

Session 1 - Data Types and Statements

September 3, 2018

1 Python Training: Day 1 Session 1

References (more or less):

- <https://docs.python.org/3/tutorial/>
- <https://realpython.com/>
- <https://www.learnpython.org/en/>
- <https://www.tutorialspoint.com/>
- <https://stackoverflow.com/questions/43211296/pgadmin4-postgresql-application-server-could-not-be-contacted>
- <https://stackoverflow.com/questions/12562928/psql-exe-password-authentication-failed-in-windows>
- https://en.wikipedia.org/wiki/Bulls_and_Cows
- https://en.wikipedia.org/wiki/Fibonacci_number

1.1 Arithmetic and logical operations

Just like MATLAB or GNU Octave, Python interpreter could act as a calculator.

```
In [ ]: 1 + 2 + 3
```

```
In [ ]: 1 + 2 / 3
```

```
In [ ]: (8 - 2) * 9
```

```
In [ ]: 10 * 100
```

```
In [ ]: 10 ** 3
```

```
In [ ]: 50 * 2e-2
```

```
In [ ]: 10 % 3
```

```
In [ ]: 30 > 50
```

```
In [ ]: -2 == -2.
```

```
In [ ]: 3 / 2
```

```

In [ ]: 3 // 2
In [ ]: True and False
In [ ]: True or False
In [ ]: False or True and not False
In [ ]: not True
In [ ]: # 200 + 50

```

1.2 Primitive types

Actually, every variable is object in Python. Python has four 'primitive' types: integer, floating point number, boolean, and string.

```

In [ ]: a_number = 10
In [ ]: second_number = 2.5
In [ ]: type(a_number)
In [ ]: type(second_number)
In [ ]: second_number
In [ ]: str1 = 'this is a string'
        str2 = "this is a string"
In [ ]: str1 == str2

```

Deleting a variable

```

In [ ]: b = 'sebuah kata'
        print(b)
In [ ]: del b
        print(b)

```

1.3 Input and output operations

For command line based application, print() function write output in the console, while input() read user input from keyboard.

```

In [ ]: classic_message = 'hello world!'
In [ ]: print(classic_message)

```

Printing in one line: set the end character at 'end' parameter

```

In [ ]: print('pertama', end=' ')
        print('kedua', end=' ')
        print('ketiga', end=' ')
In [ ]: user_input = input('Enter your name: ')
In [ ]: print('hello,', user_input)

```

1.4 Change variable type

The right variable type is required to perform the right operation.

```
In [ ]: price = input('how much does it cost? ')
```

```
In [ ]: discount = 0.1
```

```
In [ ]: price * discount # :D
```

```
In [ ]: print(type(price), type(discount))
```

```
In [ ]: price_num = float(price)
```

```
In [ ]: price_num * discount
```

```
In [ ]: b = 200
        print(type(b))
        b_str = str(b)
        print(type(b_str))
```

```
In [ ]: int(True)
```

```
In [ ]: bool(1)
```

```
In [ ]: bo
```

1.4.1 Assignment 1.1.1

Write a program to sum two numbers and print the output. The operands are taken from user input.

1.5 Conditional statement

```
In [ ]: age = input('How old are you? ')
```

```
In [ ]: age_num = int(age)
```

```
In [ ]: if age_num < 25:
        print('still young')
```

```
In [ ]: if age_num < 5:
        print('todler')
        elif age_num < 10:
            print('kids')
        elif age_num < 25:
            print('adult')
        elif age_num < 40:
            print('young')
        else:
            print('not young')
```

```
In [ ]: gender = input('laki / perempuan ? ')
        title = 'bapak' if gender == 'laki' else 'ibu'
        print(title)
```

1.6 Assignment 1.1.2

Write a program that takes an integer number from user input and determine whether the number is even or odd.

1.7 Looping statement

School punishment example: writing lines

Write "Saya tidak akan datang terlambat." in 100 lines

```
In [ ]: x = 0
```

```
In [ ]: while x < 100:
        print(x, end=', ')
        x += 1
```

```
In [ ]: # a little bit of modification
```

```
In [ ]: x = 0
        while x < 100:
            print(x + 1, ' Saya tidak akan datang terlambat lagi.', end='\n')
            x += 1
```

```
In [ ]: print('I\'ll repeat whatever you write until <exit>')
        x = ''
        while x != '<exit>':
            x = input()
            print(x)
            print('bye!')
```

1.7.1 Assignment 1.1.3

Write the first 20 multiple of 23!

1.7.2 Assignment 1.1.4

Write the first n number from Fibonacci series, the n is obtained from user input.