* What is Python and why is it popular?
  + Python is a programming language for **web & server-based development**. Indentation is another noticeable thing during development.
  + Availability of **rich set of libraries, easy to learn & use, agility (time -to- market), usability in Data Science, AI, NLP, IOT, Automation, Academic**, etc. will be the praising factor (since its covering majority of the Business Units from legacy to latest techs) to become so popular.
* What are the differences between Python 2 and Python 3?
  + Python3 is **easier to learn** than python2 helps to learn it easily from novice to experts.
  + Pyhton3 doesn’t have **backward compatible** with version 2.
  + Some **libraries available only in specific version** may restrict the project to retain the older version from upgrade to version 3
  + In Python 2, the built-in functions range() and zip() return lists, while Python 3 return iterators. This change improves performance and memory usage in many cases.
  + Syntactical changes in **handling exceptions**
* What is the difference between a tuple and a list in Python?
  + Tuples are **immutable** so it’s **faster** and Lists are **mutable** will **slower** when compared to Tuples.
  + Lists have **many built-in** methods when compared to Tuples.
  + Tuples will be used when there will not be any change in the data set.
* How do you create a dictionary in Python?
  + Python dictionary is an ordered collection of items. It stores **elements in key/value pairs.**
  + Keys are immutable whereas values are mutable.
  + Can add/update/remove/del elements from dict. It supports methods to sort, clear, all, any, etc.,
  + **Example** dict\_sample = {“name”: “Alan”, “Dept”: “IT”, “Age”: “45”}
* What is a function in Python and how do you define one?
  + Functions are block of organized, reusable code that is used to perform a single, related action. **Functions provide better modularity for applications and a high degree of code reusability**. Functions which are readily available to use and provided by python is Built-in func and the one which we create for specific need during development are user-defined funcs.
  + Function:

def samplefunc( str ):

// Add logic here

return data

* What is object-oriented programming (OOP) and how does it relate to Python?
  + Object-oriented programming (OOP) is a method of structuring a program by bundling related properties and behaviors into individual objects. It’s useful in **modeling concrete real world objects** like companies and employees.
  + **Python is a versatile programming language that supports various programming paradigms, including object-oriented programming (OOP)** using objects and classes. Also, python provides support for the majority of the oops concepts.
* How do you handle exceptions in Python?
  + **try...except** Block for handling exceptions in general as well specific exceptions.
  + **try...finally** will be used when a block to be exec irrespective of the error occurrence.
  + **User-defined exceptions** should be written to handle issues when the application grows wider.
* How do you read and write files in Python?
  + There are many I\O operations that can be performed with file data. Reading\writing data from any files can be done using **read()\write() method** in python.
  + Before doing any read\write action on the file it should be created\opened with file.open() method with **appropriate mode**(x- create new, w – create new \overwrite existing with same name)
  + **Methods** support for I\O operations – write\writelines, read\readline\ readlines, seek\close, etc.,
* How do you install and use external packages in Python?
  + **External packages** can be installed using **pip package**. For **example**, to install the NumPy package, exec the cmd “pip install numpy” in the terminal\cmd.
  + The installed package can be used in the python file by **importing** it in the file as “import numpy”. With that import we can able to use the **functions** provided by the package.

* How do you use the "if" statement in Python to perform conditional execution?
  + It’s gives the ability to **check conditions and change the behavior of the program** accordingly.
  + If is an conditional execution statement will be used with **if\if .. else\ if..elif..else**. It can be used under any looping situations.