Computer Science is the study of algorithms

Interpreter turns python code into what computer can understand

Escape characters

\\=\

\”=”

\n = new line

\t= tab

Print(“professor rosen said \”hello.\””)

Operations

\*\* is ^

Cannot divide by 0

// is quotient without remainder

Mod by 10 gives last digit, mod by 100 gives last 2

Python does not characters, only strings

>= , <=, ==, and,

len(word) gives length

5<x<10 is allowed

Min(a,b,c)

Max

Abs(-7)=7

Chr(97)=’a’

Ord(‘a’)=97

Loops/If statements

If xxx:

Do this

Elif xxx:

Do this

Else:

Do this

For x in range(4): //does it 4 times

Do this

“”” multiline string “””

Creating Lists

L=[1,2,3]

l.append(5)

len(l) gives length

l[0:2]=[1,2]

l=list(range(100)) //l is a list that holds 0 to 99

l[::-1]=99 to 0

l[::2]= 0 to 98 even numbers

l[0:10:3]=[0,3,6,9] //takes index 0 to 10 and gets every third index

words.count(“eggs”) //returns 10 if list contains 10 eggs

words.index(“eggs”) //finds first index of list that holds eggs

var=”hi”)

list(var)=[h,i]

var.split() does same thing

var.split(x) //takes away x and splits sections into array

Tuples

T=(“hello”,”tuple”)

Tuples cannot append

Len(T) gives length of tuple

Strings

S=”hello”

S[0]=h

S[-1]=o

S[0:3]=hel

S[0:]=hello //this goes all the way to the end

S[:4]=hell //beginning to index 4

S[0:434343]= hello

“”.join(string) //joins list

“ “.join(string) //joins with spaces

For index, color in enumerate(colors):

Bob.forward((index+1)+50)

Print(index, color) //0 red 1 blue 2 green

Sep=”//” separates with slash (xx,xx,xx)

Random

Random.choice(string)

Sys

Import Sys

Sys.exucationtime(5000)

Chr(ord(‘z’)+3)

Value=Ord(letter)-ord(“a”)

Key=13

Chr(((value+key)%26)+ord(“a”))

“”.join(l)

File reading

Data=open(“xxx”,’r’)

Text=data.readlines()

Count={}

Count[“luck”]=0

dictionary

D={}

You can give parameters values

**Regex**

[aeiou][aeiou] = [aeious]{2} finds two vowels next to each other

A{2,5} 2 to 5 a’s ,try to find as many a’s as possible

/O+A+/ at least one o and one a

“Bat(man|woman)”

\d = digit

\w+ all alphanumeric

\s space

c.t c%t

/W+ anything not alphanumeric

/d/d/d-/d/d/d-/d/d/d/d phone number

R”” 🡨 raw string, avoid escape characters

Phonenumbers=re.compile()

Match=phonenumbers.search(string)

Print(match.group())

Given a file replace all instances of social security number with something (10 pt on final)

^= beginning

$ = end

^abc$ looks for just abc

R”\[w+\] [xxx]