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(wlist):
    print (wlist[index])
    index = index +1
```

Area of Circle Code

```
while True:
  user_radius = input("What is the
radius?")
  radius = float(user_radius)
  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(input('Enter the base
of the triangle'))
height = float(input(input('Enter
the height of the triangle: '))
print('The area of the triangle
is',areaOfTriangle(base,height))
def volumeOfPrism (area,height):
    return areaOfPrism* height
base = float(input('Enter the area
of the prism'))
height = float(input('Enter the
height of the prism: '))
```

Definition program code

```
def printDefinitions(word):
  if word == "variable":
    print( 'A variable is things
that able to change')
  elif word == "function":
    print( "A function is to help
to use a code")
  elif word == "variable":
    print( 'A variable is the
things that help you to change')
  elif word == "return variable":
    print( 'A return variable is
something that return the function
back to you')
  elif word == "argument":
    print('A argument is something
that give the function to you')
  elif word == "parameter":
    print('A parameter is something
that give function')
  elif word == "string":
    print('A string is the text,
number or anything that is list the
characters')
  else:
    print('unknown word')
user_word = input( "Enter a word
to define: ")
print(Definitions(user_word))
```

Function

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

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Published 15th February, 2016.
Last updated 22nd March, 2016.
Page 1 of 3.

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 palindrome(word):
        reverse = ""
        myresult = ""
        for letters in word:
            reverse = letters +
reverse
        if word == reverse :
            return True
        else:
            return False
        reverse = ""
    word = input("please enter a
word: ")
    if word == "quit":
        break
    theresult = palindrome(word)
    print("This word
has",len(word),"letter")
```

Random code

```
import random
mylist = ['Dog','Fish', 'Cat',
'Bear']
counter = 0
while counter < 10:
    random_item =
random.choice(mylist)
    print (random_item)
    counter = counter + 1
```

Guessing Game code

```
import random
mylist =
['beagle','pomeranian','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

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Published 15th February, 2016.
Last updated 22nd March, 2016.
Page 2 of 3.

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_number != "0":
    user_number = input ( "enter a
number" )
    number = int(user_number)
  binary_string = ""
while (number > 0 ):#the number is
greater than 0
    remainder = number % 2
    binary_string = str(
remainder)+ binary_string
    number = number//2
    print (number)
print ( "binary string is ",
binary_string )
```

Count down code

```
user_number= input("enter number")
number = int(user_number)
countdown_string = ""
while number > 0:
countdown_string =
countdown_string + str(number) +
""
number = number-1
print (countdown_string)
```

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
#paramater: 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)
```

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Published 15th February, 2016.
Last updated 22nd March, 2016.
Page 3 of 3.

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