

### Addition

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

### Functions

print ()	displays information on the screen
input ()	receives information from the user
int ()	converts a value to an integer
str ()	string ("word") can be everything
float ()	change number to be decimal number
#	comment(one line)
""" ..... """	comment(many lines)
import random + random.choice()	pick random item in the list

### Math

+	plus
-	minus
*	multiple
/	divide
%	remainder (4%2)-> 0
**	exponent 2**3 -> 2^3
==	equal to
!=	not equal to
<	less than
>	more than
<=	less than or equal to
>=	more than or equal to

### Code2

```
shoppinglist = ('tshirt', 'pants', 'socks')
for myvariable in shoppinglist:
    print (myvariable)
print (shoppinglist(1))
for number in range(5):
    print (number)
```

### Vocabulary

Variable	holds a value and can be changed
String	a list of characteristics such as numbers, letter, symbols
Syntax	Grammar
Modulo	Remainder %
Integer	Real number
Floating Point	Decimals
Boolean	True/False
==	!= not equal
equal	
Syntax Error	make impossible to the parse

### Name

```
firstname = input (" What is your first name? ")
lastname = input (" What is your last name? ")
fullname = ( firstname + " " + lastname )
print (fullname)
letternumber = int(input( " What is letter number? " ))
if letternumber > len(fullname):
    print ( " invalid letter number, try again! " )
else:
    letter =
(fullname[letternumber])
    print (letter)
    numberletter = int(input(" How many times to print letter? "))
```

### Name (cont)

```
if numberletter > 100:
    print (" Too many letters to print! " )
else:
    print ( letter * numberletter )
```

### Code1

```
# Create a program that recieve a number from the user
# from that number on the same line
#recieve the number from the user as a string
user_number = input
#convert the user number to an integer
number = int(user_number)
#setup the countdown string
countdown_string = ""
while number > ():#the number is greater than 0)
    remainder =
    print (number)
    #binary_string =
#output should look like this
# if the user enters 5:
# 5 4 3 2 1
print (countdown_string)
```

### Multiplication and Exponents

string * number	combine that string
string * string	crash
number * number	math - multiply
string ** string	crash
number ** number	math-exponent
string ** number	crash

### Code

```
mystring = "hello"

print (mystring)

firstname = input ("What is your firstname?")
lastname = input ("What is your lastname?")

fullname = firstname + " " + lastname

print(fullname)

letternumber = int(input("What is letter number?
"))

if lettername > len(fullname):

print ("invalid letter number, try again! ")

else:

letter = (fullname(letternumber) )

print (letter)

numberletter = int(input ( "How many times to
print letter " ) )
```

### Area of Circle

```
while 2==2:

    #Ask the user for a radius of a
circle
    user_radius = input("What is
the radius? ")

    #Convert the given radius to a
floating point
    radius = float(user_radius)

    #make a variable called pi
    pi = 3.1415

    #Calculate the area of the
circle using exponents
    area = pi radius * 2

    #display the area of the circle
to the user
    print ("The area of the circle
is",area)
```

### Binary

```
user_number = input("Enter a number
to convert to binary:")
number = int(user_number)
binary_string = ''
while (number>0):
    remainder = number % 2
```

### Binary (cont)

```
        binary_string =
str(remainder) +
str(binary_string)
        number = number // 2
print ("Binary string is '' ,
binary_string)
```

