Reinvent the .wheel

Download

Anaconda: https://www.anaconda.com/products/individual

Visual studio code: https://code.visualstudio.com/

Open Source Hong Kong 開源香港

開源香港（英文：Open Source Hong Kong，簡稱 OSHK）是一個根據香港社團條例 Cap.151 登記的香港開源協會。OSHK 旨於促進開放源碼軟件的發展，我們是一個聯繫一眾開源開發者、貢獻者和用家的技術社群。我們會員開發及支持多個不同開放源碼專案。

開源香港是 Open Source Initiative (OSI) 的聯盟成員 Affiliate Member。

OSHK 透過舉行香港和亞洲會議和活動，來鼓勵國際開源社群共同協作。

英語、廣東話和國語是 OSHK 主要溝通語言。

https://opensource.hk/join/

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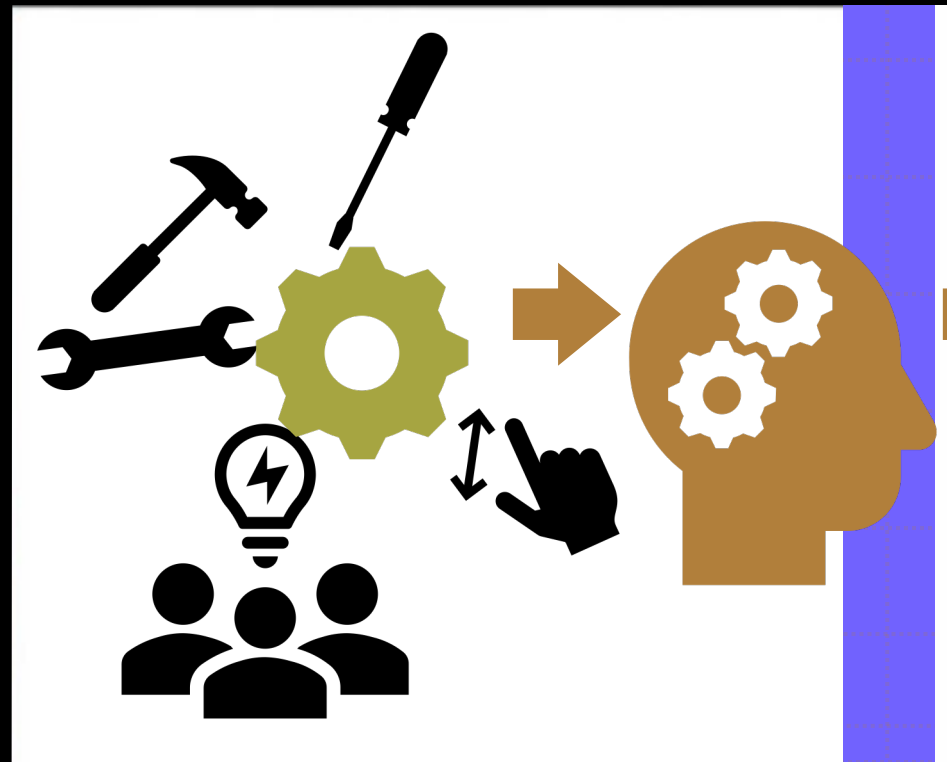
Vice President of Open Source Hong Kong President of Hong Kong Open Source Conference 2020 & 2021
Podcaster, Certified Scrum Master
Projects: Hang Seng Bank Commercial Bank App, AML App, Jumpseat Booking System, Game, Video Call, Home Automation, CMS etc.
Now? Focus on Machine Learning Project.




MINERVA

Reinvent the wheel重造輪子

- 2021 新企劃！
- 本活動希望利用現時的應用程式去學習程式開發, 從重造人家的程式, 去理解運作過程。
- 當他日學有所成，不要浪費青春。

流程

30 分鐘 基礎講解，小程式學習

1小時 落手做題目，小組研究

Binary二進制

1,2,4,8,16,64,128...
2^0 ... 2^(n-1)

在數學和數碼電路中指以2為基數的記數系統，以2為基數代表系統是二進位制的。

這一系統中，通常用兩個不同的數字0和1來表示。

Example (binary->decimal)

$0010_2 = 2^1 = 2_{10}$

$0011_2 = 2^0 + 2^1 = 3_{10}$

$0100_2 = 2^2 = 4_{10}$

$0101_2 = 2^0 + 2^2 = 5_{10}$

$1010_2 = 2^2 + 2^3 = 10_{10}$

Example (dec > bin)

$2_{10} = \{2/2 = \mathbf{1}..\mathbf{0}\} = 0010_2$

$3_{10} = \{3/2 = 1..1,\ 1/2 = 0..1\} = 0011_2$

$4_{10} = \{ \ldots \} = 0100_2$

$5_{10} = \{ \ldots \} = 0101_2$

$10_{10} = \{ \ldots \} = 1010_2$

Warm up

7_{10} → (bin)

11_{10} → (bin)

1001_{2} → (dec)

1111_{2} → (dec)

Advance ~

127_{10} → (bin)

10101010_{2} → (dec)

Oct, Hex

3 digit Oct, 000 (0) – 111(7)

4 digit 0000 (0) – 1111 (15)

Coding

Python

Python is an easy to learn, powerful programming language. It has **efficient high-level data structures** and a simple but effective approach to **object-oriented programming**. Python's **elegant syntax and dynamic typing**, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms.

Free and Open Source

Python (more)

Use Python3

Hello World

```
print("Hello, World!")
# comment
```

Run >> `python myfile.py`

Python Indentation

```
if 5 > 2:
  print("Five is greater than two!")
```

Syntax Error:

```
if 5 > 2:
print("Five is greater than two!")
```

Looping -1

```
for x in range(6):
_ _ print(x)
```

not the values of 0 to 6, but the values 0 to 5 [6]

Looping -2

```
for x in range(2, 30, 3):
  print(x)
```

Increment the sequence with 3

{2, 5, 8, 11, 14…29}

Looping when finished

```
for x in range(6):
  print(x)
else:
  print("Finally finished!")
```

0
1
2
3
4
5
Finally finished!

Exercise

1. Print a list from 0 to 10

2. Print a list from 4 to 55

3. Print a list from 0 to 201 with increment 10, print “DONE” when finished

1.---

Python Variables

```
x = 5
y = "John"
print(x)
print(y)
```

-

```
x = str(3)    # x will be '3'
y = int(3)    # y will be 3
z = float(3)  # z will be 3.0
```

Conditions

Equals: a == b

Not Equals: a != b

Less than: a < b

Less than or equal to: a <= b

Greater than: a > b

Greater than or equal to: a >= b

If statements

Decision Making

```
a = 33
b = 200
if b > a:
_ _print("b is greater than a")
```