

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

Math (cont)

>	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)
letter number = int(input("What is letter number? "))
if letter number > len(fullname):
    print("invalid letter number, try again! ")
else:
    letter = (fullname[letter number])
    print(letter)
    number letter = int(input("How many times to print letter? "))
    if number letter > 100:
        print("Too many letters to print! ")
    else:
        print(letter * number letter)
```

Code1

```
# Create a program that receive a number from the user
# from that number on the same line
#receive 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 > 0: #the number is greater than 0
    remainder = number % 10
    print(remainder)
```



Code1 (cont)

```
> #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 first-
ame?")
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
    use r_r adius =
input( "What is the radius? ")
    #Co nvert the given
radius to a floating point
    radius = float( use -
r_r adius)
    #make a variable called
pi
    pi = 3.1415
    #Ca lculate the area of
the circle using exponents
    area = piadius * 2
    #di splay 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(us er_ number)
binary_string = ''
while (numbe r>0):
    rem ainder =
number % 2
    bin ary_string =
str(re mai nder) + str(bi nar -
y_s tring)
    number = number //
2
print ("Binary string is '' ,
binary_st ring)
```

