16 Aug '24

(1) PyCharm – application – to do Python programming
(Community edition)
– Editor, File tree, Output, Console

(2) Book: Learning Programming with Python 3.

(3) Basic expressions – integers, floats, strings
datatypes

HW: Finish last class HW
– 3.expressions file also

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Datatypes — integers, floats, strings
23, 42, -64 23.1, 43.0, -61.7 "this" 'ant'

Expressions — simple calculations
→ 3+4+5 (int)
→ 42.6+53.2 (float)
→ 43 + 53.2 (float — int is converted to float)
→ 'this' + 'is' (string)
→ '3+4=' + str(3+4)

```
>>> type(32)          → int
>>> type(23.4)        → float
>>> type('vaptx')     → str
>>> type("vaptx")     → str
```

```
>>> type(vaptx)
→ error (no quotes)
```

Operators :

+ → addition 3+4 = 7

− → subtraction 10−4 = 6

* (asterisk) → multiplication 20*4 = 80

/ (slash) → division 20/4 = 5

21/4 = 5.25

// → int. division 21//4 = 5 (quotient)

% → modulo 21%4 = 1 (remainder)

** → power 4**6 = 4^6

= 4×4×4×4×4×4 (6 times)

4*6 = 4×6 = 4+4+4+4+4+4

4**6 = 4^6 = 4×4×4×4×4×4

Empty space:

Same → 3+4 , 3. + 4 , 3 + 4

Type casting:

int → float : $\underset{int}{30} + \underset{float}{42.3} = \underset{float}{30.0} + \underset{float}{42.3} = 72.3$

float → int : 30 + int(42.3) = 30 + 42 = 72

int → str : "Result is" + $\underset{str}{str}$(42*63)

$\underset{str}{\text{"Result is"}}$ $\underset{int}{(2709)}$

= "Result is " + '2709'

= Result is 2709

str → int : int('24') = 24 ; int('3C4k') ⟹ error

str → float : float('24.3') = 24.3 ;

String operators:

```
3 * 'Pig'    =  'PigPigPig'
'Pig' + 'Car' =  'PigCar'
```

HW: Ch. 3 textbook

→ Create a program file

→ Type everything that is in boxes in the text book

→ Run

→ Play with operators, expressions, type casting

→ From Maths class HW +, −, *, / (10 for each) do all of those in python and verify (create a program called Math HW)

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Operator precedence (order):

3 + 4 - 6 * 14 / 2 + 3*(4-1)

float (24)

(1)

4 + 4 / 2

= 8 / 2 ✗

= 4

(2)

4 + 4 / 2

= 4 + 2 ✓

= 6

Maths
↳ BODMAS — Brackets, of, division, multiply, add, subtract

↳ PEMDAS — parantheses, exponential, multiplication,
( ) (power)
division, add, subtract

Python

Variables: A place where you store values.

You can give any name to a variable.

Ex: myVar = 43

→ myVar + 23

66

→ myVar * 2

86

x = < some value >

↓ assignment operator

Variable names can not by python keywords

— Eg: for, in, true, false etc.

HW: (1) Read all previous class notes

(2) Ch. 4 code type into a program file and run