Operators

+	addition
-	subtraction
*	multiplication
/	division
//	division(floor division)
**	exponent
%	module
==	equal to
!=	unequal to
<	lesser than
<=	lesser than or equal to
>	greater than
>=	greater than or equal to

Addition

string + string	combine together
string + number	crash
number+number	math-addition

Subtraction

String - String	crash
string-number	crash
number-number	math-subtraction

Multiplication

String * String	crash
String*number	print string for number times
number-*number	math-multiplication

using a while loop to print each item in list

```
wlist = [2,4,5,6,7,8]
index = 0
while index < len(wl ist):
      print (wlist [in dex])
      index = index +1
```

Area of Circle Code

```
while True:
    use r_r adius =
input( "What is the radius ?")
    radius = float( use r_r -
adius)
   pi = 3.1415
    area= pi radius * 2
    print ("The area of the
circle is", area)
```

Area of a Triangle

```
def areaOfTriangle
(base,height):
      return base heigh 0.5
base = float( inp ut( 'Enter the
base of the triang le'))
height = float( inp ut( inp -
ut( 'Enter the height of the
triangle: '))
print('The area of the triangle
is',ar eaO fTr ian gle (ba se, -
hei ght))
def volume OfPrism (area, hei -
ght):
      return areaOf Prism*
height
base = float( inp ut( 'Enter the
area of the prism'))
height = float( inp ut( 'Enter
the height of the prism: '))
```

Definition program code

```
def printDefinitions(word):
   if word == " var iab le":
         print( 'A variable is
things that able to change')
   elif word == " fun cti on":
         print( "A function is to
help to use a code")
   elif word == " var iab le":
         print( 'A variable is
the things that help you to
change')
   elif word == " return
variab le":
         print( 'A return
variable is something that
return the function back to
you')
   elif word == " arg ume nt":
         pri nt('A argument is
something that give the function
to you')
   elif word == " par ame -
ter ":
         pri nt('A parameter is
something that give function')
   elif word == " str ing ":
         pri nt('A string is the
text, number or anything that is
list the charac ters')
    else:
         pri nt( 'un known word')
user_word = input( " Enter a
word to define: ")
print( Def ini tio ns( use r_w -
ord))
```

Function

print( )	displays information on the screen
input( )	receives information from the user
int( )	converts a value to an integer

By Salisa Stamp
cheatography.com/salisa-stamp/

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Function (cont)

float( )	converts a value to a decimal number
str( )	converts a value to a string
while... :	loop statement
if ... :	if statement used as a condition or loop in python
else :	another condition used after if statement
"""	multi-line comment
#...	a line comment
for ... in ...	a list
True	a condition in a loop
False	a condition in a loop
len( )	length of the string
... [x]	the x'th letter of the string
import ...	import a codeor something like formula in python
random.choice(...)	to random item from the list

Exponent

string**string	crash
string**number	crash
number**number	math-exponent

Division

String / String	crash
String/number	crash
Number/number	math-division

Palindrome

```
while True:
     def palind rom e(w ord):
            reverse = " "
            myr esult = " "
           for letters in word:
                  reverse =
letters + reverse
           if word == reverse :
                  return True
          else:
                  return False
          reverse = " "
   word = input( " please enter
a word: ")
   if word == " qui t":
          break
    the result = palind rom -
e(word)
    pri nt( "This word
has" ,le n(w ord ),"l ett er")
```

Random code

```
import random
mylist = ['Dog' ,'F ish', 'Cat',
'Bear']
counter = 0
while counter < 10:
      ran dom _item =
random.ch oic e(m ylist)
      print (rando m_item)
      counter = counter + 1
```

Guessing Game code

```
import random
mylist = ['beag le' ,'p ome -
ran ian ',' pug']
score = 0
chances = 3
start_over = 0
random _item =
```

Guessing Game code (cont)

```
> random.choice(mylist)
while start_over < 1:
  print ("-=-=-=-=-=-=-=-=-=-=-=-")
  print ("Guessing Game")
  print ("-=-=-=-=-=-=-=-=-=-=-=-")
  print("words:", mylist)
  guess = input("Guess a word: ")
  if (guess in mylist):
    if(guess == random_item ):
      print("That's correct!")
      score = score + 100
      print("Score:", score)
      start_over = 2
    else:
     print("Sorry, wrong choice! ")
     chances = int(chances) -1
  else:
     print("Sorry, that is not even in the list")
     chances = int(chances) -1
  if(chances > 0):
     print("Chances remaining:",chances)
  else:
    start_over = 2
    print("Game Over! The word was ",
random_item)
    print("Chance remaining:", chances)
print("Final score:", score)
```

Vocabulary

variable	holds a value and can be changed
string	a list of characters such as numbers, letters, symbols

Vocabulary (cont)

floating number	number with a decimal point
integer	number with no decimal point
input	something that the user types in
syntax	grammar or rules on programming
loop	the condition used in python
operator	the signs used for mathematics condition
module	text for storing the python code

Change the text

(... . upper( ))	change the text to upper case
(... .lower( ))	change the text to lower case
(... . capitalize( ))	change the first letter of the text to upper case and convert other letters to lower case
(... . title( ))	change the first letter of each word from the text to upper case and convert other letter to lower case

print number in separate line in list mylist

```
mylist = [1,2,3,4,5]
for number in mylist:
      print (number)
```

number to binary code

```
user_number = ""
while user_n umber != " 0":
      use r_n umber = input (
" enter a number " )
      number = int(us er_ -
number)
    bin ary _string = " "
while (number > 0 ):#the number
is greater than 0
      rem ainder = number % 2
      bin ary _string = str(
remain der)+ binary _string
      number = number//2
      print (number)
print ( " binary string is ",
binary _string )
```

Count down code

```
user_number= input("enter
number")
number = int(us er_ number)
countd own _string = " "
while number > 0:
countd own _string = countd -
own _string + str(nu mber) +
" "
number = number-1
print (count dow n_s tring)
```

Number printing(for loop)

```
for number in range(5):
print (number)
# the output will be 0-4 in
separate lines
```

Quit word (def code)

```
# create a function that allows
a user to create a list
#function name: word
#param ater: word
#return the list
```

Quit word (def code) (cont)

```
> def createList (quitword):
   mylist = [ ] #create an empty list
   while True:
#get the item from the user
    item = input('Please enter a list item')
# when the user enters an item that is equal
to quitword
    if item == quitword:
      return mylist
# check if the list already in the list
    duplicateword = False
# figure out if the word isalready in the list
    for word in mylist:
      if item == word:
          duplicateword = True
      if duplicateword == True:
          print ('Duplicate word!')
      else:
# add this item to the end of the list
          mylist.append(item)
#function call
mylist = creatList("stop")
print(mylist)
```