

~~Operator~~  
Operator

①

$$\begin{aligned} \rightarrow a=4 \quad b=8 \quad \left. \begin{array}{l} a+b=12 \\ a-b=-4 \\ a*b=32 \\ a/.b=0.5 \end{array} \right\} \end{aligned}$$

$$\rightarrow 5**3 \# 125$$
$$7/.2 = 1 \text{ (Remainder)}$$

$$7//2 = 3$$

$$8//2 = 4$$

$$\rightarrow a=7 \quad b=2 \quad \left. \begin{array}{l} a//b = 3 \\ a/b = 3.5 \\ -9//2 \# -5 \end{array} \right\}$$

$$\rightarrow 5**3 \# 125$$

Arithmetic

$$\left. \begin{array}{l} 3 < 4 \rightarrow T \\ 4 > 4 \rightarrow T \\ 4 \geq 4 \rightarrow T \end{array} \right\} \begin{array}{l} "a" == "a" \# True \\ "aa" < "b" \# True \\ "abc" < "aac" \# False \end{array}$$

$$\left. \begin{array}{l} ord('a') \# 97 \\ chr(97) = 'a' \end{array} \right\} \checkmark$$

## ident. and Membership

$x=4$   
 $y=5$  }  $\text{type}(x)$  is  $\text{type}(y)$  #T  
          }  $\text{type}(x)$  is  $\text{int}$  #T

$x=4$   
 $y="hi"$  }  $\text{type}(x)$  is not  $\text{type}(y)$   
                  #True

→  $\text{valid\_java} = ["1.5", "1.6", "1.7", "1.8"]$   
 $\text{host\_java} = "1.6"$   
if ( $\text{host\_java}$  in  $\text{valid\_java}$ ):  
    pt(" ")

else: pt("Invalid java version")

→  $\text{db\_user} = ["admin", "root", "user", "guest"]$   
 $\text{random\_user} = "root"$   
if ( $\text{random\_user}$  not in  $\text{db\_user}$ ):  
    pt("")  
else: pt("User found")

$$\hookrightarrow \underline{\underline{3 > 1}} \text{ and } \underline{\underline{1 \text{ in } [3, 4, 5]}} \Rightarrow \text{false}$$

$$\hookrightarrow \begin{array}{l} 1 < 2 \text{ and } 2 < 3 \text{ and } 3 < 4 \text{ \# True} \\ 2 < 3 \text{ or } 1 < 2 \text{ or } 4 < 3 \text{ \# False} \end{array} \left. \vphantom{\begin{array}{l} 1 < 2 \text{ and } 2 < 3 \text{ and } 3 < 4 \text{ \# True} \\ 2 < 3 \text{ or } 1 < 2 \text{ or } 4 < 3 \text{ \# False} \end{array}} \right\} \underline{\underline{\text{Logical}}}$$

$$\hookrightarrow 1 < 2 \text{ or } 3 < 4 \text{ or } 4 > 3$$

$$\text{not in } 1 < 2 \text{ or } 3 < 4 \text{ or } 4 > 3 \text{ \# True}$$

$$1 < 2 \text{ and } 2 < 3 \text{ and } 3 < 4 \text{ and } 5 < 6 \text{ \# True}$$

$$\text{all}([1 < 2, 2 < 3, 3 < 4, 5 < 6]) \text{ \# True}$$

$$\text{any}([1 < 2, 2 < 3, 3 < 4, 5 < 6]) \text{ \# True}$$

ABdul:-

$$\begin{array}{l|l|l} a=14 & a+b=18 & a/b=3.5 \\ b=4 & a-b=14 & a./b=2 \\ & a*b=56 & 2**5=32 \\ & a//b=3 & \end{array}$$

$$\begin{array}{l} a=6 \\ b=3 \end{array} \left. \vphantom{\begin{array}{l} a=6 \\ b=3 \end{array}} \right\} \begin{array}{l} a+b \\ a, 3 \end{array} \left. \vphantom{\begin{array}{l} a+b \\ a, 3 \end{array}} \right\} \begin{array}{l} a*b=b \\ a=18 \\ b=3 \end{array} \left. \vphantom{\begin{array}{l} a*b=b \\ a=18 \\ b=3 \end{array}} \right\} \begin{array}{l} a=6 \\ b=3 \\ a/b \neq b \text{ \# 2.0, 3} \end{array}$$

$$X=10$$

$$X+=(a*b-c) \quad (2*3-4)$$

$$10+2=12 \checkmark$$

$\hookrightarrow$  length = eval(input(" "))  
 breadth = eval(input(" "))  
 area = length \* breadth

$\hookrightarrow$  area =  $\frac{1}{2} \times \text{base} \times \text{height}$   
 $\text{base} \times \text{height}$  (area =  $\frac{1}{2} (\text{base} \times \text{height})$ )  
 $(\text{base} \times \text{height}) / 2$

10  
 5  
 25.0

$\hookrightarrow$  Area of trapezium  
 area =  $\frac{1}{2} \times (a+b) \times h$

$\hookrightarrow$  Area of Circle  
 $\pi \times r \times r$   
 math.pi \* r \* r

$\hookrightarrow$  Kms to miles  
 1 km = 0.62137 miles

kms = 15  
 miles = kms \* 0.62137  
 11 miles = 9.32056

$\hookrightarrow$



// displacement

$$d = (v \times v - u \times u) / (2 \times a);$$

$$(v \times v - u \times u) / (2 \times a)$$

// Surface area of cuboid

$$\text{length} = 10$$

$$\text{breadth} = 5$$

$$\text{height} = 2$$

$$\text{Surface-area} = 2 \times ((l \times b) + (b \times h) + (h \times l))$$

Quad

$$x_1 = \frac{-b - \text{math.sqrt}(b \times b - 4 \times a \times c)}{2 \times a}$$

$$x_2 = \frac{-b + \text{math.sqrt}(b \times b - 4 \times a \times c)}{2 \times a}$$

## String Concat

$s = \text{"abc"}$   
 $s + 10 \times$

$\hookrightarrow s1 = \text{"abc"}$   
 $s3 = \text{"xy2"}$

$s1 + s3 \checkmark \Rightarrow \text{abcxy2}$   
 $s1 + \text{str}(10) \checkmark \Rightarrow \text{abc10}$

$\hookrightarrow s = \text{"abc"}$   
 $s \times 3 = \text{"abcabcabc"}$

$\hookrightarrow s2 = \text{"abc"}$   
 $\Rightarrow \text{"abc abc abc"}$

$\hookrightarrow a = 10.5$   
 $b = 3.1$   
 $a // b = 3.0 \checkmark$   
 $a / b = 1.99 \checkmark$

$T + T \Rightarrow 2 \cdot (T + 5) = 6 \quad (T + 2.4) = 3.4$

$\hookrightarrow 3 + (2 + 3j) = 5 + 3j$

$(T + 3 + 4.5 + (2 + 3j)) \Rightarrow \underline{10.5 + 3j} \checkmark$

$(\text{bool} \ll \text{int} \ll \text{float} \ll \text{complex})$