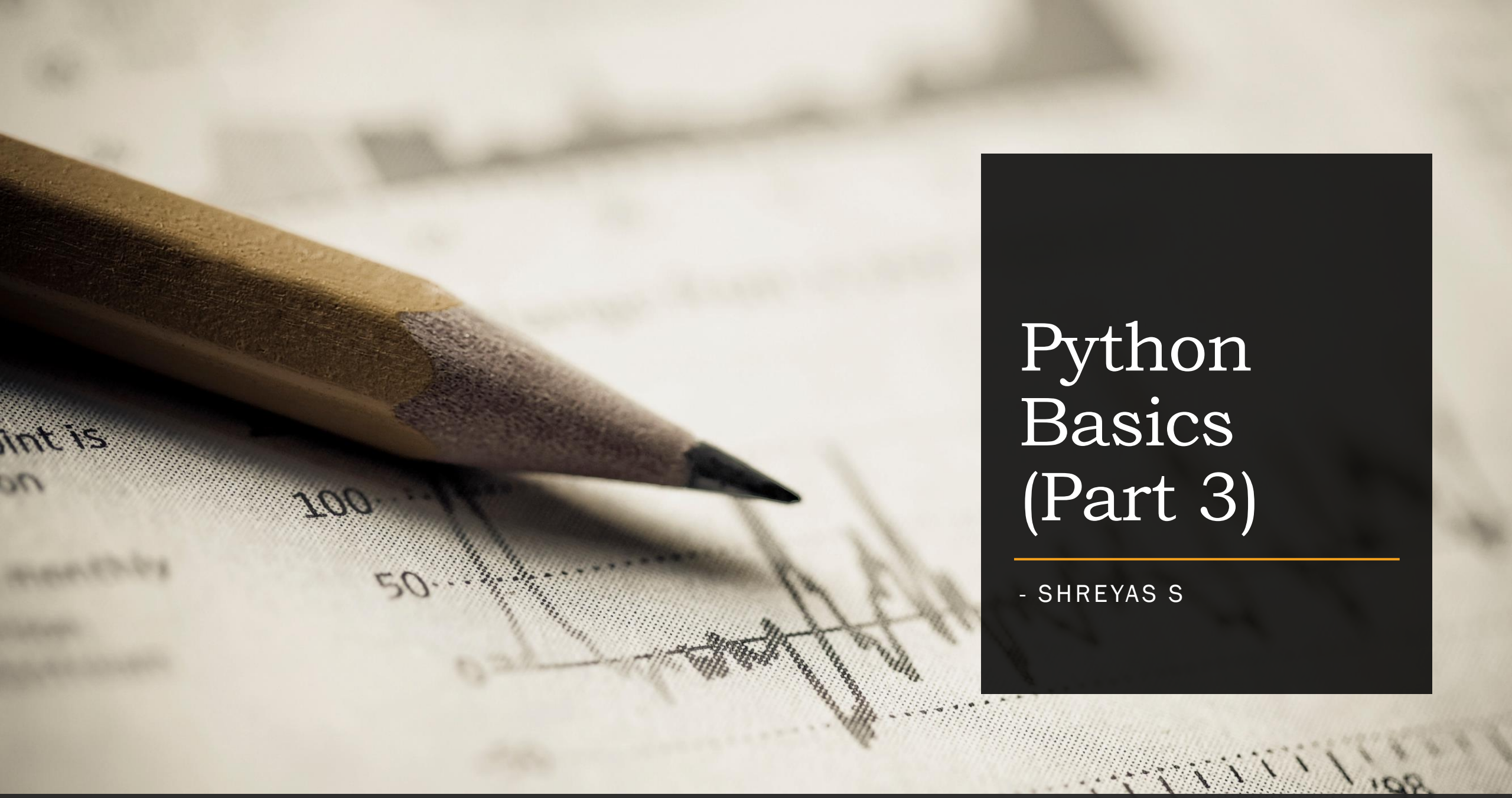

Python Basics (Part 3)

- SHREYAS S

Agenda

- Recap of previous session
- Type conversion
- Functions and arguments
- Lambda function
- Classes and objects
- Scope

Recap of previous section

- Operators
- Indentation
- Conditionals (if, if/else, nested if/else)
- Loops (for, while)
- Break, continue and else in loops
- String operations
- Object Oriented Programming concepts

Type Conversion

- In python the concept of type conversion helps us to convert one data type to other easily.
- This is widely used in real world programming problems.
- Converting to integer : int()
- Converting to float : float()
- Converting to string : str()
- Converting to list : list()
- Converting to tuple : tuple()
- Converting to set : set()
- Tuple of key value pair can be converted to dictionaries.

Functions

- Function in python is a block of code which is executed only when it is called.
- You can pass n number of data to functions on which the logic needs to be applied. These are known as function arguments or function parameters.
- The number of parameters that you pass while declaring a function and while calling should match else it would raise an error.
- You can pass default values to parameters while creating functions.
- You can create recursive function as well where you call the same function that you are declaring inside that function.
- After calculation the modified data can be returned from the function which can be used further in the code.

Lambda functions

- Lambda function is an anonymous function which is much smaller to normal function.
- While creating lambda function you need to start with a keyword lambda.
- You can pass multiple parameters to this function but there should be only one expression.
- The whole lambda function definition needs to be assigned to a variables and then this variable can be used to call the function.
- You can use lambda functions inside any other normal functions in python.

Classes and objects

- In the last lecture we saw some Object oriented programming concepts wherein we group related variables and functions together. Here group are called objects, variables in that group are called properties of the object and the functions in that group are called methods of the object.
- Classes are the way we define the blueprint or design for creating objects.
- We have already seen a number of built-in data types in the previous lecture like int, float, list etc.
- When the class is created by the developer then it is known as user defined class.
- The variables (properties) and functions (methods) of a class can be called by using the object created for that class.

Classes and objects

- Self keyword is a parameter that can be used to represent the instance of class. It should be the first parameter of the function.
- __init__() function gets executed when the class is being initiated. You can assign values to variables of class using this method while creating object. This function is automatically called new object of the class is being created. It is called as constructor.
- You can modify object properties as well as delete them.
- You can also delete the object that has been created.
- Just like we use pass in if/else or loops we can use the same in classes as well.

Scope

- Like we had discussed in previous sessions we will look into how does scope of a variable work in python.
- A variable declared inside a function is called as local variable which can be accessed only from inside the function.
- A variable that is declared outside of a function is known as global variable which can be accessed from anywhere in the program.
- You can convert local variable inside a function to global variable using the global keyword.

Agenda for Next Session

- ❑ Fibonacci Sequences
- ❑ Prime Numbers
- ❑ 0/1 Knapsack Problem

QUESTIONS?

THANK YOU