1. January 2023 Python Assignment

**1.Who developed Python Programming Language?**

Ans: Python was created by Guido van Rossum in the late 1980s

**2. Which type of Programming does Python support?**

Python is a high-level, interpreted programming language that supports multiple programming paradigms, including:

* Procedural programming
* Object-oriented programming (OOP)
* Functional programming
* Aspect-oriented programming (AOP)

Python is also dynamically typed, which means that the data types of variables are inferred at runtime rather than being explicitly declared. This makes Python a highly flexible and versatile language that is suitable for a wide range of applications, from web development and scientific computing to machine learning and data analysis.

**3. Is Python case sensitive when dealing with identifiers?**

Yes, Python is case-sensitive when dealing with identifiers, such as variable names, function names, and class names. This means that identifiers that differ only in their capitalization are considered different and separate entities in Python.

**4. What is the correct extension of the Python file?**

In Python, the convention is to use the ".py" file extension for Python source code files. This extension is used to indicate that the file contains Python code that can be executed by the Python interpreter.

Ipynb: ipynb file extension is used for computational notebooks that can be open with Jupyter Notebook and Google Colaboratory.

**5. Is Python code compiled or interpreted?**

Python code is interpreted, which means that the Python interpreter executes the code line by line in a sequential manner, rather than compiling the entire program into machine code all at once.

**6. Name a few blocks of code used to define in Python language?**

a module, a function body, and a class definition. Each command typed interactively is a block.

Here are some examples of code blocks in Python:

1. Function definitions:
2. If statements:
3. Loops:
4. Classes:

**7. State a character used to give single-line comments in Python?**

In Python, the hash symbol (#) is used to indicate a single-line comment.

**8. Mention functions which can help us to find the version of python that we are currently working on?**

**1) using sys.version**

import sys

print("Python version:", sys.version)

**2) command line**

$ python --version

**9. Python supports the creation of anonymous functions at runtime, using a construct called *"lambda" functions.***

**10. What does pip stand for python?**

In Python, pip stands for "Package Installer for Python". pip is a command-line tool for installing, upgrading, and managing Python packages and their dependencies. It is the most used package manager for Python.

**11. Mention a few built-in functions in python?**

Here are some examples of built-in functions in Python:

1. print(): Used to display text or other data .
2. len(): Returns the number of items in a sequence (e.g. a string, list, or tuple).
3. type(): Returns the type of an object (e.g. int, float, str, list, etc.).
4. range(): Generates a sequence of numbers within a specified range. range(0,11)
5. input(): Reads input from the user at the console.
6. sum(): Calculates the sum of a sequence of numbers.
7. min(): Returns the smallest item in a sequence.
8. max(): Returns the largest item in a sequence.
9. abs(): Returns the absolute value of a number.
10. round(): Rounds a number to a specified number of decimal places.

**12. What is the maximum possible length of an identifier in Python?**

An identifier can have a maximum length of 79 characters in Python.

**13. What are the benefits of using Python?**

1. Easy to learn and use: Python has a simple and easy-to-understand syntax that makes it an excellent language for beginners. The language emphasizes readability and ease of use, making it a great choice for both beginners and experienced programmers.
2. Large standard library: Python comes with a large standard library that includes many useful modules and functions that can save time and effort when building applications. There are also many third-party libraries and frameworks available that can be easily installed using tools like pip.
3. Cross-platform compatibility: Python is available on a wide range of platforms, including Windows, macOS, Linux, and many others. This makes it easy to write code that can run on multiple operating systems without significant modification.
4. Extensive community support: Python has a large and active community of developers who contribute to the language, create libraries and frameworks, and provide support and guidance to others.
5. Versatility: Python can be used for a wide variety of tasks, including web development, data analysis, scientific computing, artificial intelligence and machine learning, and more. This makes it a flexible language that can be used in many different contexts.
6. Open-source: Python is an open-source language, which means that the source code is available for anyone to view, modify, and distribute.

Overall, Python is a powerful and versatile language with many benefits that make it a popular choice for developers of all skill levels.

**14. How is memory managed in Python?**

Memory in Python is managed by Python private heap space. All Python objects and data structures are in a private heap. This private heap is taken care of by Python Interpreter itself, and a programmer doesn't have access to this private heap.

**15. How to install Python on Windows and set path variables?**

To install Python on Windows and set path variables, follow these steps:

1. Download the latest version of Python from the official website (<https://www.python.org/downloads/windows/>).
2. Run the downloaded executable file and follow the installation wizard to install Python on your computer. During the installation process, make sure to select the option to add Python to your system path.
3. Once Python is installed, you need to set the path variables to be able to run Python from the command prompt.
4. Open the Start menu and search for "Environment Variables".
5. Click on "Edit the system environment variables".
6. Click on the "Environment Variables" button.

* Under "System Variables", find the "Path" variable and click "Edit".
* Click "New" and add the path to the folder containing the Python executable (e.g. "C:\Python39").
* Click "OK" to save the changes.

To test if Python is correctly installed and the path variables are set, open a command prompt and type "python". This should open the Python interpreter and display the version number.

**16. Is indentation required in python?**

Yes, indentation is required in Python