CS 301 - Lecture 3
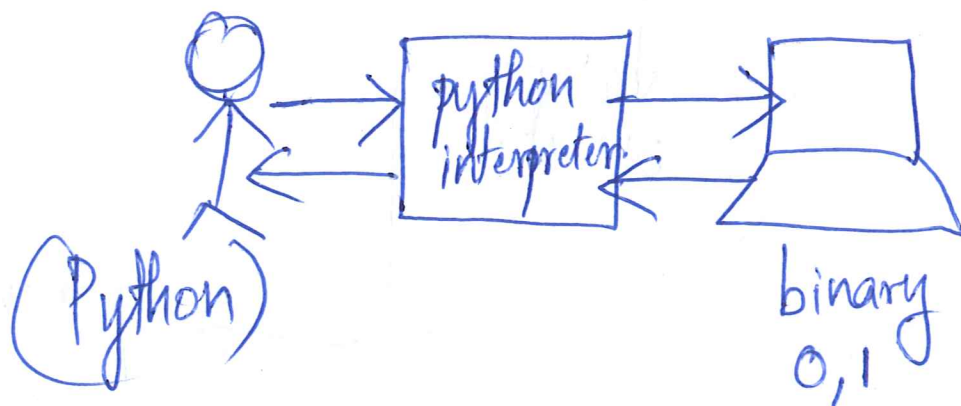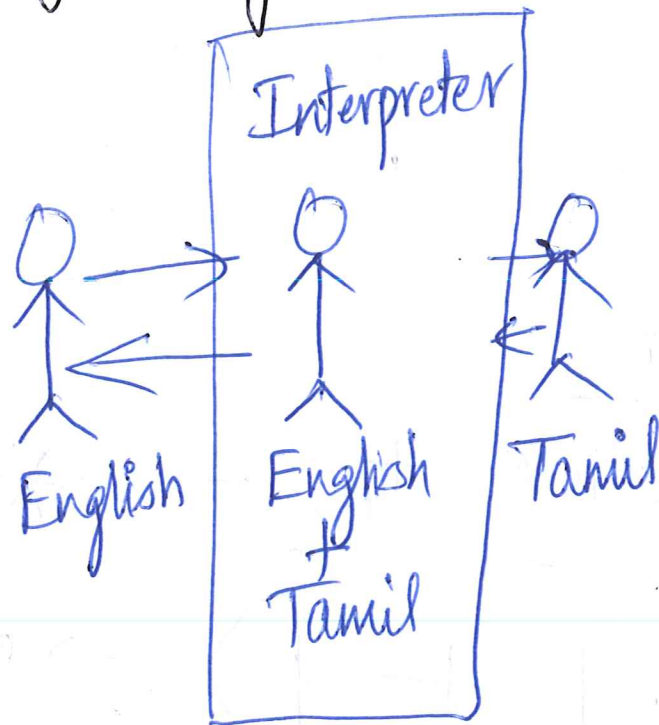
Labs - time to① work on projects.

Review
- Shell commands - Terminal
- Pseudocode.

Programming
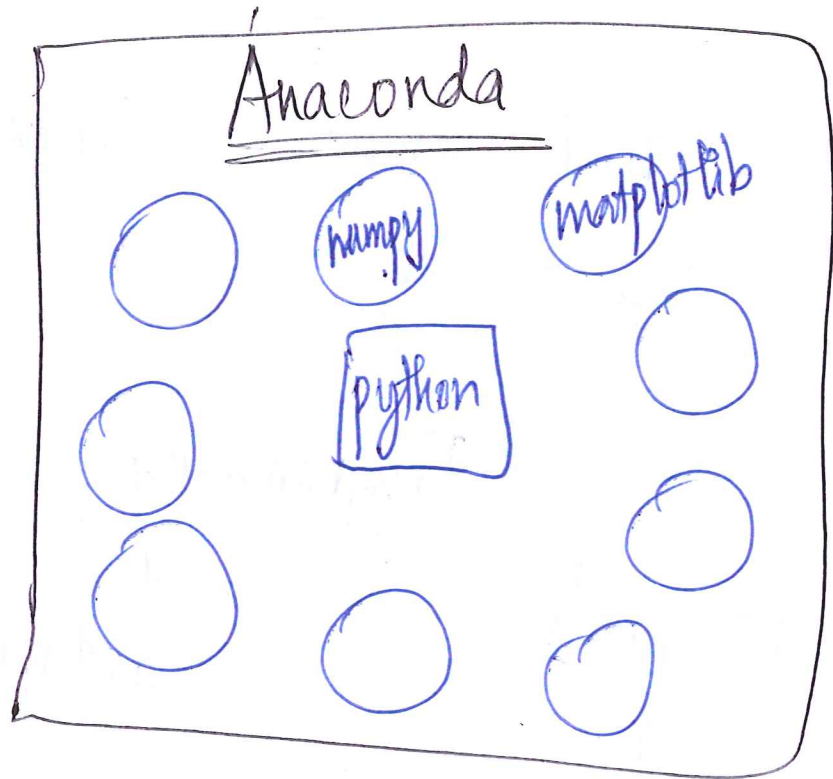
1. interpreter
2. editor

Interpreter

English   English + Tamil   Tamil

(Python)   python interpreter   binary 0,1

Pycharm   IDE - ② Integrated Development
                       Environment

python

Anaconda

numpy   matplotlib

python

Operators

Arithmetic: $+$, $-$, $*$, $/$, $//$

| + | $\rightarrow$ expression

binary
operator

$\rightarrow$ operands

$$1e-05 = 1 \times 10^{-5} = 0.00001$$

Types $\longrightarrow$ Boolean

integers
(int)

floating point
(float)

string

1, 100, 1024, ...

1.23, 3.14, etc
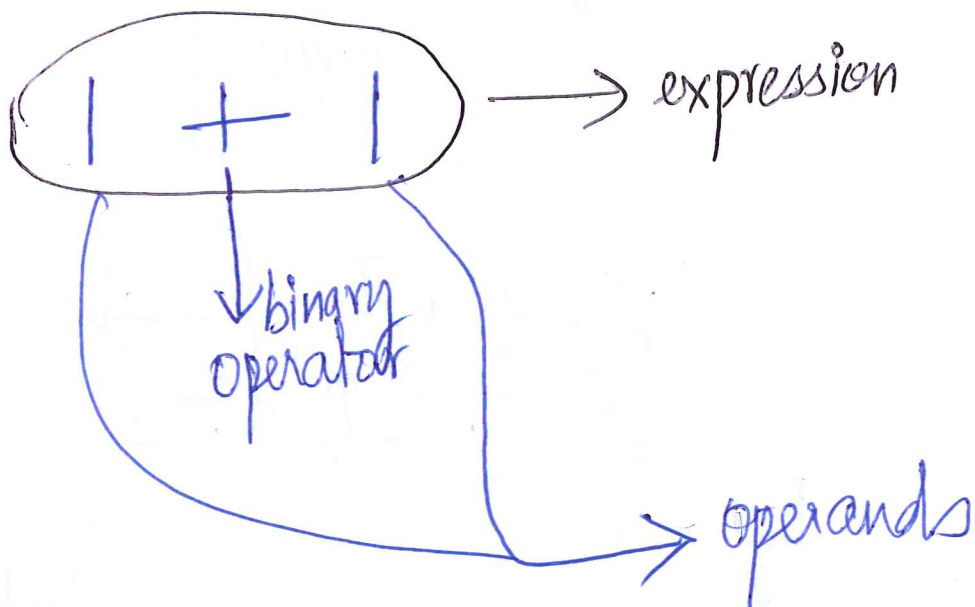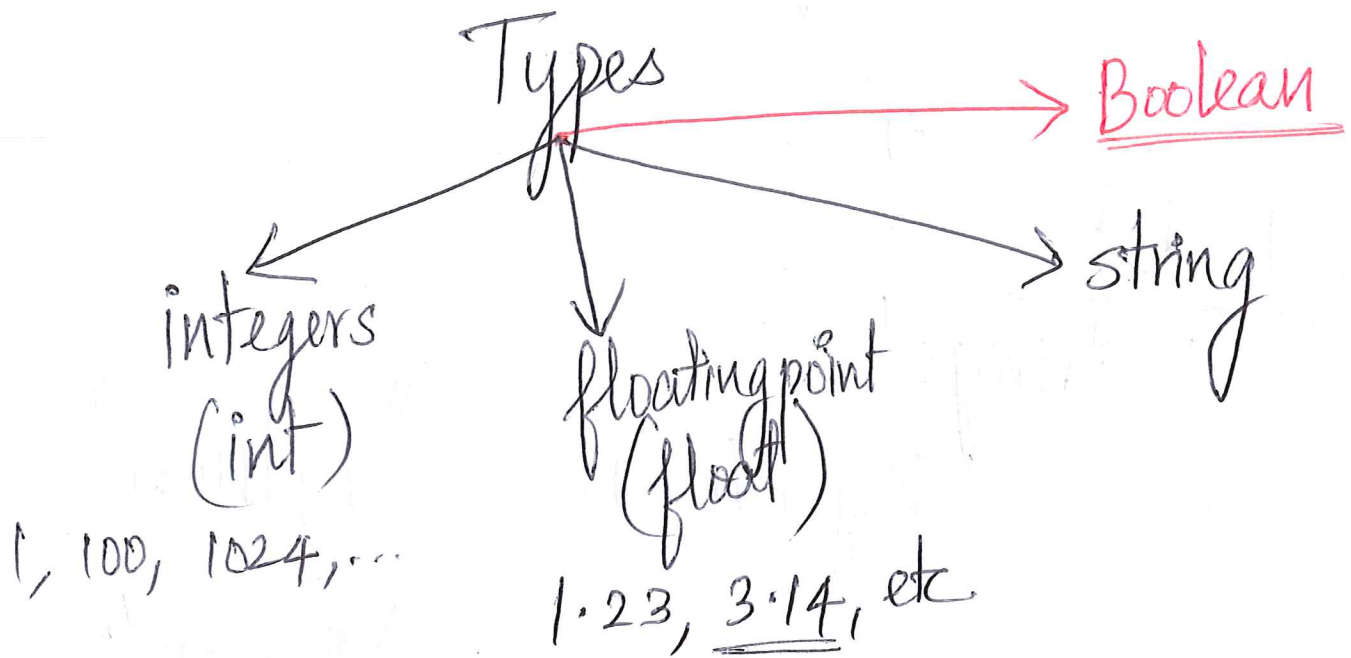
% — modulo (remainder)

** — exponentiation.

$$2 ** 3 \Rightarrow 2^3 = 8$$

P E D M A S
OR
P E M D A S

④

Unary operators

        +   −

Text data
"strings"

"Python"   "Python"
            'Python'

+ ⟹ concatenation.

Comparison Operators

$3 < 5 \implies$ True

$3 > 5 \implies$ False

<, ~~≮~~ , >, >=, ==, !=

<=

Boolean

$3 < 5 \implies$ (True)

$3 < 1 \implies$ (False)

Boolean operators

and, or, not

and	T	F
T	T	F
F	F	F

$3 < 5$ (and) $3 < 1$

T   F

$\underbrace{\qquad\qquad\qquad}$

False

or	T	F
T	T	T
F	T	F

$3 < 5$ (and) $3 < 7$

T   T

$\underbrace{\qquad\qquad\qquad}$

T

($3 < 5$ or $3 < 1$

T   F)

$\downarrow$

T

not

not $(3 < 5)$ $\longrightarrow$ False.

not (T) = False

$1 == 1$ or $(2 == 2$ and $3 == 4)$

T   T   F

F

Order of precedence

not,   and,   or

Modes

interactive   script

Summary:

operators

arithmetic   logical operators

$+, -, *, /, \%, //$ $<, <=, >, >=,$

unary: $+, -$ $==, !=$