1. Explain in brief, difference between Django, Pyramid and Flask

Ans:

Flask is a "microframework" primarily aimed at small applications with simpler requirements. Pyramid and Django are both aimed at larger applications, but take different approaches to extensibility and flexibility. Pyramid targets flexibility and lets the developer use the right tools for their project. This means the developer can choose the database, URL structure, templating style, and more. Django aims to include all the batteries a web application will need so developers need only open the box and start working, pulling in Django's many modules as they go.

Django includes an [ORM](http://en.wikipedia.org/wiki/Object-relational_mapping) out of the box, while Pyramid and Flask leave it to the developer to choose how (or if) they want their data stored. The most popular ORM for non-Django web applications is [SQLAlchemy](http://www.sqlalchemy.org/) by far, but there are plenty of other options from [DynamoDB](http://aws.amazon.com/dynamodb/) and [MongoDB](http://www.mongodb.org/) to simple local persistence like [LevelDB](https://github.com/google/leveldb) or plain [SQLite](http://www.sqlite.org/). Pyramid is designed to use any persistence layer, even yet-to-be-invented ones.

1. If a list is nums=[0,1,2,3,4], what is nums[-1]?

Ans: 4

1. Explain the output of the following piece of code-

>>> tuple=(123,'John')

>>> tuple\*=2

>>> tuple

Ans: (123,’John’,123,’John’)

As the expression is ,

tuple = tuple\*2

It will repeat the iterative object twice

1. Differentiate between the append() and extend() methods of a list with an example.

Ans: list1 = [10,20,30,40]

list2 = [30,40,50]

list1.append(list2)

list1🡺 [10,20,30,40,[30,40,50]]

list1.extend(list2)

list1🡺 [10,20,30,40,30,40,50]

1. How do you remove the leading whitespace in a string? For example, leading whitespace in a string is the whitespace in a string before the first non-whitespace character. Eg. ' Maersk'

Ans: str1 = ‘ Maersk’

str2 = str1.lstrip()

1. What is the enumerate () function in Python? Explain with an example.

Ans:

l1 = [10,20,30,40]

l2 = list(enumerate(l1))

O/P:

[(0,10),(1,20),(2,30),(3,40)]

1. Explain atleast three advantages of NumPy Array over the list in python.

Ans:

* The NumPy arrays takes significantly less amount of memory as compared to python lists. It also provides a mechanism of specifying the data types of the contents, which allows further optimization of the code.
* Computationally fast as compared to lists

1. List out all the possible differences between method and constructor in Python.

Ans:

|  |  |
| --- | --- |
| Constructor | Method |
| A Constructor doesn’t have a return type. | A Method may or may not have a return type. |
| Constructor is used to initialize an object. | Method is used to exhibits functionality of an object. |
| Constructors are invoked implicitly. | Methods are invoked explicitly. |

1. Define generator and iterator with an example in Python. What is Monkey Patching?

Ans:

Iterator:

iterable\_value = 'Maersk'

iterable\_obj = iter(iterable\_value)

while True:

   try:

        item = next(iterable\_obj)

       print(item)

    except StopIteration:

       break

O/P:

‘M’

‘a’

‘e’

‘r’

‘s’

‘k’

Generator:

def squares(n):

i=1

while(i<=n):

yield i\*\*2

i+=1

sq = squares(5)

print( next(sq))

O/P:

1

4

9

16

25

Monkey patching:

The term monkey patch refers to dynamic (or run-time) modifications of a class or module. In Python, we can actually change the behavior of code at run-time. We use above module (monk) in below code and change behavior of func() at run-time by assigning different value.

1. What will the output of the following code snippet:

>>> def squares(n):

i=1

while(i<=n):

yield i\*\*2

i+=1

>>> for i in squares(7):

print(i)

Ans:

1

4

9

16

25

36

49