Cheatography

Unit 3 - Math Functions, String and Objects Cheat Sheet

by MrDeniz (papapadzul) via cheatography.com/68635/cs/17877/

Simple Python Built-In Functions

abs(x)	Returns the absolute value for x	abs(-2) is 2
max(x1, x2,...)	Returns the largest among x1, x2,...	max(1, 5, 2) is 5
min(x1, x2,...)	Returns the smalles among x1, x2,...	min(1, 5, 2) is 1
pow(a, b)	Same as a ** b	pow(2, 3) is 8
round(x)	Returns an integer nearest to x. If x is equally close to two inetegers, the even one is returned	round(5.5) is 6
round(x, n)	Returns the float value rounded to n digits after the decimal point	round(-5.466, 2) is 5.47

Mathematical Functions in Python

fabs(x)

> Returns the absolute value for x as a float

ceil(x)

> Round up x

floor(x)

> Round down x

exp(x)

> exponential function x(e^x)

log(x)

> Natural logarithms

log(x)

> Natural logarithms

log(x, base)

> Logarithms of x for the specified base

sqrt(x)

> Square root of x

sin(x), cos(x), tan(x)

> sin, cos, tan of x angle in radians

Mathematical Functions in Python (cont)

asin(x), acos(x)

> Inverse of sin, cos of an angle

degrees(x)

> convert radians to degrees

radians(x)

> convert degrees to radians

Strings and Characters

ASCII Code

> American Standard Code for Information Interchange. Uses numbers 0 - 127. Can be accessed using alt key

Unicode Code

> Unicode consortium, starts with \u and hexadecimal nmbers

Escape Sequences for Special Characters

Character Escape Sequence	Name
\b	Backspace
\t	Tab
\n	Linefeed
\r	Carriage Return
\\	Backslash
\'	Single Quote
\"	Double Quote

Printing without the Newline

```
print("AAA", end = ' ')
print( " BBB ", end = '')
print( " CCC ", end =*'')
print( " DDD ", end =*'')
displays
AAA BBBCCC***DDD***
```


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Invoke the print function with the end argument

```
n = 3
id(n)
type(n)
s = salalah
sl = s.lower()
print (s)
---
su = s.upper()
print(s)
s = "\t Salalah \n"
print(s)
s = s.strip()
print(s)
```

Convert numbers to a string

```
num1 = str(3.4)
print (num1)
num2 = str(5)
print (num2)
```

Read strings from the keyboard

```
firstname = input("firstname is: ")
secondname =input ("s econd name is: ")
name = firstname + secondname
print (name)
print( fir stname + " " + second name)
```

To use the + operator to concatenate strings

```
firstname = " Mohammad"
secondname = "Ali"
name = firstname + secondname
print (name)
Firstname + = secondname
print( fir stname)
use " " space
```

Format Strings and Numbers

```
a = 3
b = .123
c = a / b
print(c)
---
print (round (c,2))
---
print (forma t(c ,"1 0.2f"))
print (forma t(c ,"1 0.2e"))
print (forma t(c ,"1 0.%")
---
(for int only)
print( for mat (a, "b")) #binary
print( for mat (a, "o")) #octal
print( for mat (a, "x")) #hexad ecimal
```

Format Strings and Numbers cont...

```
print (format(c,"10.2f"))
print (forma t(c ,"< 10.2 f"))
print (forma t(c ,"> 10.2f")
---
print( for mat (a, "b"))
print( for mat (a, "<b"))
print( for mat (a, ">b"))
---
s = "I love Python "
print(s)
print( for mat (s, " 20s "))
print( for mat (s, " <20 s"))
print( for mat (s, " >20 s"))
```


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Draw Various Shapes

```
import turtle
turtle.pe nsi ze(n) 1-3
turtle.pe nup()
turtle.go to(x,y) (-200,-50)
turtle.pe ndown()
turtle.ci rcl e(40, steps = 3) #triangle
turtle.done()
```

Draw graphics with colors and fonts

```
import turtle
turtle.pe nsi ze(n)
turtle.pe nup()
turtle.go to(x,y)
turtle.pe ndown()
turtle.be gin _fill()
turtle.co lor ("c olor")
turtle.ci rcl e(40, steps = 3)
turtle.en d_f ill()
turtle.done()
```

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