Python 3.x

1. Basic understanding of Python
2. Python and Other programming languages
3. Difference between python2.x and 3.x
4. Python Environment
   1. Windows
   2. Linux
   3. Mac os
5. Python first program
6. Python Internals
7. Compilers v/s interpreters
8. Different interpreters and IDE’s
   1. Interpreters
      1. Python
      2. I python
      3. I python Notebook ( Jupyter )
      4. Bpython
      5. Bpython Notebook
   2. IDE’s
      1. Spyder
      2. Pycharm
      3. Vscode
      4. Notepad++
      5. Sublime text
9. Data types and variables
   1. Object reference
10. Python Keywords
11. Operators
    1. Relational
    2. Comparison
12. Statements of python
13. Working with Numbers
14. Python Escape sequence characters
    1. 16 bit Unicode
    2. 32 bit Unicode
    3. String literals
15. Working with strings
    1. Indexing
    2. Slicing
16. Type Casting
    1. % with positional
    2. {} with index
17. Type Conversion
18. Conditional Statements
    1. If …
    2. If … else..
    3. If …. Else… if.. else …
    4. If … elif…else
    5. Nested Functions
19. Control Statements
    1. Pass
    2. Continue
    3. Break
20. Loops
    1. For ( Finite loop )
    2. While ( Infinite loop )
21. Python Sequences
    1. List
       1. List creation
       2. Indexing
       3. Slicing
       4. list methods
    2. Tuple
       1. Tuple creation
       2. Tuple to list
       3. List to tuple
       4. Indexing
       5. Slicing
       6. Packing and unpacking
       7. Tuple methods
    3. Dictionary
       1. Dictionary creation
       2. Dict with list values
       3. Dict with tuple values
       4. Dict with dict values
       5. Dict with comprehensions
       6. Dictionary methods
    4. Set
       1. Sets creation
       2. Union , union all
       3. Intersection
       4. Minus
       5. Set methods
22. Copy
    1. Soft copy
    2. Shallow copy
    3. Deep copy
    4. Copy of elements
    5. Copy of objects
    6. Copy of sub-objects
23. Working with Functions
    1. Over view of Function
    2. Function creation
    3. Return v/s print
    4. parameters
    5. Arguments
    6. Default arguments
    7. Positional arguments
    8. Keyword arguments
    9. Variables
    10. Local variables
    11. Locals()
    12. Global variables
    13. Globals()
    14. Calling local variables globally
    15. Function object
    16. \* , \*\* , \*args , \*\*kwargs
    17. Nested Functions
24. Working with Python Built-in Functions
    1. Len, max, range, min, sum
    2. divmode
25. Working with Recursions
26. Working with Exceptions
    1. Try
    2. Except
    3. Else
    4. Finally
    5. Built-in exceptions
    6. User defined exception
       1. exception creation
       2. Class inheritance from Base class
27. Working with Regular Expressions
    1. Match
    2. Search
    3. Compile
    4. Split
    5. Group
    6. Full match
    7. Sub
    8. Find all
    9. Finditer
    10. escape
    11. Special characters
28. Working with Modules
    1. Creating modules
    2. Importing module
    3. Access module functions
29. Working with Files
    1. Creating files
    2. Data migration
    3. Database to files
    4. Read, read line , read lines
    5. Write, write lines
    6. Append
    7. Seek
    8. Tell
    9. Flush
    10. Writable, readable, seeable
30. Working with CSV Files
    1. Import csv
    2. Csvreader
    3. Csvwriter
    4. csv
31. Working with Excel Files
    1. Import xlrd
    2. Import openpyxl
32. Working with Databases
    1. Oracle
    2. PostgreSQL
    3. MySQL
    4. SQLite
33. GUI Programming
    1. ttk
    2. mainloop()
    3. Window
    4. Frame
    5. Widgets
    6. Combo box
    7. canvas
    8. check button
    9. Entry
    10. Label
    11. List box
    12. Menu
    13. Menu Button
    14. Radio Button
    15. Message
    16. Message box
    17. Scrollbar
    18. Text
    19. Spin box
    20. Label Frame
    21. Standard attributes
    22. Geometry management
        1. Grid
        2. Place
        3. pack
34. User Defined Packages
    1. \_\_init\_\_.py
    2. Sub-packages
    3. Modules
    4. Importing UD Packages
35. class
    1. Class attributes
    2. Methods
    3. Special methods
    4. Method object for a class
    5. Class method
    6. Meta class
36. oops
    1. Inheritance
       1. Single
       2. Multiline
       3. Multiple
       4. Hierarchical
       5. Hybrid
    2. Polymorphism
       1. Method Overloading
          1. pythonlangutil
          2. @overload
          3. @signature
       2. Method Overriding
          1. Super()
          2. Constructor overriding
       3. Operator overloading
    3. Encapsulation
       1. Public attributes
       2. Private attributes
       3. Public methods
       4. Special methods
       5. Private methods
    4. Data Abstraction
       1. Abstract class
       2. Abstract methods
37. @class method
    1. Object with class method
38. @Static method
    1. Object method creation
39. Python stack
    1. Put
    2. Get
    3. Put\_nowait
    4. Get\_nowait
40. Python debugging
    1. Next
    2. Where(w)
    3. Continue (c)
    4. exit
41. Python list comprehension
    1. Comprehension to create list
    2. Comprehension to create generator
42. Python Garbage collection
    1. Force garbage collection
    2. Garbage collection implementation
43. Collections
    1. Deque
    2. Queue
       1. Fifo queue
       2. Lifo Queue
       3. Priority Queue
    3. DefaultDict
    4. ordereddict
    5. Namedtuple
    6. counter
44. Multithreading
    1. Thread creation
    2. Thread start
    3. Thread join
45. Multi-Processing
    1. Process creation
    2. Process start
    3. Process join
    4. Sub-Process
46. Different Python Functions
    1. Enumerate
    2. Lambda
    3. Queue
    4. Map
    5. Filter
    6. Reduce
    7. Iterator
    8. Yield
    9. Generator
    10. Closures
    11. Decorators
47. Different Python packages ( Overview )
    1. os
    2. math
    3. cmd
    4. random
    5. operator
    6. Sys
    7. Itertools
    8. Date time
    9. Time
    10. Calendar
48. Numpy – Numerical Python
    1. Multidimensional array
    2. Vector
    3. Matrix
    4. Tensor
    5. Array
    6. Arrange
    7. Linspace – linear space
    8. Ones
    9. Zeros
    10. Eye
    11. Diag
    12. Random
        1. Rand
        2. Randint
    13. Data type of array
        1. Int
        2. Flat
        3. Complex
    14. Bool
    15. Indixing
    16. Slicing
    17. Shares – memory
    18. Copies & views
49. Django overview
    1. Overview of web application
    2. Architecture of Django
    3. Creating Django Project
    4. Adding application to Django
    5. Mapping urls
    6. Views