Section 1.1

Coverage

1. Data Analysis (in slide)
2. Why Python (in slide)
3. Development tools
   1. Jupiter Notebook (used for demonstration and your practice after configuration)
   2. Google colab research (used for your practice, anytime)
   3. Visual Studie Code (alternative tool for development, among many others)
4. Syntax and semantics, syntax error
   1. printing syntax

print("hello python")

* 1. comments syntax

#python syntax

1. Variables, containers for storing data values
   1. pi = 22/7

print(pi)

* 1. rules of variable names

#words separated by undercore

tz\_oil\_price = 2512.45

print(tz\_oil\_price)

#camels case

tzOilPrice = 2404.13

print(tzOilPrice)

#start with underscore

\_tzOilPrice = 2404.13

print(\_tzOilPrice)

#alphanumeric and underscore

\_tzOilPrice2021 = 2404.13

print(\_tzOilPrice2021)

#special characters not allowed

#\_tzOilPrice2021\* = 2404.13

#print(\_tzOilPrice2021\*)

#start with number not allowed

#1\_tzOilPrice2021 = 2404.13

#print(1\_tzOilPrice2021)

1. Data types

#Data types

#Text str

tz\_currency = "shilling"

ke\_currency = 'shilling'

print(tz\_currency)

#Numeric int float complex

usd\_tz\_rate = 2454.34 #float

num\_region\_tz = 31 #int

print(usd\_tz\_rate)

print(num\_region\_tz)

#Boolean

has\_risk = True

has\_npl\_risk = False

#Sequence Types list tuple

stairs = [1,2,3,4,5] #list can change

stairs\_tuple = (1,2,3,4,5) #tuple can not change

#banks\_in\_tz = [''] #list

#Set set

stairs\_set = {1,2,3,4,5} #do not allow duplicate

#Mapping dictionary

days\_of\_week = {1:"sunday", 2:"monday"}

Demo on data types

1. Boolean

if(has\_risk):

print("Has risk")

1. List

stairs = ['CRDB','NBC','EXIM']

print(stairs)

#for a list of n objects, if you want to display nth object use listname[n-1]

#print first element

print(stairs[0])

#print second element

print(stairs[1])

#print third element

print(stairs[2])

#print third element using negative index

print(stairs[-3])

1. To know data type

#to know data type

y = 455.3

type(y)

1. To convert data type such as float to int

z = int(y)

type(z)

1. Check if data type is what you desire

if isinstance(y, int):

print("it is integer")

print(type(y))

else:

print("it is not integer")

loan\_classification = [1,2,'current',3]

for value in loan\_classification:

if isinstance(value, int):

print('ok it is integer')

else:

print('it is not integer')

1. Operations

#operations

#addition, subtraction, division, multiplication, exponent, logarithm

#addition

x = 5 #int

y = 7 #int

z = x + y

print(z)

type(z)

x = 5.2

y = 7

z = x + y

print(z)

type(z)

x = 5.2

m = 'hello'

z = x + m

print(z)

type(z)

#subtraction

p = x - y

p = round(p,2)

print(p)

#multiplication

t = x \* y

print(t)

#division

u = x / y

u = round(u,3)

print(u)

#modulus or reminder

#33 / 5

#you want 6

#you want 3

print(33/5) # 6.6

print(33//5) # 6

print(33 % 5) # 3

#ceiling and floor

import math

aa = math.ceil(33.7)

print(aa)

#you can also use print(math.ceil(33.7))

import math

ab = math.floor(-33.7)

print(ab)

#-34

Reference:

<https://www.w3schools.com/python/default.asp>