Lecture 3

“we have outlined lot of basic elements of programming”

Iterative Programming(Steps)

1. which variable is changing?(what are we counting?)
2. initialize that variable outside the loop
3. setup the right “end” test(must involve the variable that changes”
4. construct the block of code
5. the variable must be changed inside this block
6. what to do when it is over?

write flowchart for the piece of code that you wanna write

to debug, simulate the code.

Defensive Programming: make sure that I am going through all the possible parts. and for each of these parts has some meaningful output of the program.

Always believe that the user and yourself the programmer both of you are dumb

Exhaustive enumeration: try all “reasonable” values until the solution is found.

instead of incrementing something, why don’t we have some kinda collection of numbers that we want?

for: loop allows the variable to be in some collection. any kind of collection. collection of primes etc.

tuple:ordered sequence of elements(immutable ie can’t change it)(like arrays in C++)

to define tuples:

test = (2,3,5,7)

test[0]=2

counting of tuple starts at 0.

tuple can take a negative index.

test=(2,3,5,7,11)

test[-1]=11

negative integer in the sense that we start from the end

slicing of a tuple: test[1:3] will start from the index 1 to index 3 without including index 3

if starting index is not given then it will go from 0 to the end of the tuple

and if ending index is not given then it goes from the starting index to the end

we can concatenate two tuples. by using the following syntax

**REMEMBER THAT A TUPLE IS DIFFERENT FROM AN INTEGER AS WHILE WRITING A TUPLE WE WRITE (1,) THIS IS A TUPLE WHEREAS (1) THIS IS A SIMPLE INTEGER!**

a string is very much like a tuple. it is an ordered sequence of characters. it has the same kinda property

we would like to do concatenation, slicing, etc as done with tuple with a string.

type conversion is: str(1952) makes the number 1952 a string ‘1952’

for loop can take the string as a range too.

for c in ‘abcd’:

print c, ‘ is a letter’