**DATATYPES :**

a=10  
print(a)  
#use hash to write comments  
#in python lines do not end with a colon

a=10 #declaring a variable .you do not need to give type of variable like int or float etc  
print(a)

#declaring and assigning multiple variable in one line  
z,b,c=10,20.3,"Mizzu"  
print(a,z,b,c)  
  
  
  
#in order to print an output with multiple datatypes like 'the value is 10'(concatenate 2 datatypes)  
print("{} {}".format("value is", b))  
  
  
#if you want to know the datatypes of your variables  
print(type(a),type(c),type(b))  
print(type(a))  
  
  
#exercise 1 :Create a variable named greeting and assign it the string  
# "Welcome to Python Programming".  
#Print the greeting variable.  
#Modify the string to include your instructor name "Rahul!".  
# For example, "Welcome to Python Programming, [Instructor Name]!"  
# and print the modified string.  
greeting = "Welcome to Python Programming"  
print(greeting)  
greeting\_with\_name = "Welcome to python programming , Rahul!"

#not required since both are same datatypes stringprint("{} {}".format(greeting,"Mizzi!"))  
print(greeting\_with\_name)  
  
  
  
#exercise 2 :Create three variables: age, height, and favorite\_color.  
# Assign them values 25, 5.9, blue:  
#age: an integer (e.g., 25)  
#height: a float (e.g., 5.9)  
#favorite\_color: a string (e.g., "blue")  
#Use the print function to display each variable and its type using the type() function  
age = 29  
height = 5.9  
favourite\_color = "blue"  
print(age,type(age),height,type(height),favourite\_color,type(favourite\_color))  
  
  
  
# Dataypes in python : 1. Numeric 2. string 3. List 4. Tuple 5.Dictionary  
# 1. Numeric datatypes in python : int , float,complex  
  
  
  
#Concatenating two string datatypes  
a = "string in a double quote"  
b= 'string in a single quote'  
print(a)  
print(b)  
# using ',' to concatenate the two or several strings  
print(a,"concatenated with",b)  
#using '+' to concate the two or several strings  
print(a+" concated with "+b)  
  
  
  
#3. List : another dataype in python  
#allows multiple values in one variable having multiple datatypes  
#always in square brackets, indexing starts with zero

value = [1,10.2,"mizzi",34,"babbi",40,30.9] #value is the lists name ,can be anything  
print(value) #printing entire list  
print(value[0]) # index 0 , to print first value of the list  
print(value[-1]) # print last value of the list  
print(value[1:3])#print a range of values from the list till 2 will exclude 3  
value.insert(4,"zaib") #inserting a value in the original list  
print(value)  
value.append(200) #adding value at the end of the list  
print(value)  
value[4] = "Mumma" #replacing/updating a value from the list  
print(value)  
del value[1] #deleting a value from the list  
print(value)  
  
  
#exercise :Create a list named fruits that contains below five different fruit names  
# (strings).  
#"apple", "banana", "cherry", "date", "elderberry"  
#Print the first and last elements of the list.  
#Use slicing to print the second and third fruits from the list.  
fruits = ["apple", "banana", "cherry", "date", "elderberry"]  
print(fruits)  
print(fruits[0],fruits[-1])  
print(fruits[1:3])  
  
  
  
# 4. Tuple : same as lists but it cannot be changed or modified once declared  
#also its wirtten in round brackets instead of square ones  
val = ("apple",20,89.7,"banana")  
print(val)  
#val[2] = 89.2 #should give error as updating is not supported by tuple  
#print(val)  
  
  
  
#5. Dictionary : syntax (key : value)  
# key and value both can be of int or str datatype

# comes in curly brackets  
dic = {1:"zaib",2:"babbi","age1":32,3:"mizzi","age2":36,"age3":"baby"}  
print(dic["age1"]) # print(dictionary\_name[key])  
print(dic["age1"],dic[1])

#creating dictionary in runtime and adding data in dictionary  
dict = {} #dictionary thats empty  
dict["baby\_name"] = "Mizzi" # value in square brack is key , Mizzi is the vale (key:value)  
dict["age"] = 3  
print(dict)