TechGatha
Accelerating Your Transformation

Python 3.x

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What we will cover today?

- Assignment solution
- Comments
- Naming Rules
- Whitespace
- Data Types
- Variables
- Operators

Assignment Solution

```
print("        ~^^^~")
print("        |[#]|")
print("     ~^^^+---+^^^~")
print("     |[#]|  |[#]|")
print("  ~^^^+----------+^^^~")
print("  |      ===      |")
print("  | [#] ||| [#] |")
print("  |     |||     |")
print("  +-------+===+-------+")
print(" ========================")
```

Comments

- Comments starts with '#'

  Example :

  ```
  # This is My Sample Program...        # Comment line
  ```

- If you start any statement with a #(hash), python considers the statement as a comment
- A comment is NOT executed by Python

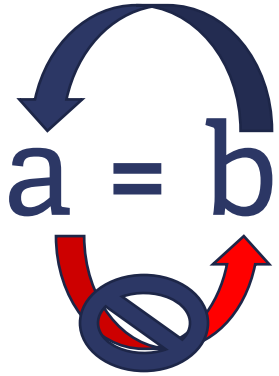
Naming Rules

- Names are case sensitive and cannot start with a number. They can contain
  - Letters
  - Numbers
  - Underscores

  Example :
  - bob, Bob, _bob, _2_bob_ , bob_2 , BoB
- Keywords / Reserved words cannot be used as names

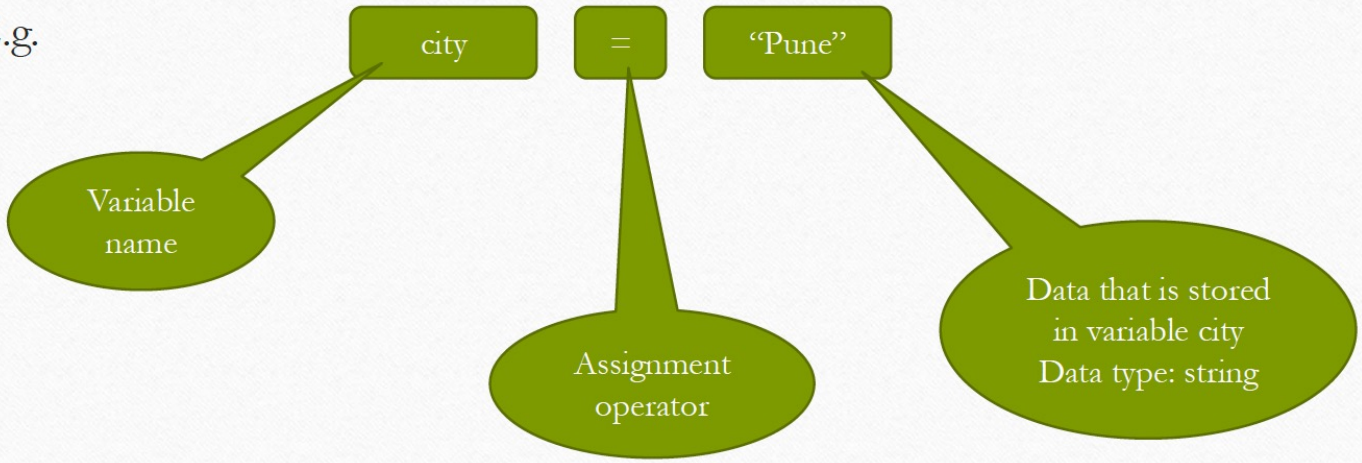
Variables

- Used for storing Values
- In Python variables are not declared
- Can change type after they are set



Variables, assignment and data

- User friendly names in which you store values.
- E.g.



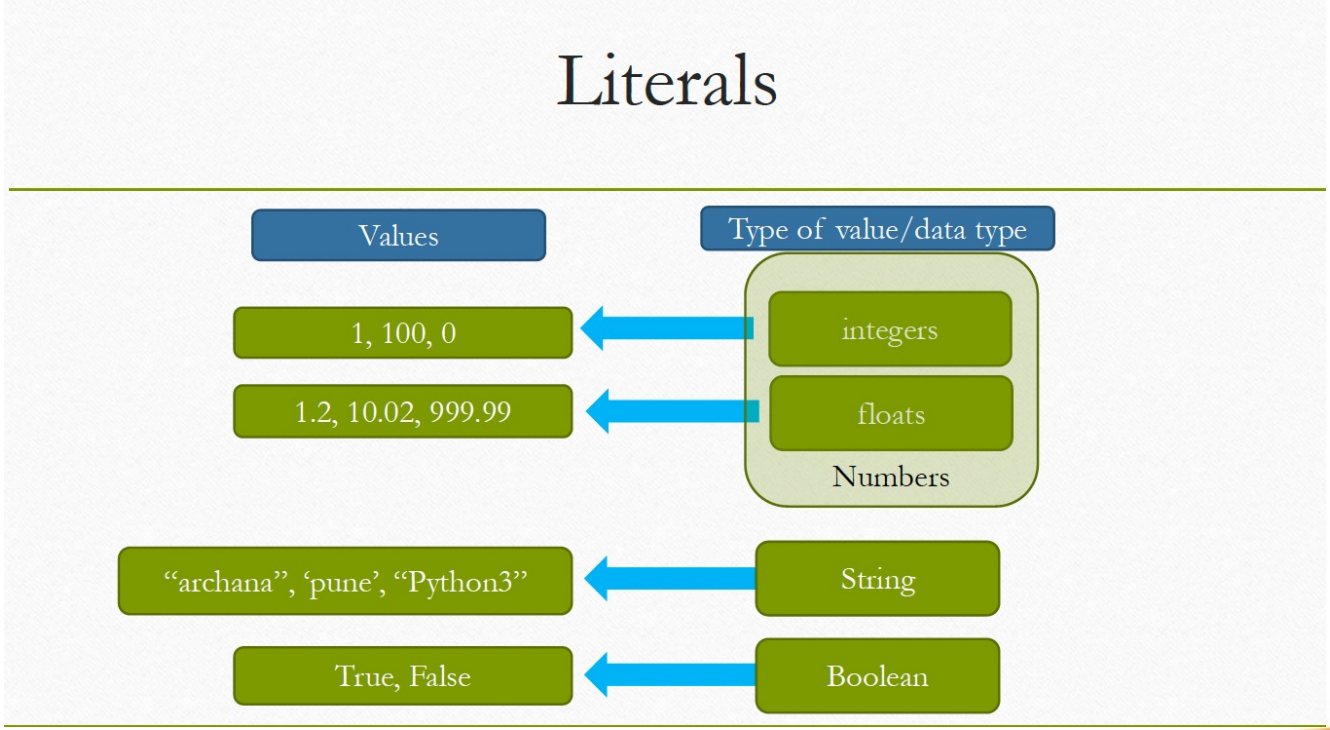
Keywords

- They are special words with special meaning to the language
- Cannot be used as identifiers
- Examples

False	await	else	import	pass
None	break	except	in	raise
True	class	finally	is	return
and	continue	for	lambda	
try	as	def	from	nonlocal
while	assert	del	global	not
with	async	elif	if	or
yield				

Data Types

- ✓Integer -> 2323, 3234L
- ✓Float -> 32.3, 3.1E2
- ✓Boolean -> True, False
- ✓String -> “abc” , ‘abc’



Operators

Operator	Function	Rules
+	Addition	int+int=int int+floator float+intor float + float = float
-	Subtraction	Int-int=int Int-float or float-int or float -float = float
*	Multiplication	Int*int=int Int*float or float*int or float * float = float
/	Division	Int/int=float Int/float or float/int or float / float = float
//	Integer division	Int//Int = int Int//float or float//int or float // float = int =>rounded to 0 decimal
**	Exponential	Int**int=int Int**float or float**int or float** float = float
%	Modulo	Int%int=int Int%floator float%intor float% float = float

Operator Priorities

Priority	Operator
1	**
2	*,/,//,%
3	+,-

In accordance with the arithmetic rules, **subexpressions in parentheses are always calculated first**.

```
print((5*(100-(25%5)) /(5*2)) //2)
```

Quiz

What should be the output?

- print(3*5**2)
- print(-5**2+25)
- print(6/2*(1+2))

Type Casting

- Converting one datatype to another
- a = int(input("Enter the number"))
- str(33) converts 33 into '33'

Exercixe 1

- Bearing in mind that 1 mile is equal to approximately 1.61 kilometers, complete the program in the editor so that it converts miles to kilometers
- Formula:
- 1 Miles = 1.61kms
- Output expected:
- 10 miles is equal to 16.09 kilometers

Exercixe 2

- Write a program to calculate simple interest
- Formula
- s=p x n x r/100
- Where sissimpleinterest, p is principle, n is number of years, r is rate of interest
- Takep,n,rasinputfromtheuser

Assignment

Calculate Weight on Moon

- Take weight on earth as input
- Calculate weight on Moon
- Show the same
- Hint – If you weigh 100 kg on earth you will weigh 16.5 Kg on moon

Calculate compound interest

- Take principal amount, interest rate and loan term as input. Assume interest is compounded annually.
- Hint $\mathbf{P\,[(1 + i/100)^n - 1]}$
- Where P = Principal amount, i= interest rate, n= no of years

Convert Seconds into Hours, Minutes and Seconds

- Take seconds as input
- Calculate hours, minutes and seconds.
- Example – If seconds entered is 5620 then output is 1 hour, 33 minutes and 40 seconds.

Find total number of currency notes

- :A cashier has currency notes of denominations 10, 50 and 100. If the amount to be withdrawn is input through the keyboard in hundreds, **find the total number of currency notes** of each denomination the cashier will have to give to the with drawer.
- Example – If input is 1275 then 100s – 12, 50 – 1, 10 – 2. Balance is 5

Any Question ?

Thank you !