PYTHON

PYTHON GET STARTED

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Outline

1. Demo of Hello world
2. Comments and Literals
3. Indentation
4. Python Code Execution

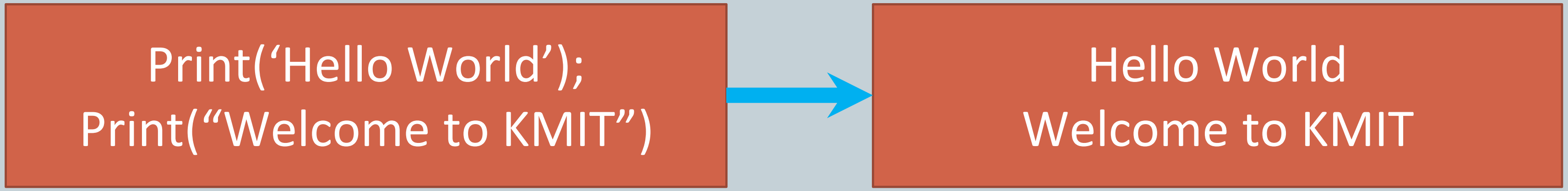
Recap

1. What is Python?
2. Why Python?
3. Python Applications
4. Python Installation

Demo of Hello World

Every character in Python should be enclosed within single or double quotes

Output after running helloworld.py



```
Print(‘Hello World’);
Print(“Welcome to KMIT”)
```

```
Hello World
Welcome to KMIT
```

Input and Output

- To perform I/O task in Python there are two built-in functions.
  - print()
  - input()
- Widely used for standard input and output operations respectively.

Taking Input in Python

- Developers often have a need to interact with users, either to get data or to provide some sort of result.
- Python provides us with inbuilt function to read the input from the keyboard.
  - **input (prompt)**
- The input() function takes a single optional argument
- **prompt (Optional)** - a string that is written to standard output (usually screen) without trailing newline

Comments and Literals

Comments: Any text to the right of **#** symbol is mainly used as notes for the readers. Statements on right side of **#** doesn’t get executed. It gives us more information about function

Bulk Comments: Enclose the code in triple quoted strings(“””)

Literal Constants: Any number or character, or set of characters

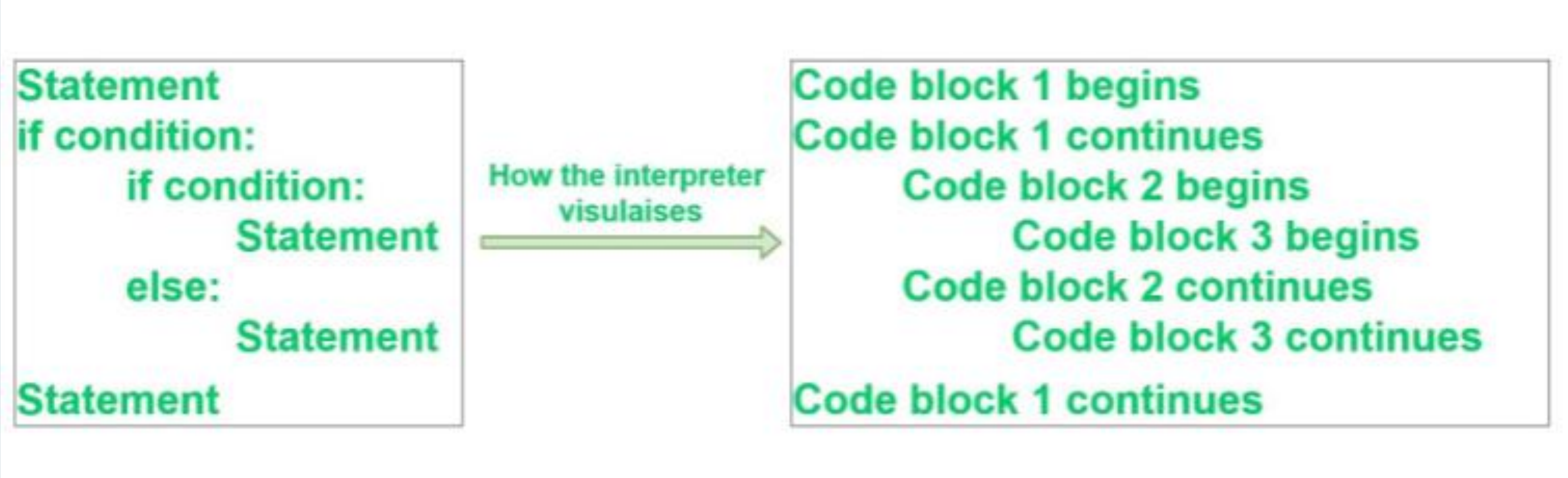
```
#Comment

‘ ‘ ‘
Bulk Comments
Multiline Comments
‘ ‘ ‘

2
```

Indentation

In simple terms indentation refers to adding white space before a statement.



```
Statement
if condition:
        if condition:
                Statement
        else:
                Statement
Statement
```

```
Code block 1 begins
Code block 1 continues
        Code block 2 begins
                Code block 3 begins
        Code block 2 continues
                Code block 3 continues
Code block 1 continues
```

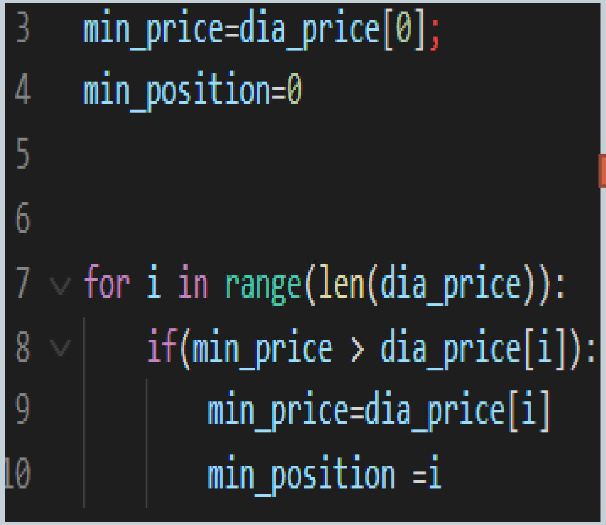
Source credit: https://www.geeksforgeeks.org/

Indentation Rules

- The first line of python code cannot have Indentation.
- Indentation is mandatory in python to define the blocks of statements.
- The number of spaces must be uniform in a block of code.
- It is preferred to use whitespaces instead of tabs to indent in python.

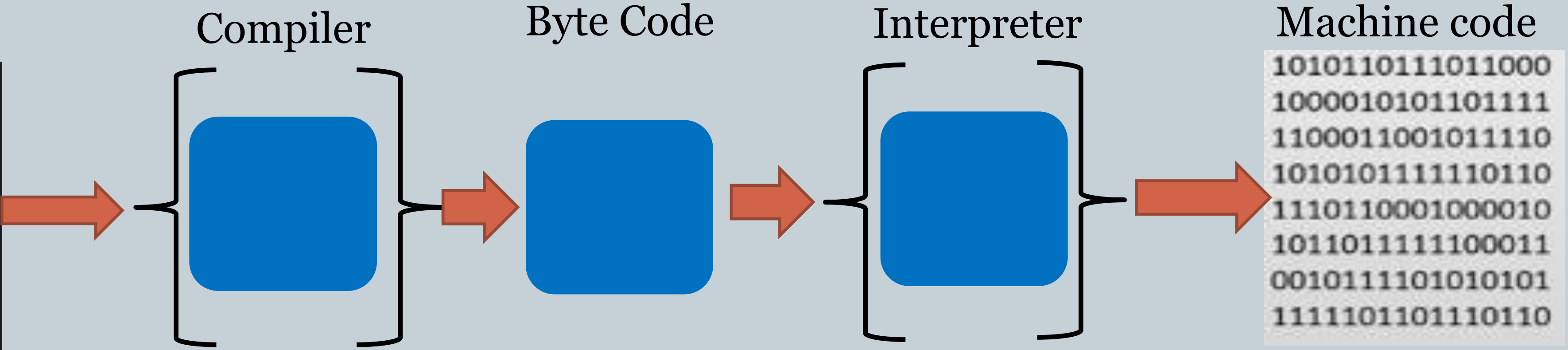
Python Compilation and Execution Process

Python code(.py file)



```
min_price=dia_price[0];
min_position=0


for i in range(len(dia_price)):
    if(min_price > dia_price[i]):
        min_price=dia_price[i]
        min_position =i
```



Compiler

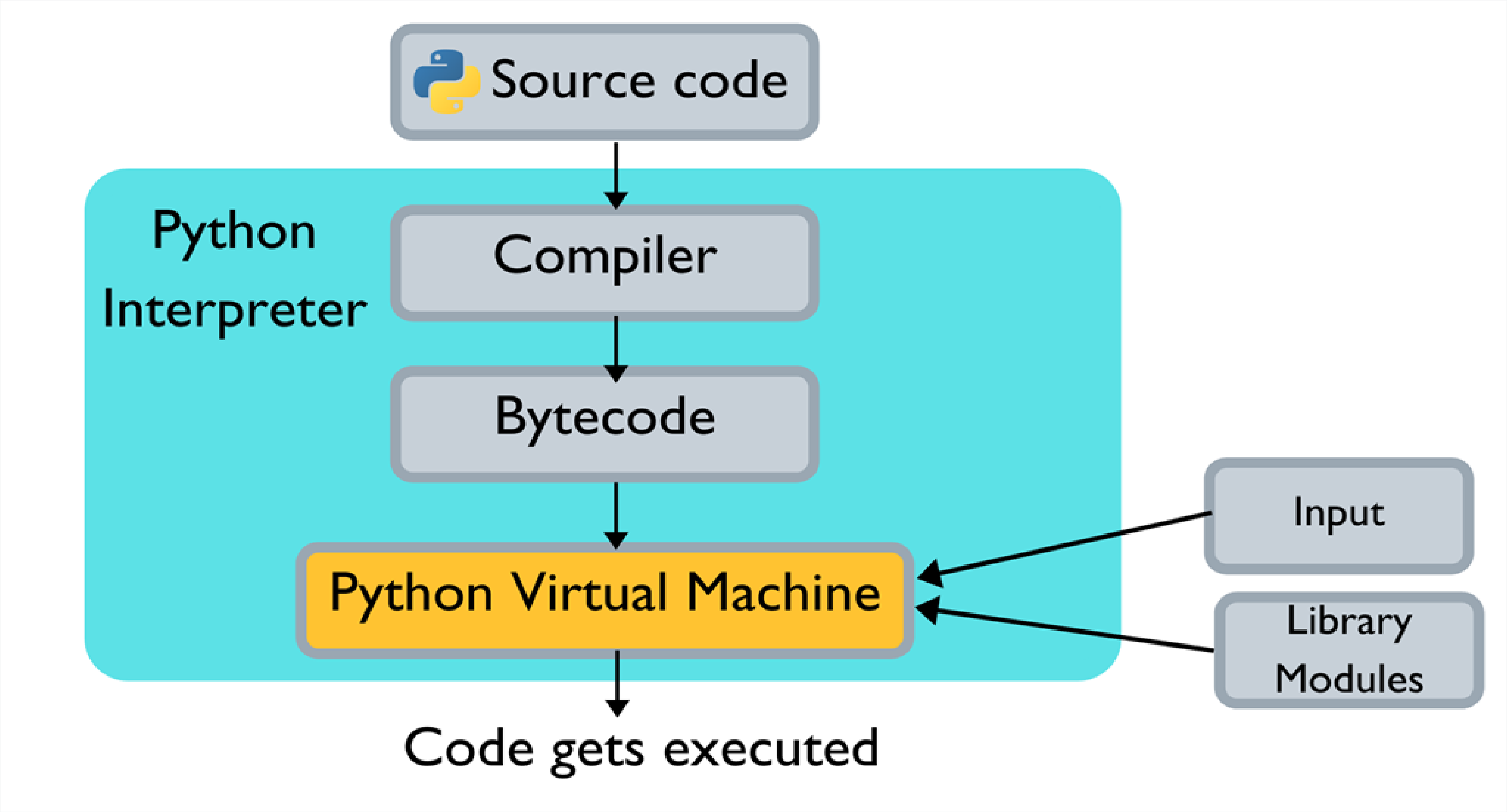
Byte Code

Interpreter

Machine code

```
1010110111011000
1000010101101111
1100011001011110
1010101111110110
1110110001000010
1011011111100011
0010111101010101
1111101101110110
```

Python Compilation and Execution Process



Source credit: https://www.c-sharpcorner.com/article/why-learn-python-an-introduction-to-python/

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Variables

How do you think the value is assigned?

Assigning multiple values

Input

```
a, b = 100, 200
print(a)
# 100
print(b)
# 200
```

Assigning a single value

Input

```
a=10
name=‘Pooja’
salary=200.3
print (a)
print(name)
print(salary)
```

Tokens

Keywords

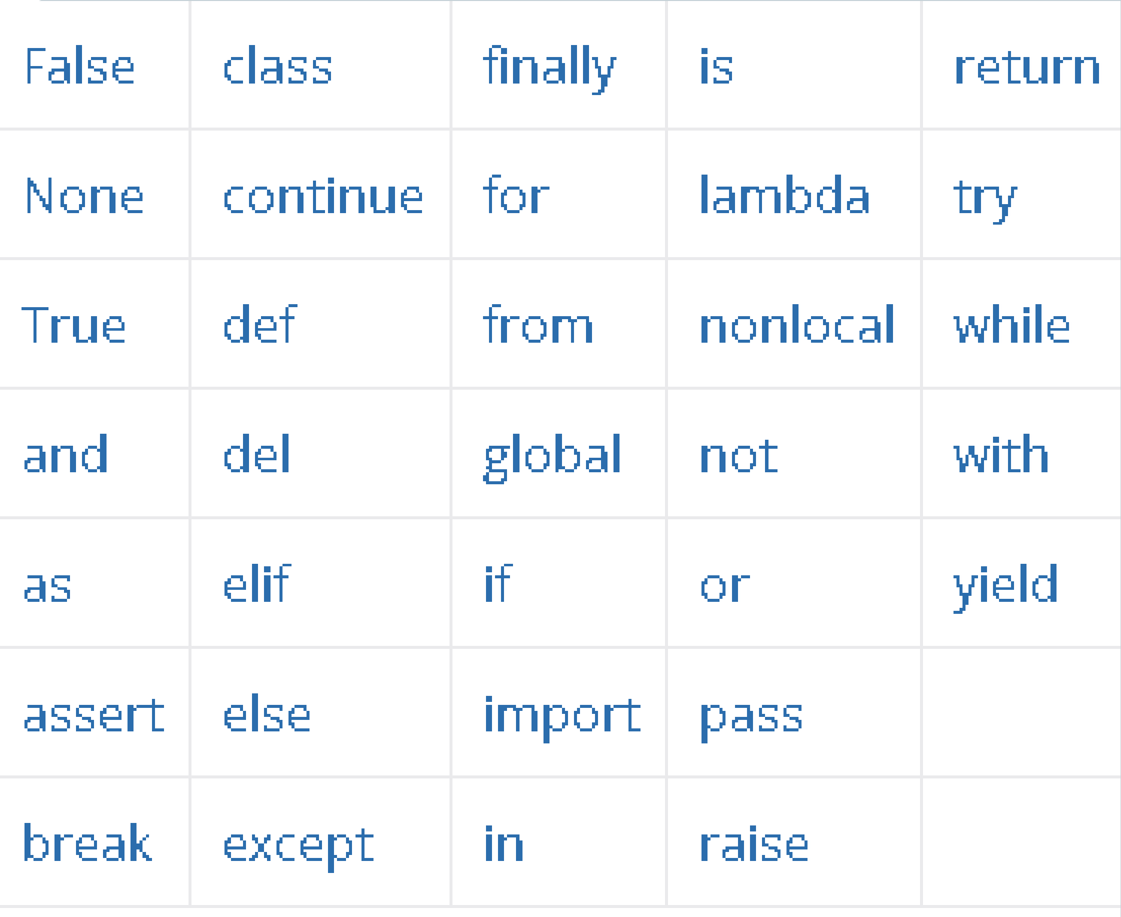
Identifiers

Literals

Operators

Keywords

- Python keywords are special reserved words
- Conveys a special meaning to the compiler/interpreter
- Each keyword have special meaning and special operation
- **NEVER** use it as a variable.



False	class	finally	is	return
None	continue	for	lambda	try
True	def	from	nonlocal	while
and	del	global	not	with
as	elif	if	or	yield
assert	else	import	pass	
break	except	in	raise	

Source credit: https://www.geeksforgeeks.org/

Identifiers

- Identifiers are the name used to identify a variable, function, class or an object.
- Rules defined for naming and identifier
  - An identifier starts with a letter A to Z or a to z or an underscore (_) followed by zero or more letters.
  - It cannot start with digits and special characters.
  - Python is case-sensitive, and so are Python identifiers. Name and name are two different identifiers.

Literals

Literal is a raw data given in a variable or constant.

- String Literal
- Numeric Literal
- Special Literal
- Boolean Literal

String Literal

- A string literal is a sequence of characters surrounded by quotes.
- We can use both single, double or triple quotes for a string.
- And, a character literal is a single character surrounded by single or double quotes.

```
strings = "This is Python"

char = "C"

multiline_str = """This is a

multiline string with more

than one line code."““
```

Numerical Literal

- Numeric Literals are immutable (unchangeable).
- Numeric literals can belong to 3 different numerical types
  - Integer,
  - Float,
  - Complex.

```
a = 0b1010 #Binary Literals
b = 100 #Decimal Literal
c = 0o310 #Octal Literal
d = 0x12c #Hexadecimal Literal

#Float Literal
float_1 = 10.5
float_2 = 1.5e2

#Complex Literal
x = 3.14j

print(a, b, c, d)
print(float_1, float_2)
print(x, x.imag, x.real)
```

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Boolean Literal

A Boolean literal can have any of the two values

- ○True
- ○False

```
x = (1 == True)

y = (1 == False)

a = True + 4

b = False + 10


print("x is", x)

print("y is", y)

print("a:", a)

print("b:", b)
```

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Special Literals

- Python contains one special literal i.e. **None.**
- We use it to specify to that field that is not created.

```
drink = "Available“
food = None
x=drink
if x == drink:
    print(drink)
else:
    print(food)
```

Exercise

1. Create a script for the following data:

    19os_marks=86

    Phy=67

    Maths=89

    I_Year_c=78

    First_Name="Sree"

    Middle_Name="Ram"

    Last_Name="Mohan"

    $python_cost=560

2. Save the script name as "variables.py"

3. Check valid statements if it is valid print it using print() function.

Exercise

1. Find out which of the statements are valid statement

    product_name="python"

    global=48

    None="Python"

    local="San Diego"

    nonlocal="Mexico"

2. Save the script name as "py_keyword.py"

3. Display the valid statements and remove invalid statement

Questions?

Thank you.