**IDX G9 CS H STUDY GUIDE ISSUE 2**

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While Loop

**Lesson 9:**

while() function

* while *condition*:
* similar to if() loop, but will keep executing the loop until the requirement after while is FALSE.
* Format:

while condition:

statement

* + Ex.

n, nsum = 0,0

while n <= 5:

nsum += n

n += 1

print(nsum)

output = 15 (0+1+2+3+4+5)

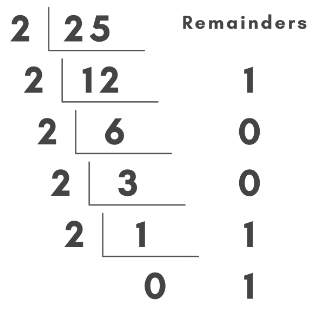
* while True:
  + basicly an infinite loop

augmented assignment statement

* n = n + m 🡪 n+=m
* n = n \* m 🡪 n\*=m
* n = n / m 🡪 n/=m
* n = n % m 🡪 n%=m
* and so on……

binary – decimal conversion

ex. Successive Division Method



25 (base 10) is convert into 10011 (base 2) with this method.

Example python code:

Sample input: 114514

Sample output: 11011111101010010 (binary of 114514)

def dec\_to\_bin(n):

b = ''

while n > 0:

b = str(n % 2) + b

n //= 2

return b or '0'

print(dec\_to\_bin(int(input())))

You can also use the bin() function to convert decimals into binary, but it won’t work on the test

Example python code to convert from dec to bin:

def bin\_to\_dec(b):

total = 0

for i in range(len(b)):

total += int(b[len(b) - 1 - i]) \* (2 \*\* i)

return total

Example python code to convert from base n to base m:

def n\_to\_m(num\_str, base\_n, base\_m):

decimal = 0

for i in range(len(num\_str)):

decimal += int(num\_str[i]) \* (base\_n \*\* (len(num\_str) - 1 - i))

if decimal == 0:

return '0'

result = ''

while decimal > 0:

result = str(decimal % base\_m) + result

decimal //= base\_m

return result

**Lesson 10:**

strip() function

* str.strip()
  + return a new string without any whitespace characters at the beginning or end
  + Ex.

str = ' helloworld '  
print(str.strip())

output = helloworld

* str.strip(‘s’)
  + return a new string with leading and trailing occurrences of ‘s’ removed
  + Ex.

str = 'sshelloworldss'  
print(str.strip('s'))

output = helloworld

str = 'sshelloworldshs'  
print(str.strip('s'))

output = helloworldsh

* str.lstip() and str.rstip()
  + return a nw string without whitespace character from the left or right ends.
  + Ex.

str = 'sshelloworldss'  
print(str.lstrip('s'))

output = helloworldss

str = 'sshelloworldss'  
print(str.rstrip('s'))

output = sshelloworld

string indexing

* str[index]
  + Ex.

str = 'helloworld'  
print(str[0])

output = h

print(str[-1])

output = d

membership operators

* Useful to determine whether a value is or isn’t in a list or string
* in & not in
  + Ex.

str = 'helloworld'  
print('h' in str)

print(' ' in str)

output = True False

len() function

* len(str)
  + couts the length of the string *str*
  + Ex.

str = 'helloworld'  
print(len(str))

String Slicing

* str[start slice:end slice]
  + Start slice inclusive, end slice exclusive
  + Ex.

str = 'helloworld'  
print(str[:-1])  
print(str[-1:])  
print(str[:1])  
print(str[1:])

output =

helloworl

d

h

elloworld

join() function

* WILL NOT CHANGE THE STRING OR LIST ITSELF
* delimiter.join(list)
  + concatenate any number of strings in a list with delimiter in between, returns a string
  + Ex.

lst = ['hello','world']  
print(' '.join(lst))

print(lst)

output =

hello world

['hello', 'world']

* delimiter.join(str)
  + concatenate any number of characters in the stinrg with delimiter in between
  + Ex.

str = 'helloworld'  
print(' '.join(str))

print(str)

output =

h e l l o w o r l d

helloworld

split() function

* WILL NOT CHANGE THE STRING ITSELF
* str.split()
  + Ex.

str = 'hello world'  
print(str.split())  
print(str)

* + output =

['hello', 'world']

hello world

* str.split(delimiter)
  + Ex.

str = 'ABhelloABworldAB'  
print(str.split('AB'))

print(str)

output =

['', 'hello', 'world', '']

ABhelloABworldAB

Changing case in a string

* also WILL NOT CHANGE THE STRING ITSELF
* str.upper()
  + Ex.

str = 'hello World'  
print(str.upper())  
print(str)

output =

HELLO WORLD

hello World

* str.lower()
  + Ex.

str = 'hello World'  
print(str.lower())  
print(str)

output =

hello world

hello World

* str.title()
  + Ex.

str = 'hello World'  
print(str.title())  
print(str)

output =

Hello World

hello World

isxxx() function

* str.isupper()
  + Returns True if all letters are uppercase, otherwise return False
* str.islower()
  + Returns True if all letters are lowercase, otherwise return False
* str.istitle()
  + Returns True if all letters are uppercase, otherwise return False
* str.isalnum()
  + Returns True if the characters in the string are alphanumeric, otherwise False.
* str.isdigit()
  + Returns True if all the characters are digits, otherwise False.
* str.isalpha()
  + Returns True if all the characters are alphabets, otherwise False.