

29 January Assignment

Q1. Who developed python programming language

Python was developed by Guido van Rossum in the late 1980s and early 1990s. It was first released in 1991 and has since become one of the most popular programming languages in the world. Van Rossum named the language after the Monty Python comedy troupe and designed it to be a simple, easy-to-learn and highly expressive language.

Q2. which type of programming does python support

Python is a multi-paradigm programming language, meaning it supports multiple programming styles or paradigms. The main programming paradigms that Python supports are:

1. Object-Oriented Programming (OOP)
2. Functional Programming
3. Procedural Programming

Q3. 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.

vehicleName and vehiclename are two different identifiers

Q4. what is the correct extension of the python file

The correct extension for a Python file is .py. This extension indicates to the operating system and to other software programs that the file is a Python source code file.

The .py extension is used for both Python scripts and Python modules, and is recognized by the Python interpreter, which can execute the code in the file.

Q5. is python code compiled or interpreted

Python code is interpreted, not compiled. This means that the code is executed line by line, rather than being transformed into machine code and then executed, as is the case with compiled languages such as C and C++.

The Python interpreter reads the source code and executes it directly, without the need for an intermediate compiled file. This makes it easier to write and debug code

Q6. Name a few blocks of code used to define in python language

In Python, several blocks of code can be defined using the following constructs:

1. Functions
2. Classes
3. If-else statements
4. For loops
5. While loops

There are many other constructs, such as try-except blocks, with statements, and generator expressions, that can be used to define blocks of code in Python.

Q7. State a character used to give single-line comments in python

symbol is used to give single-line comments. Everything that follows the # symbol on the same line is ignored by the Python interpreter and is not executed as part of the program.

Q8. Mention function which can help us to find the version of python that we are currently working

sys module provides a way to check the version of Python that you are currently using. The sys module has a version attribute that returns a string representing the version of Python that you are using.

```
Import sys
```

```
Print(sys.version)
```

Q9. Python supports the creation of anonymous functions at runtime, using a constructor called

In Python, anonymous functions can be created at runtime using the lambda constructor. The lambda keyword is used to create a small anonymous function (also called a lambda function).

Lambda functions are used when you need to write a simple function for a short period of time and don't want to give it a name. They are especially useful when you want to pass a small function as an argument to another function.

Q10. What does pip stand for in python

"pip" stands for "Pip Installs Packages".

Pip is a package management system used to install and manage packages and modules written in Python. Pip makes it easier to manage and distribute Python packages, and it helps you keep track of the packages and their versions that your project depends on. You can use pip to install packages from the Python Package Index (PyPI), as well as from other sources such as local directories or version control systems like Git.

Q11. Mention a few built-in functions in python

Python has a large number of built-in functions that provide a wide range of functionality. Some of the most commonly used built-in functions are:

1. `print()`
2. `len()`
3. `type()`
4. `max()`
5. `min()`
6. `sum()`
7. `sorted()` etc.,

Q12. What is the maximum possible length of an identifier in python

There is no maximum length specified for an identifier (variable name, function name, etc.) in Python, but there is a practical limit imposed by the underlying operating system.

In practice, the maximum length of an identifier in Python is determined by the underlying file system. For most modern file systems, the maximum length of a file name is 255 characters. So, in theory, an identifier in Python can be up to 255 characters long.

However, it is recommended to keep the length of an identifier to a reasonable length for readability and maintainability. Generally, an identifier with a length of 1 to 32 characters is considered to be a good length.

Q13. What are the benefits of using python

Python has a number of benefits that make it a popular choice for software development, scientific computing, data analysis, artificial intelligence, and many other applications. Some of the key benefits of using Python are:

1. Easy to learn
2. Versatile
3. Large Community
4. Rich Library
5. Dynamic typing
6. Interoperability
7. Great for prototyping etc.,

Q14. How is memory managed in python

In Python, memory management is done automatically by the Python memory manager and the garbage collector. The memory manager is responsible for allocating memory to Python objects and the garbage collector reclaims memory that is no longer being used by the program.

The memory manager uses a strategy called "reference counting" to keep track of the number of references to an object in memory. When the reference count of an object drops

to zero, the memory manager knows that the object is no longer being used and it can be safely deallocated.

The garbage collector, on the other hand, is responsible for finding objects that are no longer reachable from any part of the program and deallocating their memory. This is especially useful for finding and freeing circular references, where two objects reference each other but are no longer being used by the program.

In general, Python's memory management system is efficient and transparent, so you don't need to worry about manual memory management when writing your programs. The memory manager and garbage collector work together to make sure that memory is used efficiently and that resources are freed when they are no longer needed.

Q15. How to install python on windows and set path variable

Here's how to install Python on Windows and set the path variable:

1. Download Python from official website (<https://www.python.org/downloads/>)
2. Run the python installer and follow the installation instructions. Now, select the option to add Python to the PATH variable during installation.
3. Open the command prompt and type "python" to verify that Python has been installed and added to the PATH variable
4. Set the PATH variable: To set the PATH variable, follow these steps: a. Right-click on the Start button and select System. b. Click on Advanced system settings. c. Click on Environment Variables. d. Under System Variables, scroll down and find the PATH variable. e. Click on Edit and add the path to the Python installation to the end of the PATH variable.

Q16. Is indentation required in python

Yes, indentation is required in Python. Indentation is used to define the block of code and is used to group statements together. In Python, the amount of indentation is significant and is used to define the structure of the code. For example, a block of code within an if statement, for loop, or function definition must be indented to indicate that it is part of that block of code.