Python interview questions:

**What is python?** Python is an interpreted, high-level programming language, pure object-oriented and powerful server-side scripting language for the Web.

**What are uses of lambda?** It used to create small anonymous functions at run time. mostly used as inline function. Like e.g.  
def fun1(x):  
return x\*\*2  
print fun1(2)  
it gives you answer 4 the same thing can be done using  
sq=lambda x: x\*\*2  
print sq(2)

**When do you use list vs. tuple vs. dictionary vs. set?** List and Tuple are both ordered containers. If you want an ordered container of constant elements use tuple as tuples are immutable objects.

Dictionary is key, value pair container and hence is not ordered. Use it when you need fast access to elements, not in ordered fashion. Lists are indexed and index of the list cannot be “string” e.g. list ['myelement'] is not a valid statement in python.

**Why cannot lambda forms in Python contain statements?** A lambda statement is used to create new function objects and then return them at runtime that is why lambda forms in Python did not contain statement.

**Does Python support strongly for regular expressions? What are the other languages that support strongly for regular expressions?** Yes, python strongly support regular expression. Other languages supporting regular expressions are: Delphi, Java, Java script, .NET, Perl, Php, Posix, python, Ruby, Tcl, Visual Basic, XML schema, VB script, Visual Basic 6.

**Does python support switch or case statement in Python? If not what is the reason for the same?**No. You can use multiple if-else, as there is no need for this.

**What are the uses of List Comprehensions feature of Python?** List comprehensions help to create and manage lists in a simpler and clearer way than using map(), filter() and lambda. Each list comprehension consists of an expression followed by a clause, then zero or more for or if clauses.

**What is used to create Unicode string in Python?** Add u before the string  
>>> u 'test'

**What is the optional statement used in a try except statement in Python?** There are two optional clauses used in try except statements:  
1. Else clause: It is useful for code that must be executed when the try block does not create any exception  
2. Finally clause: It is useful for code that must be executed irrespective of whether an exception is generated or not.

**What is PEP8?** This is a coding convention, a set of recommendation, on how best to write Python code and improve its readability.

**What are Dict and List Comprehensions?** These are syntax constructions that help to simplify the creation of a dictionary or list based on iterable that already exists.

**What are iterators?**Iterators are used for iterating a group of elements, containers like list.

**what is slicing?**Slicing is a mechanism that helps you in selecting a range of items from sequence types such as tuple, string, list, etc.

**Docstring** is another name for a Python documentation string. It is way to document Python modules, classes and functions.

**What is pass in Python?** Pass simply stands for, no-operation Python statement. It is a place holder in compound statement, where a blank should be left, with nothing written there.

**What is the difference between Xrange and range?** While Xrange returns xrange objects, range on the other hand, returns the list and makes use of the same memory irrespective of the range size.

**What is the use of the split function in Python?** The split function in Python helps in breaking a string into shorter strings by using the defined separator. It provides a list of the words contained in the string.

**What is pickling and unpickling?** Pickle module accepts any Python object and converts it into a string representation and dumps it into a file by using dump function, this process is called pickling. While the process of retrieving original Python objects from the stored string representation is called unpickling.

**What are the built-in type does python provides?** There are mutable and Immutable types of Pythons built in types **Mutable built-in types:** List Sets Dictionaries. **Immutable built-in types:** Strings Tuples Numbers

**What is namespace in Python?** In Python, every name introduced has a place where it lives and can be hooked for. This is known as namespace. It is like a box where a variable name is mapped to the object placed. Whenever the variable is searched out, this box will be searched, to get corresponding object.

**What are generators in Python?** The way of implementing iterators are known as generators. It is a normal function except that it yields expression in the function.

**How can you copy an object in Python?** To copy an object in Python, you can try copy.copy () or copy.deepcopy() for the general case. You cannot copy all objects but most of them.

**Python sequences can be index in positive and negative numbers**. For positive index, 0 is the first index, 1 is the second index and so forth. For negative index, (-1) is the last index and (-2) is the second last index and so forth.

**How you can convert a number to a string?** In order to convert a number into a string, use the inbuilt function str(). If you want a octal or hexadecimal representation, use the inbuilt function oct() or hex().

**What is module and package in Python?** In Python, module is the way to structure program. Each Python program file is a module, which imports other modules like objects and attributes. The folder of Python program is a package of modules. A package can have modules or subfolders.

**Mention what are the rules for local and global variables in Python?** Local variables: If a variable is assigned a new value anywhere within the function's body, it's assumed to be local. Global variables: Those variables that are only referenced inside a function are implicitly global.

**Mention the use of // operator in Python?** It is a Floor Divisionoperator , which is used for dividing two operands with the result as quotient showing only digits before the decimal point. For instance, 10//5 = 2 and 10.0//5.0 = 2.0.

**Mention five benefits of using Python?** Python comprises of a huge standard library for most Internet platforms like Email, HTML, etc. Python does not require explicit memory management as the interpreter itself allocates the memory to new variables and free them automatically Provide easy readability due to use of square brackets Easy-to-learn for beginners Having the built-in data types saves programming time and effort from declaring variables

**Mention the use of the split function in Python?** The use of the split function in Python is that it breaks a string into shorter strings using the defined separator. It gives a list of all words present in the string.

Quicksort:

def quickSort(alist):

quickSortHelper(alist,0,len(alist)-1)

def quickSortHelper(alist,first,last):

if first<last:

splitpoint = partition(alist,first,last)

quickSortHelper(alist,first,splitpoint-1)

quickSortHelper(alist,splitpoint+1,last)

def partition(alist,first,last):

pivotvalue = alist[first]

leftmark = first+1

rightmark = last

done = False

while not done:

while leftmark <= rightmark and alist[leftmark] <= pivotvalue:

leftmark = leftmark + 1

while alist[rightmark] >= pivotvalue and rightmark >= leftmark:

rightmark = rightmark -1

if rightmark < leftmark:

done = True

else:

temp = alist[leftmark]

alist[leftmark] = alist[rightmark]

alist[rightmark] = temp

temp = alist[first]

alist[first] = alist[rightmark]

alist[rightmark] = temp

return rightmark

alist = [54,26,93,17,77,31,44,55,20]

quickSort(alist)

print(alist)