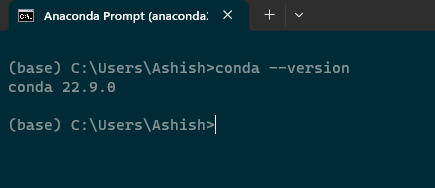
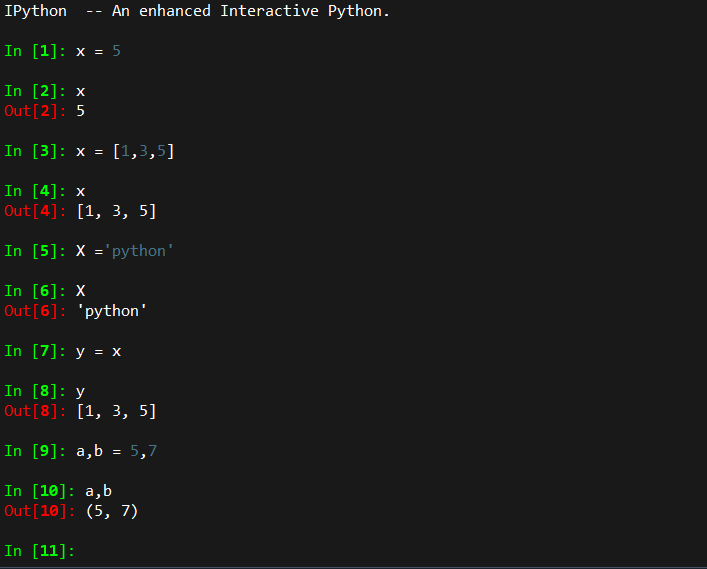
Module 2

Anaconda Installation on Windows Machine

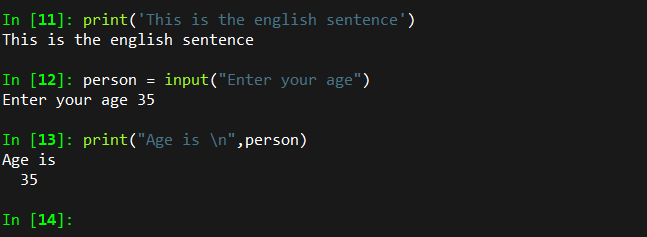


\_\_✓\_\_ I certify that I have installed Anaconda or similar python environment and have practiced python by following the Module 2 as shown below

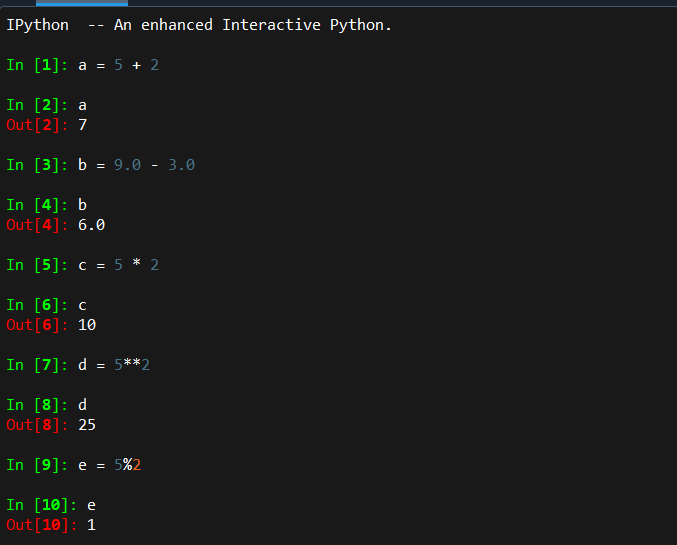
**Variables and Objects**

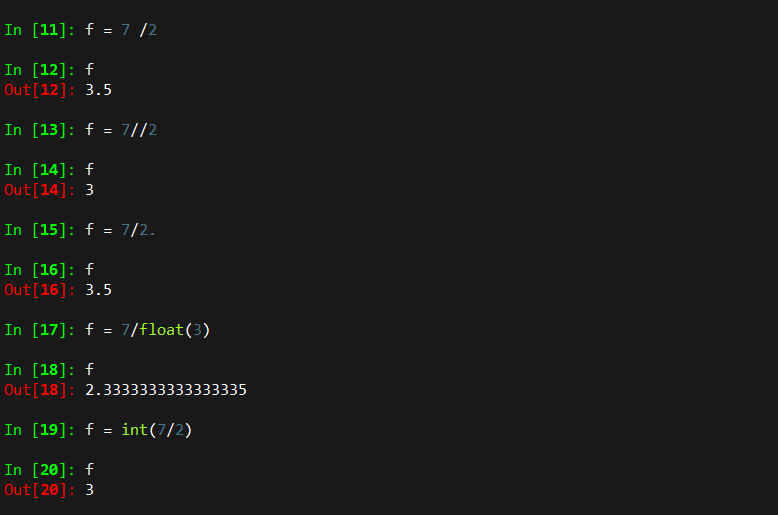
****

**Input and Output**

****

#### **Arithmetic and Complex Numbers**



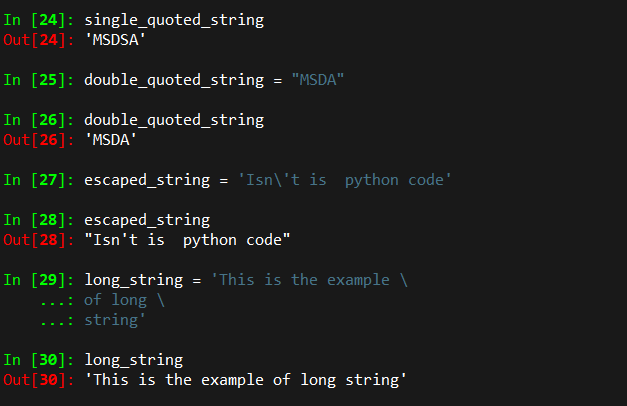


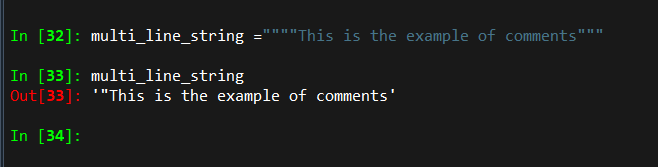
f = 1+2.56j

print(f.real,f.imag)

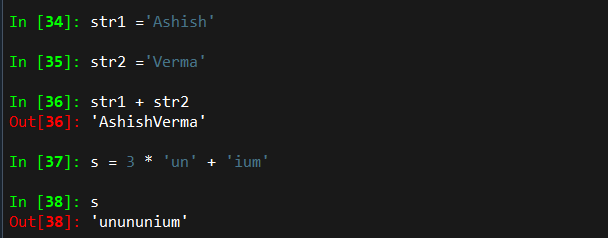
1. 2.56

#### **Strings**



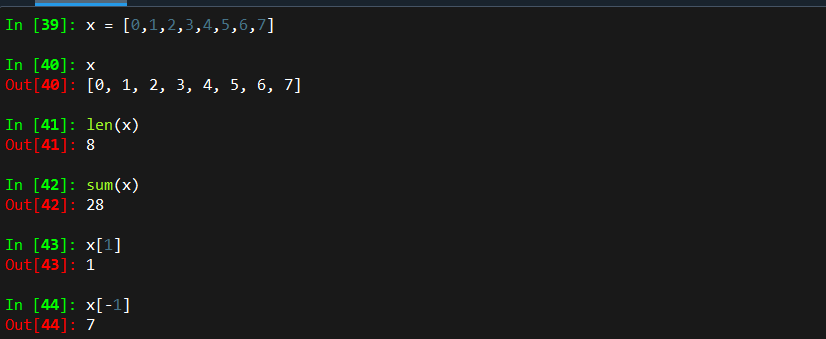


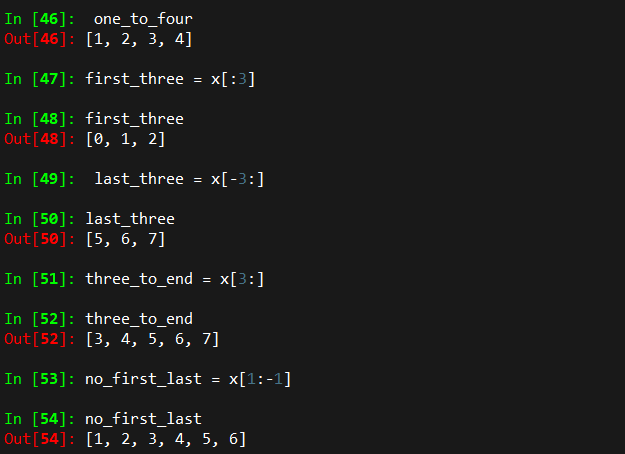
**String Concatenation**

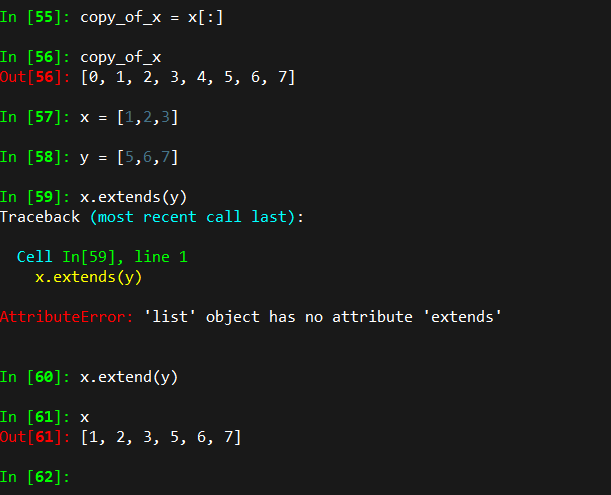
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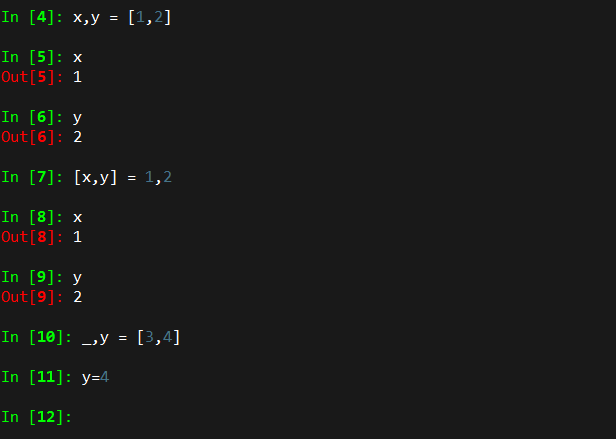
**Collection Data Types**

1. **List**: a collection which is ordered and *changeable*.  Allows duplicate members.
2. **Tuple**:a collection which is ordered and *unchageable*.  Allows duplicate members.
3. **Set**: a collection which is unordered and unindexed.  No duplicate members.
4. **Dictionary**: a collection which is unordered, changeable and indexed.  No duplicate members.

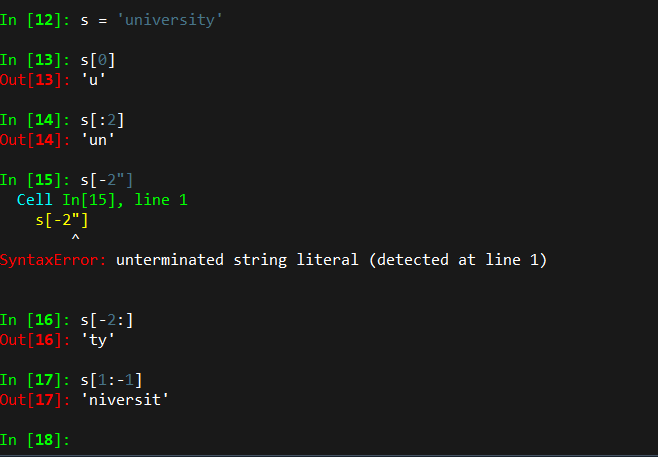
****

****

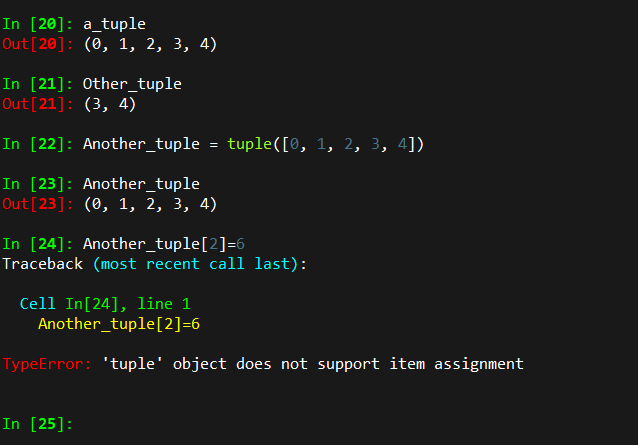
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****

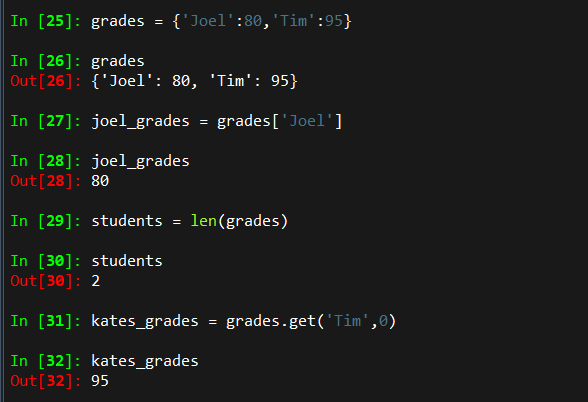
**Strings can also be sliced. But they cannot be modified (they are immutable).**

****

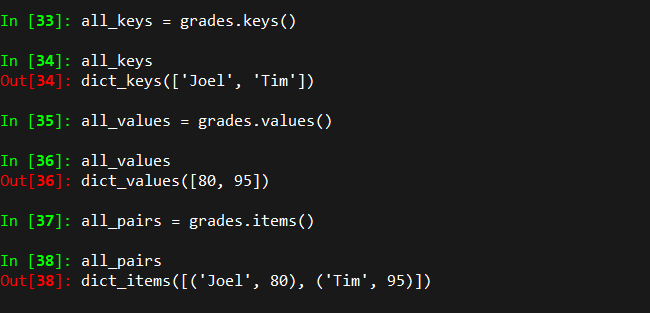
**Tuples--similar to lists, but immutable. Note:  tuple is defined by comma, not (), which is only used for convenience.  So a=(1) is not a tuple, but a = (1,) is.**

****

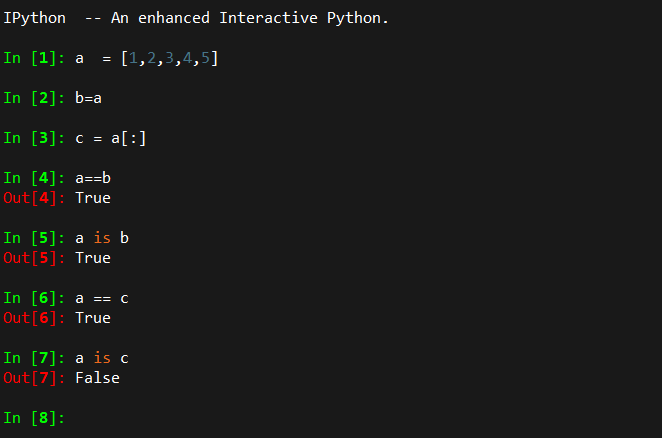
**Dictionaries**

****

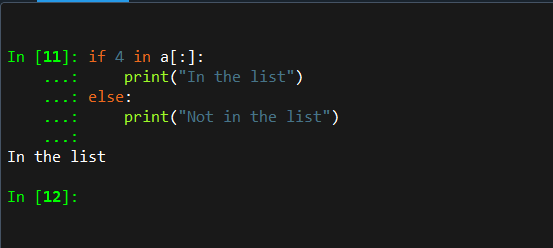
**Get all items**

****

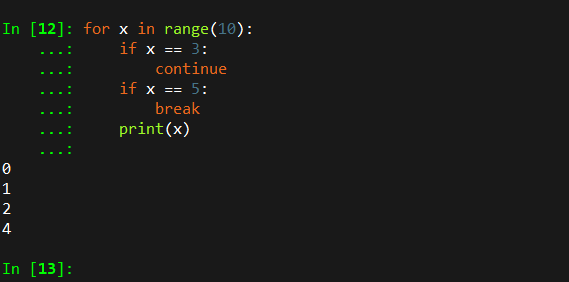
**Control Flow**

****

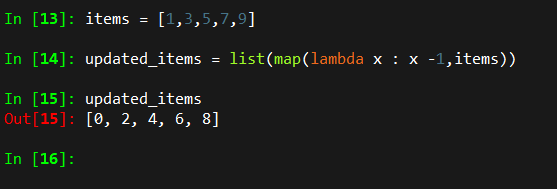
**Else If**

****

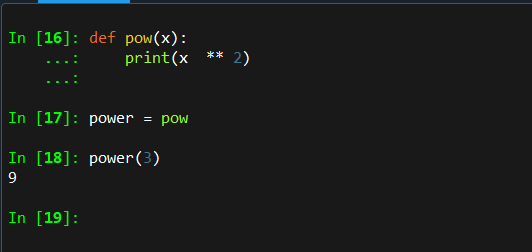
**Loops**

****

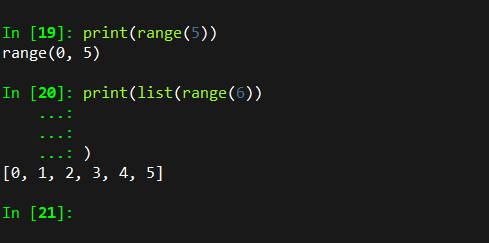
**Functions**

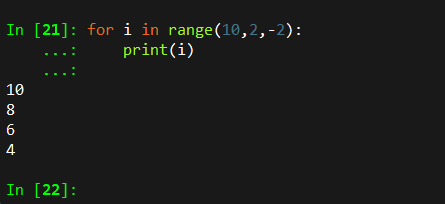
****

**Functions as Objects**

****

**Range Function**

****

****

# Activity 1

The Company Naukha's new CEO's salary is $350,000. Use the following equation to generate the tax amount, where S=$300,001 is the Start of the income bracket, R=32% is the tax rate and A=$60,400 is the total tax amount owes from previous brackets.

tax = (income - S) \* R + A

tax = (350,000 – 300,001) x 32% + 60,400 = $76,399.68

 Use the python multiple assignment to assign values for S, R and A.

 Write a simple function calculate\_tax that takes the salary as the input and returns the calculated tax value.

def calc\_tax(salary:int) -> float:

S,R,A = 300001,0.32,60400

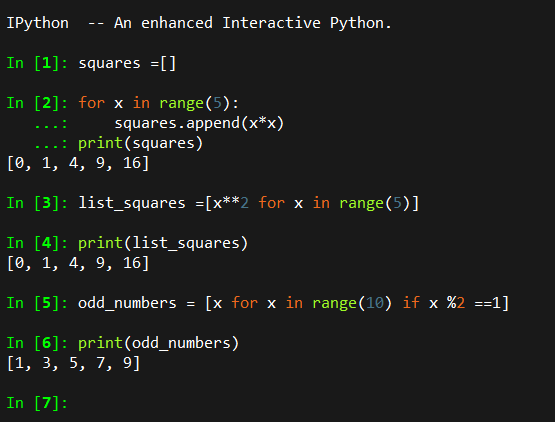
tax = (salary - S) \* R + A

return tax

calc\_tax(350000)

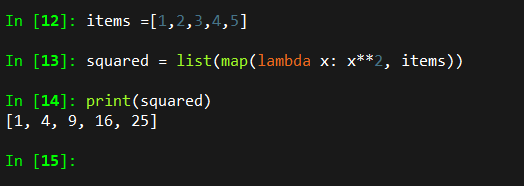
Out[23]: 76399.68

### ****List comprehension****

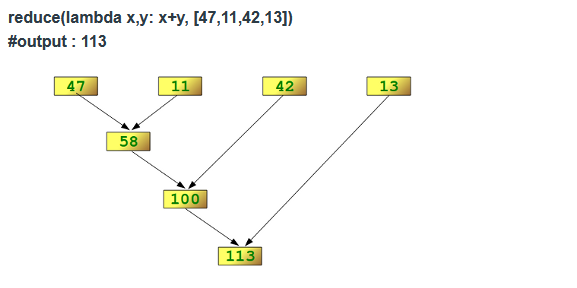
****

### ****High Order Functions****

**map(function\_to\_apply, list\_of\_inputs)**

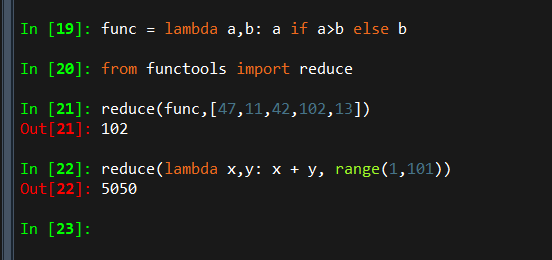
****

**The function reduce(func, seq) continually applies the function func() to the sequence seq. It returns a single value.**

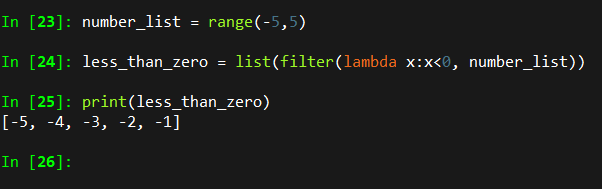
****

**Determining the maximum of a list of numerical values by using reduce and**

**Calculating the sum of the numbers from 1 to 100:**

****

**Filter creates a list of elements for which a function returns true.**

****

### ****Packing/Unpacking****

**ZIP:** Useful to combined multiple lists into a list of tuples

****

### **Module random**

### 