* **What is Python and why is it popular?**

Python is a popular, beginner-friendly programming language used for web development, machine learning, analytics, etc.,

Simple syntax and easy to use for beginners as well as professionals.

It’s first release in 1991.

* **What are the differences between Python 2 and Python 3?**

Python3 is the latest version and has significant changes and improvements over Python2.

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| --- | --- |
| **Python2** | **Python3** |
| Python2 released in 2000. Python2 was sunsetted in 2020. | Python3 in 2008. |
| Print used as keyword.  Ex: Print "Hello" | Print used as function.  Ex: Print("Hello") |
| Integer division returns an integer.  Ex: 3/2 -> 1 | Integer division returns float.  Ex: 3/2 -> 1.5 |
| try: except Exception, e | try: except Exception as e |
| Super() used only with params | Super() used without params as well |
| Uses Ascii by and support only | Uses Unicode by default and support wide range of characters. |

* **What is the difference between a tuple and a list in Python?**

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| --- | --- |
| **Tuple** | **List** |
| Tuple is ordered and unchangeable. Immutable. | List is ordered and changeable (add/remove/modify). Mutable. |
| tuple = (a,b) | list = [a,b] |
| Allows duplicates | Allows duplicates |
| Tuples are faster and more memory efficient | Slower and less memory efficient than tuples. |

* **How do you create a dictionary in Python?**

dictionary will be created as a 'key' : 'value' pairs.

empDict = {

"name": "Subbu",

"gender" : "Male"

}

print(empDict.get(‘age’,0)) #output 0. uses default value 0 if key is not found without throwing error when we use get method.

* **What is a function in Python and how do you define one?**

**function** is a block of code to perform certain logic and reusable.

it can accepts inputs as parameters and return data as a result but return is not a mandatory.

**Example**:

def testFunction(param1, param2):

return param1 + " Function " + param2

fnOutput = testFunction()

* **What is object-oriented programming (OOP) and how does it relate to Python?**

OOP is to create modular, reusable, and maintainable code by representing real- world concepts as objects. Python is an object-oriented programming language that fully supports OOP concepts such as encapsulation, inheritance, and polymorphism.

In Python, everything is an object, including integers, strings, and functions..

* **How do you handle exceptions in Python?**

In Python, exceptions can be handled using try-except blocks.

try block contains code that throws exception then except block will have code to handle that exception.

**try**:

err = 10/0

**except ZeroDivisionError as ex:**

print(str.format("Exception: {}" , ex))

* **How do you read and write files in Python?**

using write method we can write content to a file in python.

with open('questions1.txt','w') as f:

f.write('hello')

using open method we can read content from a file in python.

with open('questions1.txt', 'r') as f:

print(f.read())

* **How do you install and use external packages in Python?**

To install external packages use package manager pip,

for **example**: 'pip install <packagename>'

To use external package use import <packagename> ,

for **example**: import math

* **How do you use the "if" statement in Python to perform conditional execution?**

if expression:

true statements

else:

false statements

for **example**:

a,b = 5, 6

if a>b:

print(str.format("{} is greater than {}", a, b))

else:

print(str.format("{} is lesser than {}", a, b))