1. Basic
   1. Data Structures
      1. List, List Comprehension, diff between list, tuple (immutable)
      2. Dict, Dict Comprehension
      3. Set ,
      4. Tuple
      5. String  (immutable)
   2. Concepts
      1. Iterator
      2. generator
      3. decorator
      4. with function
      5. exception handling
   3. Functions
      1. Arguments (Variable Arguments, Keyword Arguments)
   4. OOPS
      1. Class
      2. dunder Methods (Operator overloading)
      3. Super
      4. MRO (Method Resolution Order , C3 Algorthim)
      5. MetaClasses , Type classes, \_\_new\_\_
      6. Inheritance
      7. Concepts
         1. Association (has-a (week), partof (Strong))
         2. Inheritance (is-a) Relationship
         3. overloading vs overriding
         4. SOLID Principles
         5. Design Patterns (Singleton, Visitor, Observer, Proxy)
   5. Threading
      1. Producer, Consumer Problem (use queue to connect producer and consumer)
      2. GIL (Global Interpreter Lock)
      3. Threads Creation, ThreadPool, Multiprocessing Pool,
      4. thread events and signals
      5. Threads Sync
   6. Filehandling
      1. regex, readfiles thru lines and process
2. Problems
   1. Listcomprehension (even list, odd list, )
   2. String "10,203,30,40" => sum of , string reverse "SSS"[::-1]
   3. given length random numbers of characters
   4. count word in sentence  (using stop words) (dict)
   5. count vowels in sentence
   6. Common elements , differnt elements in list (set)
   7. dictonary key,value reverse
   8. regex for email, ipaddress , url
   9. list of prime number
   10. max, min, fizzbuzz , sum , implement range function
   11. collection deque,
   12. how to use list as stack and queue
   13. parenthesis balance check
3. [https://sahandsaba.com/thirty-python-language-features-and-tricks-you-may-not-know.html](https://urldefense.proofpoint.com/v2/url?u=https-3A__sahandsaba.com_thirty-2Dpython-2Dlanguage-2Dfeatures-2Dand-2Dtricks-2Dyou-2Dmay-2Dnot-2Dknow.html&d=DwMFAg&c=gYbc-GKV5BQa9zrq1GFCVg&r=m0_pQDk0UBhvC8nYn93eU9_yVyGVaYqs0D0xYDlwCSU&m=NvqqWxqHnJzIWodscowcu4Ki8_hVBvhxeKlB4Lrz1yc&s=pwdg2mCV9vEEbozotDRLjrnvmPzbRzcXUqb2lHfhPCg&e=)

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| [30 Python Language Features and Tricks You May Not Know About](https://urldefense.proofpoint.com/v2/url?u=https-3A__sahandsaba.com_thirty-2Dpython-2Dlanguage-2Dfeatures-2Dand-2Dtricks-2Dyou-2Dmay-2Dnot-2Dknow.html&d=DwMFAg&c=gYbc-GKV5BQa9zrq1GFCVg&r=m0_pQDk0UBhvC8nYn93eU9_yVyGVaYqs0D0xYDlwCSU&m=NvqqWxqHnJzIWodscowcu4Ki8_hVBvhxeKlB4Lrz1yc&s=pwdg2mCV9vEEbozotDRLjrnvmPzbRzcXUqb2lHfhPCg&e=)  sahandsaba.com  A list of Python tips and tricks. See how many of them you already know. Coding, mathematics, and problem solving by Sahand Saba. |