Assignment Questions :1

1. Who developed Python Programming Language?

Answer: Python programming language was developed by Guido van Rossum in the late 1980s.

2. Which type of Programming does Python support?

Answer: Python supports a variety of programming paradigms, including:

1. Procedural Programming: Python allows you to write code using procedures or functions that perform certain actions or calculations.
2. Object-Oriented Programming: Python is an object-oriented programming language, which means it allows you to create and use classes and objects to organize and structure your code.
3. Functional Programming: Python also supports functional programming, which is a programming paradigm that emphasizes the use of pure functions, immutable data, and declarative programming.
4. Imperative Programming: Python is an imperative programming language, which means it allows you to write code that specifies how the computer should perform certain tasks step-by-step.

3. Is Python case sensitive when dealing with identifiers?

Answer: Yes, Python is a case-sensitive programming language when it comes to identifiers, such as variable names, function names, and class names.

For example, myVariable, MyVariable, and myvariable are considered to be three different variables in Python.

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

Answer: The correct extension for a Python file is .py.

5. Is Python code compiled or interpreted?

Answer: Python is an interpreted programming language, which means that it is not compiled into machine code that can be directly executed by a computer. Instead, the Python interpreter reads and executes the code line by line at runtime.

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

Answer: In Python, code blocks are defined by their indentation level, and are used to group together statements that should be executed together, such as the body of a loop or a function. Here are a few examples of code blocks in Python:

1. **If statement block:**

```
if x > 0:
   print("x is positive")
else:
   print("x is zero or negative")
```

2. **For loop block:**

```
for i in range(10):
   print(i)
```

3. **Function definition block:**

```
def add_numbers(a, b):
   c = a + b
   return c
```

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

Answer: In Python, the hash symbol (#) is used to indicate a single-line comment. Any text that follows the hash symbol on a line is ignored by the Python interpreter and is considered to be a comment.
Here's an example of a single-line comment in Python:

```
# This is a comment in Python
```

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

Answer: There are a few functions in Python that can help you find out the version of Python that you are currently working on. Here are three common methods:

1. sys.version - This function returns a string containing the version number of Python that is currently running.

```
import sys
print(sys.version)
```

2. platform.python_version() - This function returns a string containing the version number of Python and the implementation details, such as the platform and the compiler used.

```
import platform
print(platform.python_version())
```

3. sys.version_info - This function returns a tuple containing the version information as integers. You can use the elements of the tuple to check for specific version features or to compare versions.

```
import sys
print(sys.version_info)
```

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

Answer: Python supports the creation of anonymous functions at runtime using a construct called "lambda functions" or "lambda expressions".

```
square = lambda x: x**2
print(square(5))  # Output: 25
```

10. What does pip stand for python?

Answer:

pip stands for "Pip Installs Packages" (originally "Pip Installs Python"). It is a package manager for Python that is used to install and manage third-party packages and libraries that are not included in the standard Python library.

Pip allows you to easily install and uninstall packages from the Python Package Index (PyPI), which is a repository of open-source Python packages that can be installed with pip. Pip also manages dependencies between packages, which means that it can automatically install any other packages that a package depends on.

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

Answer: Python provides a rich set of built-in functions that are readily available to use in any Python program. Here are a few commonly used built-in functions in Python:

1. print() - This function is used to output text or variables to the console.
2. len() - This function returns the length of a sequence such as a string, list, or tuple.
3. type() - This function returns the data type of an object.
4. range() - This function generates a sequence of numbers from start to end, with an optional step value.
5. input() - This function is used to prompt the user to enter input from the console.
6. int() - This function converts a string or float to an integer.
7. float() - This function converts a string or integer to a float.
8. str() - This function converts an object to a string.
9. list() - This function converts an iterable to a list.
10. dict() - This function creates a new dictionary.

These are just a few examples of the many built-in functions that are available in Python. You can find a complete list of built-in functions in the Python documentation.

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

Answer: In Python, the maximum length of an identifier (variable, function, module, etc.) is not explicitly defined. However, PEP 8, which is the style guide for Python code, recommends that identifiers should be at most 79 characters long, with an absolute limit of 99 characters.

13. What are the benefits of using Python?

Answer: Python is a versatile, high-level programming language that has many benefits and advantages for developers. Here are some of the key benefits of using Python:

1. Easy to learn and use: Python has a simple, easy-to-understand syntax that makes it easy for beginners to learn and start coding. Its syntax is also easy to read, which makes it easier to collaborate with other developers.
2. Large standard library: Python comes with a large standard library that provides a wide range of tools and functionality, which means that developers don't need to write as much code from scratch. This can save time and effort and make development faster and more efficient.

14. How is memory managed in Python?

Answer: In Python, memory management is handled automatically by the Python interpreter through a mechanism called reference counting. Every object in Python is assigned a reference count, which is a count of the number of references to the object in memory.

When an object's reference count drops to zero, it is automatically deleted by the interpreter's garbage collector. This process is known as automatic memory management, and it helps to ensure that memory is used efficiently and that there are no memory leaks or other memory-related issues.

Python also has a built-in memory manager that handles the allocation and deallocation of memory for objects. The memory manager uses a combination of techniques such as caching, pooling, and segmentation to optimize memory usage and reduce the overhead of memory allocation and deallocation.

In addition to automatic memory management, Python also provides mechanisms for manual memory management, such as the del statement, which can be used to delete objects and reduce their reference count manually.

Overall, Python's memory management is designed to be efficient, flexible, and transparent to the developer, allowing them to focus on writing code without having to worry about memory management issues.

15. How to install Python on Windows and set path variables? 16. Is indentation required in python?

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

1. Download the Python
2. Run the installer and follow the prompts to install Python. Make sure to select the option to add Python to the PATH variable during the installation process.
3. Once the installation is complete, open the Command Prompt or PowerShell and type python --version to check if Python has been installed correctly.
4. If Python has been installed correctly, you should see the version number of Python printed to the console.
5. To set the PATH variable for Python manually, you can follow these steps:
    - Open the Start menu and search for "Environment Variables".
    - Click on "Edit the system environment variables".
    - Click on the "Environment Variables" button.
    - In the "System variables" section, find the "Path" variable and click "Edit".
    - Click "New" and add the path to the Python installation directory (e.g., C:\Python39).
    - Click "OK" to save the changes.

Now, you should be able to run Python scripts and programs from the command line by typing python followed by the name of the script.