**IDX G9 CS H STUDY GUIDE ISSUE 1**

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Lesson 1:

* print(): function that prints out strings in the console
* ex. print(‘HelloWorld’), print(a) [where a is a variable with value]
* the end key of print() specifies what to be printed automatically at the end of the output, [i.e. print(a,end=’’), print(b) results in ‘ab’], it is ‘\n’ by default, which starts a new line
* Values:
  + String: words and symbols without numerical meaning, str()
  + Integers: integer numbers, int()
  + Floating numbers: numbers with decimal digits, float()
* Variables: containers for storing data values
  + Naming: can contain only letters, numbers, and underscores (no numbers at the start), no spaces, no special characters, avoid using reserved keywords
  + Naming: Camel Case *(ex. aBC)*, Snake Case *(ex. a\_b\_c)*, Pascal Case *(ex. ABC)*
  + Assigning: with the ‘=’ operator [a = 0]
  + Multiple assigning: a=b=c=1, a,b,c=1,2,3
  + str(), int(), float() converts to string, integer and floating numbers
  + input(): takes in data value from console
* Expressions: consist of values and operators, and always evaluate down to a single value *(ex. (2\*x + 2\*y)\*\*(1/2))*
* List: a collection of items in a particular order
* Defining: using the bracket ‘[ ]’ with commas as separation between elements *(ex. lst = [1,2,3,4])*
* Index: number of an element in a list *(ex. lst[0] = 1)*, starts from 0 for a list
* len(): returns the number of elements in a list (length)
* append(): adds an element to the end of a list
* insert(): inserts an element into some place in list
* del: deletes the element in a list with the corresponding index
* remove(): removes the element in a list with the corresponding value
* index(): returns the index of an element with the corresponding value in a list
* sum(): sums all the elements in the list
* split(): splits a string to a list by the given separation (space by default) *[ex. words = input().split()]*
* for loop: repeatedly perform the same task with each element in a list
  + for variable in somelist:

statements

* + range(): goes over a sequence of numbers
* random module:
  + randint(a,b): returns random integer in the closed interval [a,b].
* If statements:
  + Boolean values: True or False
  + Relational Operators: >, <, >=, <=, ==, !=
  + if condition:

statements

* + if, else, elif
* Boolean Operators:
  + and: True only if both values are True
  + or: True if either one is True
  + not: opposite Boolean values
  + precedence: not > and > or
  + %: computes the remainder *(ex. 4%3 = 1)*
  + //: returns the floor value of the quotient produced by dividing the two operands *(ex. 4//3 = 1)*