a value
person["age"]
```

SETS

```
characters = ["a", "b", "b", "c"]
unique_chars = set(characters)

print(unique_chars)       # Prints {'a', 'b', 'c'}

set1 = {"a", "b", "c", "d"}
set2 = {"b", "d", "d", "e"}

set1.intersection(set2) # Prints {'b', 'd'}
set1.difference(set2)   # Prints {'a', 'c'}
set1.union(set2)        # Prints {'a', 'b', 'c', 'd', 'e'}
set1.issubset(set2)     # Prints False
set1.symmetric_difference(set2)  # Prints {'a', 'c', 'e'}
```

LAB SESSION 3

Topics:

- Comparisons
- Flow control:
  - ”if / else” statements
  - “for” loops
  - “while” loops

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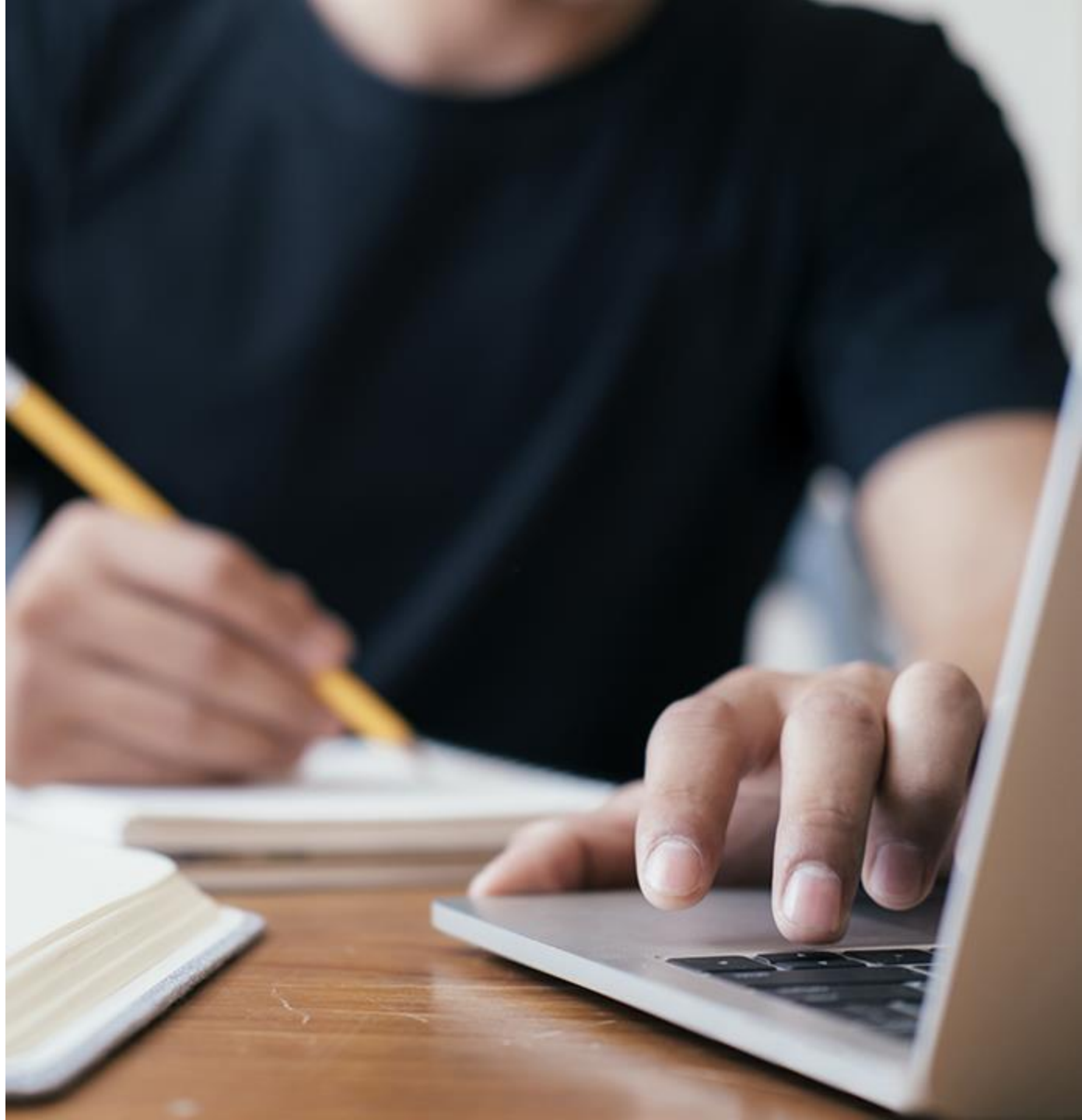

THE END

See you tomorrow!