**What is new in Python8**

**New Features**

**1.Walrus operator**

Ans: It is an assignment operator ".=" that is used to assign values to a variable as a larger part of the expression

**2.Positional-only-parameters:**

Ans: A/B, There is a new function parameter syntax "/",it is used to indicate that some parameters can be used positionally and cannot be used as a keyword.

**3. Parallel Filesystem cache:**

Ans: There is a new PYTHONCACHEPREFIX setting in python 3.8, it configures the implicit bytecode cache to use a separate parallel filesystem tree.

**4.Debug Build:**

Ans: With python3.8 , the same ABI is used whether it is built in debug mode or in release mode. when python used UNIX in debug mode, it is now possible to load C extensions that are built in release mode and the extensions build using the stable ABI.

**5.f-Strings Support**

Ans: Python 3.8 has added 1= specifier for f-strings.

**6.Run-Time Audit Hook**

Ans: **Audit Hook:** An audit hook in an application is an exit point that allows the auditor to add the modules subsequently.

**Verified Open Hook:** The verified open hook allows python embedders to integrate with operating system support when launching script or importing python code.

**7. Initialization configuration:**

Ans: Python 3.8 adds new C API to configure the initialization for finer control and better error reporting the following new structures are added.

a.PyConfig

b.PyPreConfig

c.PyStatus

d.PyWideStringList

**8.Vectorcall:**

Ans: It is fast calling protocol for CPython, it is added to the Python/C . it is basically meant to formalize the existing optimizations that were already made for various classed.

**9.Pickle Protocol 5:**

Ans: a. It covers the extra metadata needed for out-of banc=d data buffers

b. pickle 5 has a new pick Buffer type for \_\_redce\_ex\_\_ implementations to return out-of-bad data buffers. It has a new buffer\_callback parameter when picking to handle out-of-band data buffers\

c. It also has a new buffers parameter when unpicking to provide out-of-band data buffers.

**New Modules:**

**1.importlib.metadata**

Ans: There has been an addition of a new module in python 3.8, the new importlib.metadata module provides provisional support for reading metadata from third party packages.

**Other language changes**

1. Syntax warnings

2. Reversible Dictionaries

EX: A:10,B:20 Reversed() B:20,A:10

3. Multiprocessing shared memory

4. Typing module improvements

5. Date and Date wise calendar