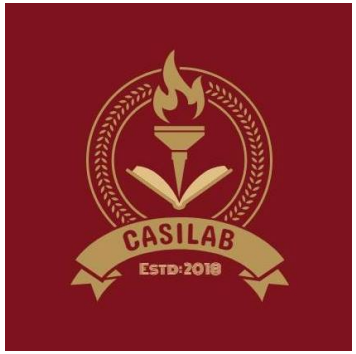

Tenets of Python Programming (En route to IBM-Q)

Surajit Sen
(Email: ssen55@yahoo.com)

Department of Physics
Guru Charan College, Silchar 78804, India
Centre of Advanced Studies & Innovation Lab
18/27 Kali Mohan Road, Tarapur, Silchar 788003, India

Overview

Overview

- Introduction

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- Introduction
- Arithmetic Operation

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- Operator Assignment

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- Variable Assignment

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- Container

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- Some Simple Programmes (Consult Python-Jupyter Worksheets)

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- From Quantum Gates to Quantum Computer

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- IBM Q-Experience (Application of Python Programming in Quantum Information Science)
- Conclusion

Mathematical Operation

Mathematical Operation

- Expression (10±7, 10∗7, 10/7, 10 //7, 10%7, 10∗∗7)

Mathematical Operation

- Expression (10±7, 10∗7, 10/7, 10 //7, 10%7, 10∗∗7)
- Operator (+, -, ∗, /, //, %, ∗∗)

Mathematical Operation

- Expression (10±7, 10∗7, 10/7, 10 //7, 10%7, 10∗∗7)
- Operator (+, -, ∗, /, //, %, ∗∗)
- Operand (10, 7)

Math Operation & Their Prioritization

Mathematical Operation

- Expression (10±7, 10∗7, 10/7, 10 //7, 10%7, 10∗∗7)
- Operator (+, -, ∗, /, //, %, ∗∗)
- Operand (10, 7)

Math Operation & Their Prioritization

- Parenthesis ()

Mathematical Operation

- Expression (10±7, 10∗7, 10/7, 10 //7, 10%7, 10∗∗7)
- Operator (+, -, ∗, /, //, %, ∗∗)
- Operand (10, 7)

Math Operation & Their Prioritization

- Parenthesis ()
- Exponentiation ∗∗

Mathematical Operation

- Expression (10±7, 10∗7, 10/7, 10 //7, 10%7, 10∗∗7)
- Operator (+, -, ∗, /, //, %, ∗∗)
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Math Operation & Their Prioritization

- Parenthesis ()
- Exponentiation ∗∗
- Multiplication ∗

Mathematical Operation

- Expression (10±7, 10∗7, 10/7, 10 //7, 10%7, 10∗∗7)
- Operator (+, -, ∗, /, //, %, ∗∗)
- Operand (10, 7)

Math Operation & Their Prioritization

- Parenthesis ()
- Exponentiation ∗∗
- Multiplication ∗
- Floor Division / & Division //

Mathematical Operation

- Expression (10±7, 10∗7, 10/7, 10 //7, 10%7, 10∗∗7)
- Operator (+, -, ∗, /, //, %, ∗∗)
- Operand (10, 7)

Math Operation & Their Prioritization

- Parenthesis ()
- Exponentiation ∗∗
- Multiplication ∗
- Floor Division / & Division //
- Modulo %

Mathematical Operation

- Expression (10±7, 10∗7, 10/7, 10 //7, 10%7, 10∗∗7)
- Operator (+, -, ∗, /, //, %, ∗∗)
- Operand (10, 7)

Math Operation & Their Prioritization

- Parenthesis ()
- Exponentiation ∗∗
- Multiplication ∗
- Floor Division / & Division //
- Modulo %
- Addition, Substraction +, −

Boolean Operation

Boolean Operation

- True

Boolean Operation

- True
- False

Boolean Operation

- True
- False
- Logical And

Boolean Operation

- True
- False
- Logical And
- Logical Or

Boolean Operation

- True
- False
- Logical And
- Logical Or
- Logical Not

Comparison Operation

Boolean Operation

- True
- False
- Logical And
- Logical Or
- Logical Not

Comparison Operation

- Equal (=)

Boolean Operation

- True
- False
- Logical And
- Logical Or
- Logical Not

Comparison Operation

- Equal (=)
- Not-equal (≠)

Boolean Operation

- True
- False
- Logical And
- Logical Or
- Logical Not

Comparison Operation

- Equal $(=)$
- Not-equal $(\neq)$
- Greater Than $(>)$

Boolean Operation

- True
- False
- Logical And
- Logical Or
- Logical Not

Comparison Operation

- Equal $(=)$
- Not-equal $(\neq)$
- Greater Than $(>)$
- Less Than $(<)$

Boolean Operation

- True
- False
- Logical And
- Logical Or
- Logical Not

Comparison Operation

- Equal $(=)$
- Not-equal $(\neq)$
- Greater Than $(>)$
- Less Than $(<)$
- Greater Than Equal To $(\geq)$

Boolean Operation

- True
- False
- Logical And
- Logical Or
- Logical Not

Comparison Operation

- Equal $(=)$
- Not-equal $(\neq)$
- Greater Than $(>)$
- Less Than $(<)$
- Greater Than Equal To $(\geq)$
- Less Than Equal To $(\leq)$

Operator Assignment:

Operator Assignment:

- Assignment (For example, $x = y$)

Operator Assignment:

- Assignment (For example, $x = y$)
- $+=$ Assignment (For example, $x+ = x$)

Operator Assignment:

- Assignment (For example, $x = y$)
- $+=$ Assignment (For example, $x+ = x$)
- $-=$ Assignment (For example, $x- = x$)

Operator Assignment:

- Assignment (For example, $x = y$)
- $+=$ Assignment (For example, $x+ = x$)
- $-=$ Assignment (For example, $x- = x$)
- $*=$ Assignment (For example, $x* = x$)

Operator Assignment:

- Assignment (For example, $x = y$)
- $+=$ Assignment (For example, $x+ = x$)
- $-=$ Assignment (For example, $x- = x$)
- $*=$ Assignment (For example, $x* = x$)
- $/=$ Assignment (For example, $x/ = x$)

Variable Assignment:

Operator Assignment:

- Assignment (For example, $x = y$)
- $+=$ Assignment (For example, $x+ = x$)
- $-=$ Assignment (For example, $x- = x$)
- $*=$ Assignment (For example, $x* = x$)
- $/=$ Assignment (For example, $x/ = x$)

Variable Assignment:

- Integer

Operator Assignment:

- Assignment (For example, $x = y$)
- $+=$ Assignment (For example, $x+ = x$)
- $-=$ Assignment (For example, $x- = x$)
- $*=$ Assignment (For example, $x* = x$)
- $/=$ Assignment (For example, $x/ = x$)

Variable Assignment:

- Integer
- Float

Operator Assignment:

- Assignment (For example, $x = y$)
- $+=$ Assignment (For example, $x+ = x$)
- $-=$ Assignment (For example, $x- = x$)
- $*=$ Assignment (For example, $x* = x$)
- $/=$ Assignment (For example, $x/ = x$)

Variable Assignment:

- Integer
- Float
- String

Operator Assignment:

- Assignment (For example, $x = y$)
- $+=$ Assignment (For example, $x+ = x$)
- $-=$ Assignment (For example, $x- = x$)
- $*=$ Assignment (For example, $x* = x$)
- $/=$ Assignment (For example, $x/ = x$)

Variable Assignment:

- Integer
- Float
- String
- Type

Operator Assignment:

- Assignment (For example, $x = y$)
- $+=$ Assignment (For example, $x+ = x$)
- $-=$ Assignment (For example, $x- = x$)
- $*=$ Assignment (For example, $x* = x$)
- $/=$ Assignment (For example, $x/ = x$)

Variable Assignment:

- Integer
- Float
- String
- Type
- Class and Order

Collections

Collections

- List

Collections

- List
- Tuple

Collections

- List
- Tuple
- Set

Collections

- List
- Tuple
- Set
- Dictionary

Collections

- List
- Tuple
- Set
- Dictionary
- Array

Others

Collections

- List
- Tuple
- Set
- Dictionary
- Array

Others

- Builtin & User Defined Function

Collections

- List
- Tuple
- Set
- Dictionary
- Array

Others

- Builtin & User Defined Function
- Class

Collections

- List
- Tuple
- Set
- Dictionary
- Array

Others

- Builtin & User Defined Function
- Class
- Object

Collections

- List
- Tuple
- Set
- Dictionary
- Array

Others

- Builtin & User Defined Function
- Class
- Object
- Import Module

Loop Statement

Loop Statement

- For & Nested For

Loop Statement

- For & Nested For
- While & Nested While

Loop Statement

- For & Nested For
- While & Nested While
- Continue

Loop Statement

- For & Nested For
- While & Nested While
- Continue
- Break

Conditional Statement

Loop Statement

- For & Nested For
- While & Nested While
- Continue
- Break

Conditional Statement

- If & Nested If

Loop Statement

- For & Nested For
- While & Nested While
- Continue
- Break

Conditional Statement

- If & Nested If
- Else

Loop Statement

- For & Nested For
- While & Nested While
- Continue
- Break

Conditional Statement

- If & Nested If
- Else
- Elseif

Control Structure

Loop Statement

- For & Nested For
- While & Nested While
- Continue
- Break

Conditional Statement

- If & Nested If
- Else
- Elseif

Control Structure

- Sequential Control

Loop Statement

- For & Nested For
- While & Nested While
- Continue
- Break

Conditional Statement

- If & Nested If
- Else
- Elseif

Control Structure

- Sequential Control
- Selection Control

Loop Statement

- For & Nested For
- While & Nested While
- Continue
- Break

Conditional Statement

- If & Nested If
- Else
- Elseif

Control Structure

- Sequential Control
- Selection Control
- Iterative Control

Some Simple Problems for Undergraduate Students:

Programme Set-I

- Area of a circle
- Area of a Square
- Area of a Rectangle
- Volume of Sphere
- Volume of Cube
- Volume of Cylinder