**1.Familiarizing Text Editor, IDE, Code Analysis Tools etc // Use any IDE**

**A code editor is a tool that is used to write and edit code. They are usually lightweight and can be great for learning. However, once your program gets larger, you need to test and debug your code, that's where IDEs come in.**

**An IDE (Integrated Development Environment) understand your code much better than a text editor. It usually provides features such as build automation, code linting, testing and debugging. This can significantly speed up your work. The downside is that IDEs can be complicated to use.**

**PyCharm**

**PyCharm is an IDE for professional developers. It is created by JetBrains, a company known for creating great software development tools.**

**There are two versions of PyCharm:**

* **Community - free open-source version, lightweight, good for Python and scientific development**
* **Professional - paid version, full-featured IDE with support for Web development as well**

**PyCharm provides all major features that a good IDE should provide: code completion, code inspections, error-highlighting and fixes, debugging, version control system and code refactoring. All these features come out of the box.**

**Personally speaking, PyCharm is my favorite IDE for Python development.**

**The only major complaint I have heard about PyCharm is that it's resource-intensive. If you have a computer with a small amount of RAM (usually less than 4 GB), your computer may lag.**

**2. Display future leap years from current year to a final year entered by user**

**n=int(input("Enter the Final Year:"))**

**n1=1700**

**for i in range(n1,n+1):**

**if(i%400==0):**

**print(i,end=" ")**

**else:**

**if( i%100!=0 and i%4==0):**

**print(i,end=" ")**

**output:**

**Enter the Final Year:2080**

**1704 1708 1712 1716 1720 1724 1728 1732 1736 1740 1744 1748 1752 1756 1760 1764 1768 1772 1776 1780 1784 1788 1792 1796 1804 1808 1812 1816 1820 1824 1828 1832 1836 1840 1844 1848 1852 1856 1860 1864 1868 1872 1876 1880 1884 1888 1892 1896 1904 1908 1912 1916 1920 1924 1928 1932 1936 1940 1944 1948 1952 1956 1960 1964 1968 1972 1976 1980 1984 1988 1992 1996 2000 2004 2008 2012 2016 2020 2024 2028 2032 2036 2040 2044 2048 2052 2056 2060 2064 2068 2072 2076 2080**

**3.List comprehensions:**

* **Generate positive list of numbers from a given list of integers**
* **Square of N number**
* **Form a list of vowels selected from a given word**
* **List ordinal value of each element of a word (Hint: use ord() to get ordinal values)**

**print("3:a)")**

**list1 =[-10,20,35,-67,70]**

**re=[num for num in list1 if num>=0]**

**print(re)**

**print("3:b)")**

**n=int(input("enter limit:"))**

**squarelist= [ i\*\*2 for i in range(1,n+1)]**

**print("Square of N numbers : ", squarelist)**

**print("3:c)")**

**word =str(input("Enter the word :"))**

**print("The original string is : "+word)**

**print("The vowel are : ",end="")**

**for i in word:**

**if i in 'aeiouAEIOU':**

**print([i],end=" ")**

**print("\n3:d)")**

**w=input("Enter a word:")**

**print("Ordinal values corresponding to each element is:")**

**for i in w:**

**print(i,end=":")**

**print(ord(i),end=" ")**

**output:**

**3:a)**

**[20, 35, 70]**

**3:b)**

**enter limit:4**

**Square of N numbers : [1, 4, 9, 16]**

**3:c)**

**Enter the word :ananthu**

**The original string is : ananthu**

**The vowel are : ['a'] ['a'] ['u']**

**3:d)**

**Enter a word:ananthu**

**Ordinal values corresponding to each element is:**

**a:97 n:110 a:97 n:110 t:116 h:104 u:117**

**4. Store a list of first names. Count the occurrences of ‘a’ within the list**

**str1 = input("Enter a string : ")**

**wordlist = str1.split()**

**count=[]**

**for w in wordlist:**

**count.append(wordlist.count(w))**

**print("count of the occurrence:" + str(list(zip(wordlist, count))))**

**output:**

**Enter a string : my name is ananthu**

**count of the occurrence:[('my', 1), ('name', 1), ('is', 1), ('ananthu', 1)]**

**5. Prompt the user for a list of integers. For all values greater than 100, store ‘over’ instead**

**n=[]**

**s=int(input("Enter a limit of numbers:"))**

**print("Enter values:")**

**for i in range(0,s):**

**n.append(int(input()))**

**print("\nThe list after assinging:\n")**

**for i in range(0,len(n)):**

**if n[i]>=100:**

**print("over")**

**else:**

**print(n[i])**

**OUTPUT:**

**Enter a limit of numbers:4**

**Enter values:**

**12**

**35**

**186**

**365**

**The list after assinging:**

**12**

**35**

**over**

**over**

**6. Store a list of first names. Count the occurrences of ‘a’ within the list**

**list = ["a", "b", "a"]**

**c = list.count("a")**

**print("Count of occurrences of a :",c)**

**Output:**

**Count of occurrences of a : 2**

**7.Enter 2 lists of integers. Check (a) Whether list are of same length (b) whether list sums to same value (c) whether any value occur in both**

**lst=[4,7,3,78,46,478,43]**

**lst1=[45,65,3,68,65,7,78]**

**s=int(0)**

**c=int(0)**

**if len(lst)==len(lst1):**

**print("same length")**

**else:**

**print("Different length")**

**for i in range(0,len(lst) and len(lst1)):**

**s=s+lst[i]**

**c=c+lst1[i]**

**if(s==c):**

**print("Equal sum")**

**else:**

**print("Not same sum")**

**print("Elements in Same:")**

**l=[]**

**for i in range(0,len(lst)):**

**for j in range(0,len(lst1)):**

**if lst[i]==lst1[j]:**

**l.append(lst[i] and lst1[j])**

**else:**

**continue**

**print(l)**

**output:**

**same length**

**Not same sum**

**Elements in Same:**

**[7, 3, 78]**

**8.Get a string from an input string where all occurrences of first character replaced with ‘$’, except first character. [eg: onion -> oni$n] ?**

**str=input("Enter the String:")**

**char=str[0]**

**str=str.replace(char,'$')**

**print(char+str[1:])**

**output:**

**Enter the String:ananthu**

**an$nthu**

**9.Create a string from given string where first and last characters exchanged. [eg: python -> nythop]?**

**str=input("Enter the String:")**

**temp=str[0]**

**l=(len(str))**

**print("Output:",str[l-1]+str[1:l-1]+str[0])**

**output:**

**Enter the String:ananthu**

**Output: unantha**

**10.Accept the radius from user and find area of circle.**

**r=float(input("Enter the radius:"))**

**print("Area of circle:",3.14\*r\*r)**

**output:**

**Enter the radius:2**

**Area of circle: 12.56**

**11. Find biggest of 3 numbers entered**

**x = int(input("Enter 1st number: "))**

**y = int(input("Enter 2nd number: "))**

**z = int(input("Enter 3rd number: "))**

**if (x > y) and (x > z):**

**largest = x**

**elif (y > x) and (y > z):**

**largest = y**

**else:**

**largest = z**

**print("The largest number is",largest)**

**output:**

**Enter 1st number: 4**

**Enter 2nd number: 5**

**Enter 3rd number: 8**

**The largest number is 8**

**12.Accept a file name from user and print extension of that**

**str1=input("Enter the filename:")**

**str2=str1.split(".")**

**print("The File Extension:",str2[1])**

**output:**

**Enter the filename:hiii.java**

**The File Extension: java**

**14.Accept an integer n and compute n+nn+nnn**

**n=int(input("Enter the number:"))**

**sum1=n+n\*10**

**sum2=sum1+n\*100**

**sum3=sum1+sum2+n**

**print("Output:",sum3)**

**output:**

**Enter the number:2**

**Output: 246**

**16.Create a single string separated with space from two strings by swapping the character at position 1.**

**str1=input("Enter the 1st String:")**

**str2=input("Enter the 2nd String:")**

**s1=str1[0]**

**s2=str2[0]**

**print("Output:",s2+str1[1:],"and",s1+str2[1:])**

**output:**

**Enter the 1st String:hiii**

**Enter the 2nd String:good**

**Output: giii and hood**

**13.Create a list of colors from comma-separated color names entered by user.Display first and last colors.**

**a=[]**

**for i in range(3):**

**b=input("Enter the color:")**

**a.append(b)**

**print(a[0])**

**print(a[2])**

**output:**

**Enter the color:red**

**Enter the color:green**

**Enter the color:black**

**red**

**black**

**19.Find gcd of 2 numbers.**

**x=int(input("Enter 1st number: "))**

**y=int(input("Enter 2nd number: "))**

**i=1**

**while(i<=x and i<=y):**

**if(x%i==0 and y%i==0):**

**gcd=i**

**i=i+1**

**print("GCD :", gcd)**

**output:**

**Enter 1st number: 5**

**Enter 2nd number: 3**

**GCD : 1**

**20.From a list of integers, create a list removing even numbers.**

**num = [7,8, 120, 25, 44, 20, 27]**

**print( "Original list:",num)**

**n=[]**

**for x in num:**

**if x%2!=0:**

**n.append(int(x))**

**num=n**

**print("Final result:",n)**

**output:**

**Original list: [7, 8, 120, 25, 44, 20, 27]**

**Final result: [7, 25, 27]**

**15.Print out all colors from color-list1 not contained in color-list2.**

**color\_list\_1 = set(["White", "pink", "Red","Blue"])**

**color\_list\_2 = set(["Red", "Green","pink"])**

**print(color\_list\_1.difference(color\_list\_2))**

**output:**

**{'Blue', 'White'}**

**17.Sort dictionary in ascending and descending order.**

**import operator**

**d={1:1,2:2,3:3,4:4}**

**print("Dictionary in ascending order:")**

**da=sorted(d.items(),key=operator.itemgetter(1))**

**print(da);**

**print("Dictionary in discending order:")**

**dd=sorted(d.items(),key=operator.itemgetter(1),reverse=True)**

**print(dd);**

**output:**

**Dictionary in ascending order:**

**[(1, 1), (2, 2), (3, 3), (4, 4)]**

**Dictionary in discending order:**

**[(4, 4), (3, 3), (2, 2), (1, 1)]**

**18.Merge two dictionaries**

**d1={"name":"Ananthu","Age":21}**

**d2={"Date of Birth":"15-01-2000"}**

**d=d1.copy()**

**d.update(d2)**

**print(d)**

**output:**

**{'name': 'Ananthu', 'Age': 21, 'Date of Birth': '15-01-2000'}**