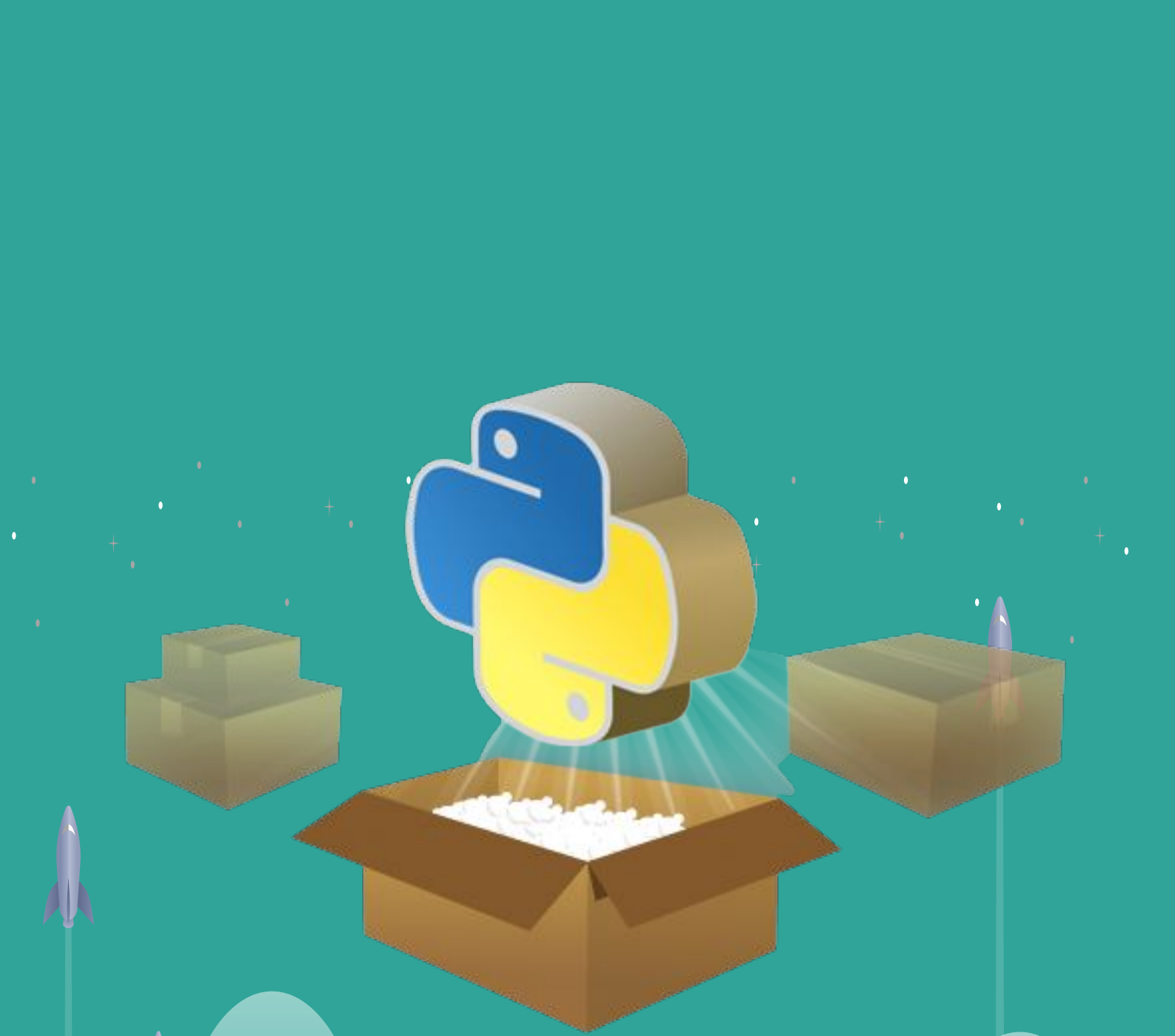

Python - Variables

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ALHAZEN ACADEMY

#JagoIT

READY TO START?

السلام عليكم

Doa ilmu bermanfaat

رَبِّ زِدْنِي عِلْمًا وَارْزُقْنِيْ فَهْمًا وَاجْعَلْنِيْ مِنَ الصَّالِحِيْنَ

Robbi zidnii 'ilmaa warzuqnii fahmaa, waj'alnii minash-shoolihiin

"Ya Allah, tambahkanlah aku ilmu dan berikanlah aku rezeki akan kepahaman, dan jadikanlah aku termasuk golongan orang-orang yang saleh."

As Saffat ayat 6

إِنَّا زَيَّنَّا السَّمَاءَ الدُّنْيَا بِزِينَةٍ الْكَوَاكِبِ

Sesungguhnya Kami telah menghiasi langit dunia (yang terdekat) dengan hiasan (berupa) bintang-bintang.

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PAY ATTENTION!

RULES

for Teacher & Student

- Prepare Laptop / PC
- Focus & Listen carefully
- Open Cam and Mic
- Share screen project
- Good Communication
- Respect and kindness
- Do your best

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In this lesson, you will learn about

1. Variable Name
2. Multiple Values
3. Output Variable
4. f-string
5. Escape Characters
6. String Methods

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Introduction

Variables are containers for storing data values.

Python has no command for declaring a variable. A variable is created the moment you first assign a value to it.

If you ever learn math, it will look the same like this

```
a = 15
b = 20
c = a + b = ?
```

Variable a, is a container of value 15

Variable b, is a container of value 20

Variable c, is a container of addition between a and b

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Variable Name

There are some rules for a variable name

```
# Varible name rules

# start with a letter or the underscore character
# cannot start with a number
# only contain:
    # alpha-numeric characters
    # underscores (A-z, 0-9, and _ )
# case sensitive

# Legal variable name
studentname = "Jaka"
student_name = "Jaka"
_studentname = "Jaka"
studentName = "Jaka"
studentname1 = "Jaka"
STUDENTNAME = "Budi"
# studentname and STUDENTNAME are different

# Illegal variable name
# will return error
1studentname = "Budi"
student&name = "Budi"
student-name = "Budi"
student name = "Budi"
```

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Multiple Values

Python allows us to assign values to multiple variables and one value for some variables

```python
# Assign Multiple Variables

# many values for many variables
a, b, c = 34, 56, 67

# the same like
# a = 34
# b = 56
# c = 67

# many varibles for same value
d = e = f = 100

# the same like
# d = 100
# e = 100
# f = 100

# Unpacaking a collection
fruits = ["apple", "banana", "cherry"]
x, y, z = fruits

# the same like
# x = apple
# y = banana
# z = cherry
```

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Output Variables

It means we can display a value from a variable

```python
# Output Variables

a, b, c = 35, 56, 67
print(a)
print(b)
print(c)

student_name = "Jaka"
print(student_name)

firstname = "Mala"
lasname = "Puspita"

# output more than one variables
print(firstname, lastname)
# using comma
# will create white space in between

# concatenate more variables
print(firstname + lastname)
# using + symbol
# will not create white space in between
# unless we concatenate another white space

print(firstname + " " + lastname)
# will concatenate 3 objects
```

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f-string

Python 3.6 introduced a new string formatting mechanism known as Literal String Interpolation or more commonly as F-strings

```python
# f-string

fisrtname = "Jaka"
lastname = "Antara"
age = 15

print("Hello World!")
# f letter should be added before quotation mark
print(f"My name in {firstname} {lastname}")
# calling a variable using curly bracket
print(f"You can call me {firstname}")
print(f"I am now {age} years old")

# can be used to directly operate numbers

num1 = 15
num2 = 85
print(f"{num1} + {num2} = {num1 + num2}")

# display repeated symbol
print(f"{10 * '='}")
print(f"{10 * '-='}")
print(f"{10 * '#-'}")
print(f"{10 * '#--'}")
```

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Escape Character

To insert characters that are illegal in a string, use an escape character.

An escape character is a backslash \ followed by the character you want to insert.

For example if we want to use double qoutes inside a double quotes, it will return error if we do not use escape character

```
# without escape character

# for example, we want to display a text
# "Python" is a name of programming language
print(""Python" is a name of programming language")
# it will return error

# there is another way to handle it
# use a different quotes (single or double)
print('"Python" is a name of programming language')
# it will not return error
```

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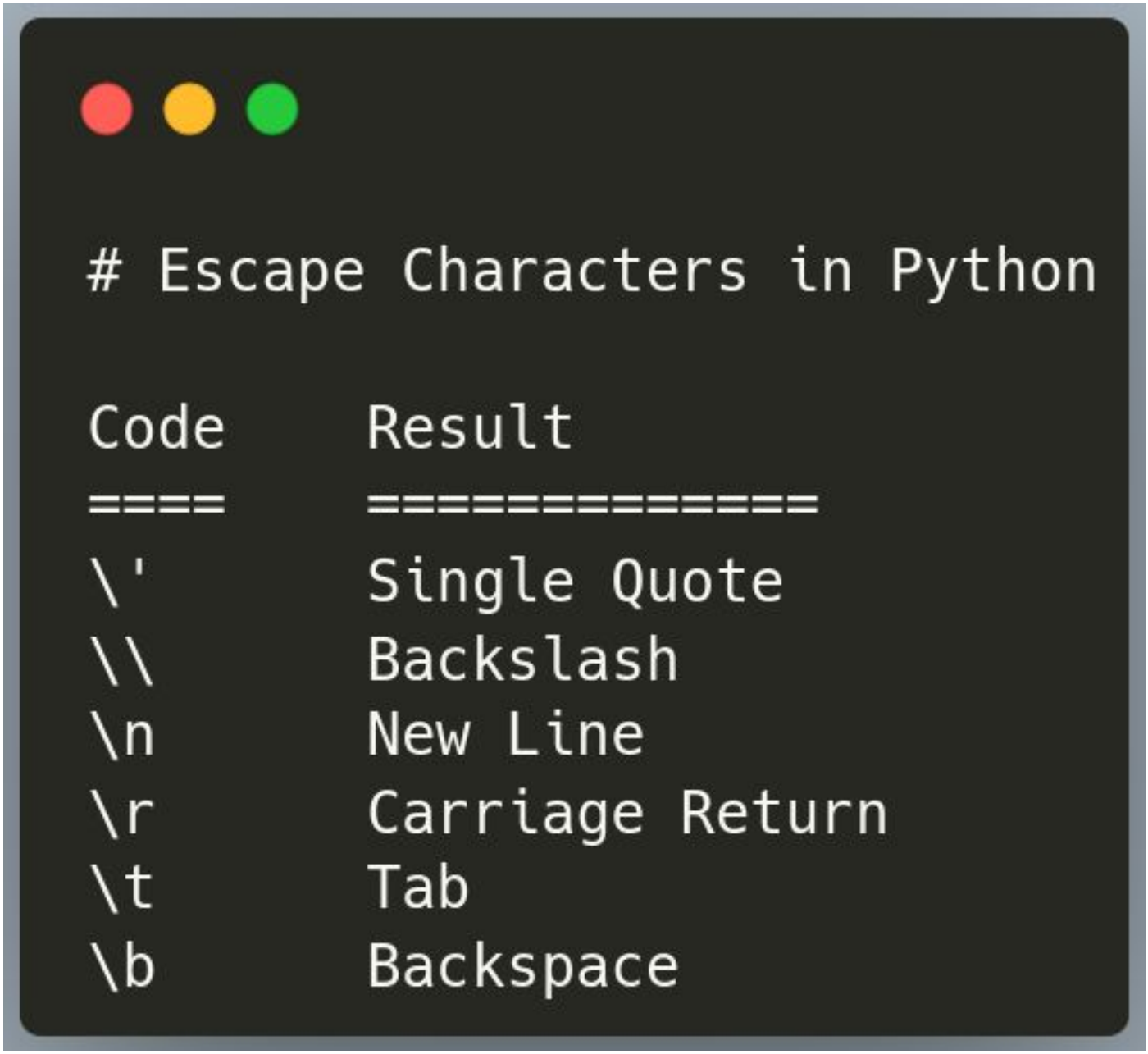
Escape Character



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Escape Character

```python
# Escape Character Example

print("\"Hello World!\"")
# output :
# "Hello World!"
print('\'Hello World!\'')
# output
# 'Hello World!''
print("Hello\\World!")
# output :
# Hello\World!
print("Hello\nWorld!")
# output :
# Hello
# World
print("Good\bMorning!")
# output :
# GooMorning
print("Hello\tWorld!")
# output :
# Hello   World!
```

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String Methods

String is a data type used in programming, that is used to represent text rather than numbers.

Since string is created as an object, it has many methods that can be used to modify the text itself

```python
# String Methods

name = "Jaka Antara"

# capitalize the first letter
print(name.capitalize())

# change all letter to uppercase
print(name.upper())

# change all letter to lowercase
print(name.lower())

# split them into a list
print(name.split())

# swap between lowercase and uppercase
print(name.swapcase())
```

More string method can be found here :
https://www.w3schools.com/python/python_strings_methods.asp

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Project

Let's create a project based on the case!

Case = Create a Registration Form

- Create a new file called registration-form.py
- make some inputs to accept values
  - name, prompt = Enter your name
  - address, prompt = Enter your address
  - email, prompt = Enter your email
- print name, address and email at the end of the program and tell to user with "Your registration is successful" message

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Conclusion

- Variables are containers for storing data values.
- Python allows us to assign values to multiple variables and one value for some variables
- Variable values can be displayed using print() function
- Python 3.6 introduced a new string formatting mechanism known as Literal String Interpolation or more commonly as F-strings
- To insert characters that are illegal in a string, use an escape character.
- Since string is created as an object, it has many methods that can be used to modify the text itself

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