

XII STD COMPUTER SCIENCE – Python Programs 2024 - 2025

Sl.No	Program	Output
1. if	<pre>x=int(input("Enter your age :")) if x>=18: print("you are eligible for voting")</pre>	Enter your age :21 you are eligible for voting
2. if..else	<pre>a=int(input("Enter any number :")) if a%2==0: print(a, "is an even number ") else : print(a, "is an odd number ")</pre>	Enter any number :5 5 is an odd number Enter any number :6 6 is an even number
3. if..elif..else	<pre>m1=int(input("Enter mark in first subject :")) m2=int(input("Enter mark in second subject :")) avg=(m1+m2)/2 if avg>=80: print("Grade : A") elif avg>=70 and avg<80: print("Grade: B") elif avg>=60 and avg<70: print("Grade:C") elif avg>=50 and avg<60: print("Grade:D") else : print("Grade:E")</pre>	Enter mark in first subject :85 Enter mark in second subject :90 Grade : A Enter mark in first subject :45 Enter mark in second subject :50 Grade:E
4. in	<pre>ch=input("Enter a Character:") if ch in ('a','A','e','E','i','I','o','O','u','U'): print(ch, 'is a vowel')</pre>	Enter a Character:E E is a vowel
5. not	<pre>ch=input("Enter a Character:") if ch not in ('a','A','e','E','i','I','o','O','u','U'): print(ch, 'is consonant') else: print(ch, 'is vowel')</pre>	Enter a Character: b b is consonant Enter a Character: a a is vowel
6. while	<pre>i=10 while(i<=15): print(i,end='\t') i=i+1</pre>	10 11 12 13 14 15
7. while ...else	<pre>i=10 while(i<=15): print(i,end='\t') i=i+1 else: print("\n Exit Loop 16")</pre>	10 11 12 13 14 15 Exit Loop 16
8.for	<pre>for x in "Hello World": print(x,end='')</pre>	Hello World
9.for	<pre>for x in(1,2,3,4,5): print("Hello World")</pre>	Hello World Hello World Hello World Hello World Hello World
10. range	<pre>for i in range(2,10,2): print(i,end=' ')</pre>	2 4 6 8
11. for ..else	<pre>for i in range(2,10,2): print(i,end=' ') else: print("\n End of the Loop")</pre>	2 4 6 8 End of the Loop
12. for ..else	<pre>for word in 'computer': print(word,end=' ') else: print("\n End of the Loop")</pre>	c o m p u t e r End of the Loop

13. Display	<pre>i=1 while(i<=5): for j in range (1,i+1): print(j,end='\t') print(end='\n') i+=1</pre>	<pre>1 1 2 1 2 3 1 2 3 4 1 2 3 4 5</pre>
14. Display	<pre>i=1 while(i<=5): for j in range (1,i+1): print(i,end='\t') print(end='\n') i+=1</pre>	<pre>1 2 2 3 3 3 4 4 4 4 5 5 5 5 5</pre>
15.break	<pre>for word in "Jump Statement": if word == 'e': print("\n End of the Loop") break else: print(word,end='') print("\n End of the program")</pre>	<pre>Jump Stat End of the Loop End of the program</pre>
16. continue	<pre>for word in "Jump Statement": if word == 'e': continue print(word,end='') print("\n End of the program")</pre>	<pre>Jump Statmnt End of the program</pre>
17. pass	<pre>a=int(input("Enter anynumber:")) if (a==0): pass else: print("non zero value accepted ")</pre>	<pre>Enter anynumber:3 non zero value accepted Enter anynumber:0</pre>
18. vowel or not	<pre>ch=input("Enter a Character:") if ch in ('a','A','e','E','i','I','o','O','u','U'): print(ch, 'is a vowel') else: print(ch, 'is not vowel')</pre>	<pre>Enter a Character:a a is a vowel Enter a Character:b b is not vowel</pre>
19. smallest 3 numbers	<pre>a=int(input("Enter the a number: ")) b=int(input("Enter the b number: ")) c=int(input("Enter the c number: ")) if (a<b) and (a<c): print(a, 'is smallest') elif (b<a) and (b<c): print(b, 'is smallest') else: print(c, 'is smallest')</pre>	<pre>Enter the a number: 150 Enter the b number: 250 Enter the c number: 350 150 is smallest</pre>
20. Largest 3 numbers	<pre>a=int(input("Enter the a number: ")) b=int(input("Enter the b number: ")) c=int(input("Enter the c number: ")) if (a>b) and (a>c): print(a, 'is Largest') elif (b>a) and (b>c): print(b, 'is Largest') else: print(c, 'is Largest')</pre>	<pre>Enter the a number: 35 Enter the b number: 45 Enter the c number: 50 50 is Largest</pre>
21. Given number Positive or negative or zero	<pre>a=int(input("Enter the a number: ")) if a>0: print(a, 'is positive') elif a<0: print(a, 'is negative') else: print(a, 'is zero')</pre>	<pre>Enter the a number: 15 15 is positive Enter the a number: -10 -10 is negative Enter the a number: 0 0 is zero</pre>

22. Given Year - Leap year or not	<pre>yr=int(input("Enter the a number: ")) if yr%400==0 or yr%4==0 or yr%100==0: print("The year is a leap year") else: print("The year is not a leap year")</pre>	<p>Enter the a number: 2024 The year is a leap year</p> <p>Enter the a number: 2023 The year is not a leap year</p>
23. N- Fibonacci series	<pre>a=0 b=1 n=int(input("Enter a number of terms: ")) print(a,end=' ') print(b,end=' ') for i in range(3,n+1): c=a+b print(c,end=' ') a=b b=c</pre>	<p>Enter a number of terms: 8 0 1 1 2 3 5 8 13</p>
24. Sum of natural numbers	<pre>s=0 n=int(input("Enter a number of terms: ")) for i in range(1,n+1): s=s+i print("sum=",s)</pre>	<p>Enter a number of terms: 10 sum= 55</p>
25. Given number Palindrome or not	<pre>n=int(input("Enter a number : ")) temp=n rev=0 while n>0: dig=n%10 rev=rev*10+dig n=n//10 if(temp==rev): print("given number is palindrome") else: print("Given number is not palindrome")</pre>	<p>Enter a number : 1221 given number is palindrome</p> <p>Enter a number : 175 Given number is not palindrome</p>
26. Display format	<pre>str="*" i=5 while i>=0: print(str*i) i-=1</pre>	<pre>***** **** *** ** *</pre>
27. Display format	<pre>str="*" i=1 while i<=5: print(str*i) i+=1</pre>	<pre>* ** *** **** *****</pre>
28. Display format	<pre>for i in range (1,6,1): ch=65 for j in range(ch,ch+i,1): print(chr(j),end=' ') print()</pre>	<pre>A A B A B C A B C D A B C D E</pre>
29. Display format	<pre>for i in range (1,6,1): ch=69 for j in range(ch,ch-i,-1): print(chr(j),end=' ') print()</pre>	<pre>E E D E D C E D C B E D C B A</pre>
30. Display format	<pre>str="COMPUTER" index=len(str) for i in str: print(str[0:index]) index-=1</pre>	<pre>COMPUTER COMPUTE COMPUT COMPU COMP COM CO C</pre>

31. Display format	<pre>str1="COMPUTER" index=0 for i in str1: print(str1[:index+1]) index+=1</pre>	<pre>C CO COM COMP COMPU COMPUT COMPUTE COMPUTER</pre>
32. display 3 digit odd numbers	<pre>for i in range (101,1000,2): print(i, end=' ')</pre>	<pre>101 103 105 107 109 111 113 115 117 119 121 123 125 127 129 131 133 135 137 139 141 143 145 147 149 151 153 155 157 159 161 163 165 167 169 171 173 175 177 179 181 183 185 187 189 191 193 195 197 199 201 203 205 207 209 211 213 215 217 219 221 223 225 227 229 231 233 235 237 239 241 243 245 247 249 251 253 255 257 259 261 263 265 267 269 271 273 275 277 279 281 283 285 287 289 291 293 295 297 299 301 303 305 307 309 311 313 315 317 319 321 323 325 327 329 331 333 335 337 339 341 343 345 347 349 351 353 355 357 359 361 363 365 367 369 371 373 375 377 379 381 383 385 387 389 391 393 395 397 399 401 403 405 407 409 411 413 415 417 419 421 423 425 427 429 431 433 435 437 439 441 443 445 447 449 451 453 455 457 459 461 463 465 467 469 471 473 475 477 479 481 483 485 487 489 491 493 495 497 499 501 503 505 507 509 511 513 515 517 519 521 523 525 527 529 531 533 535 537 539 541 543 545 547 549 551 553 555 557 559 561 563 565 567 569 571 573 575 577 579 581 583 585 587 589 591 593 595 597 599 601 603 605 607 609 611 613 615 617 619 621 623 625 627 629 631 633 635 637 639 641 643 645 647 649 651 653 655 657 659 661 663 665 667 669 671 673 675 677 679 681 683 685 687 689 691 693 695 697 699 701 703 705 707 709 711 713 715 717 719 721 723 725 727 729 731 733 735 737 739 741 743 745 747 749 751 753 755 757 759 761 763 765 767 769 771 773 775 777 779 781 783 785 787 789 791 793 795 797 799 801 803 805 807 809 811 813 815 817 819 821 823 825 827 829 831 833 835 837 839 841 843 845 847 849 851 853 855 857 859 861 863 865 867 869 871 873 875 877 879 881 883 885 887 889 891 893 895 897 899 901 903 905 907 909 911 913 915 917 919 921 923 925 927 929 931 933 935 937 939 941 943 945 947 949 951 953 955 957 959 961 963 965 967 969 971 973 975 977 979 981 983 985 987 989 991 993 995 997 999</pre>
33. n-Multiplication Table	<pre>n=int(input("Enter the number:")) for i in range(1,11): print(n,'x',i,"=","n*i)</pre>	<pre>Enter the number:5 5 X 1 = 5 5 X 2 = 10 5 X 3 = 15 5 X 4 = 20 5 X 5 = 25 5 X 6 = 30 5 X 7 = 35 5 X 8 = 40 5 X 9 = 45 5 X 10 = 50</pre>
34. Display format	<pre>i=4 while(i<=8): for j in range (1,i+1): print(j,end=' ') print(end='\n') i+=1</pre>	<pre>1 2 3 4 1 2 3 4 5 1 2 3 4 5 6 1 2 3 4 5 6 7 1 2 3 4 5 6 7 8</pre>
35. find LCM 2 numbers	<pre>def compute_lcm(x, y): if x > y: greater = x else: greater = y while(True): if((greater % x == 0) and (greater % y == 0)): lcm = greater break greater += 1 return lcm num1 = int(input("Enter the number1 :")) num2 = int(input("Enter the number2 :")) print("The L.C.M. is", compute_lcm(num1, num2))</pre>	<pre>Enter the number1 :54 Enter the number2 :24 The L.C.M. is 216</pre>
36. Recursive function N factorial	<pre>def factorial(x): if x == 1: return 1 else: return (x * factorial(x-1)) num = int(input("Enter the n number: ")) print("The factorial of", num, "is", factorial(num))</pre>	<pre>Enter the n number: 5 The factorial of 5 is 120</pre>
37. Repeating(*)	<pre>str1="Welcome" print(str1*4)</pre>	<pre>WelcomeWelcomeWelcomeWelcome</pre>
38. string eg Mar-2020	<pre>str1="Welcome to Python" print(str1) print(str1[11:17]) print(str1[11:17:2]) print(str1[:4]) print(str1[::-4])</pre>	<pre>Welcome to Python Python Pto Wotyn nytoW</pre>

39. string eg	<pre>str1="THIRUKKURAL" print(str1) print(str1[0]) print(str1[0:5]) print(str1[:5]) print(str1[6:]) print(str1[6:10:2]) print(str1[:4]) print(str1[:-4]) print(str1[-4]) print(str1[-4:])</pre>	<p>THIRUKKURAL T THIRU THIRU KURAL KR TUR LKI U URAL</p>
40. character replace	<pre>str1="How are you" print(str1) print(str1.replace("o","e"))</pre>	<p>How are you Hew are yeu</p>
41. Given String is Palindrome or not	<pre>def reverse(str1): str2="" for i in str1: str2=i+str2 if str1==str2: print("Given String is palindrome") else: print("Given String is not palindrome") return str2 word=input("\n Enter a String:") print("The reverse of the given string is :",reverse(word))</pre>	<p>Enter a String:malayalam Given String is palindrome The reverse of the given string is : Malayalam</p> <p>Enter a String:welcome Given String is not palindrome The reverse of the given string is : emoclew</p>
42. number of vowels and consonants in Given String	<pre>str1=input("Enter the String :") str2="aAeEiIoOuU" v,c=0,0 for i in str1: if i in str2: v+=1 elif i.isalpha(): c+=1 print("The given string contains {} vowels and {} consonants".format(v,c))</pre>	<p>Enter the String :Tamilnadu School Education The given string contains 11 vowels and 13 consonants</p>
43. output	<pre>str1="ABCDEFGH" str2="ate" for i in str1: print((i+str2),end='\t')</pre>	<p>Aate Bate Cate Date Eate Fate Gate Hate</p>
44. count the occurs a character in string	<pre>count(s,c): c1=0 for i in s: if i == c: c1+=1 return c1 str1=input("Enter the String :") ch=input("Enter the character search:") cnt=count(str1,ch) print("The given character {} is occurs {} times in the given string ".format(ch,cnt))</pre>	<p>Enter the String :Software Engineering Enter the character search:e The given character e is occurs 3 times in the given string</p>
45.output	<pre>str1="welcome" str2="to school" str3=str1[:2]+str2[len(str2)-2:] print(str3)</pre>	<p>Weol</p>
46. capitalize() and Swapcase() eg	<pre>str1="nathan" str2="sAmI.nA.ThAn" print(str1.capitalize()) print(str2.swapcase())</pre>	<p>Nathan SaMi.nAtHaN</p>
47 .output	<pre>str1="welcome" str2="to school" str3=str1[:3]+str2[len(str2)-1:] print(str3)</pre>	<p>Well</p>

48. Output	<pre>str1="THOLKAPPIYAM" print(str1[4:]) print(str1[4::2]) print(str1[::3]) print(str1[:: -3])</pre>	<p>KAPPIYAM KPIA TLPY MIAO</p>
49. Output	<pre>str="COMPUTER SCIENCE" print(str*2) print(str[0:7])</pre>	<p>COMPUTER SCIENCECOMPUTER SCIENCE COMPUTE</p>
50. Output	<pre>str1="mukhasaparur" str2="CUDDALORE" print(str1.upper()) print(str1.isupper()) print(str2.isupper()) print(str2.lower()) print(str2.islower()) print(str1.islower())</pre>	<p>MUKHASAPARUR False True cuddalore False True</p>
51. Output	<pre>str1="welcome" print(str1.center(15,'*')) print(len(str1))</pre>	<p>****welcome**** 7</p>
52. List eg	<pre>marks=[10,20,30,40,50] print(marks[0]) print(marks[-1]) print(marks[2])</pre>	<p>10 50 30</p>
53. list elements	<pre>marks=[10,20,30,40,50] i=0 while i<=4: print(marks[i]) i=i+1</pre>	<p>10 20 30 40 50</p>
54. List (Reverse Index)	<pre>marks=[10,20,30,40,50] i=-1 while i>=-5: print(marks[i]) i=i-1</pre>	<p>50 40 30 20 10</p>
55. list using for	<pre>marks=[10,20,30,40,50] for i in marks: print(i)</pre>	<p>10 20 30 40 50</p>
56. Adding elements in a list eg	<pre>marks=[10,20,30,40,50] marks.append(60) print(marks) marks.extend([70,80,90]) print(marks) marks.insert(2,25) print(marks)</pre>	<p>[10, 20, 30, 40, 50, 60] [10, 20, 30, 40, 50, 60, 70, 80, 90] [10, 20, 25, 30, 40, 50, 60, 70, 80, 90]</p>
57. Deleting elements from list	<pre>marks=[10,20,30,40,50] del marks[1] print(marks) marks.remove(40) print(marks) marks.clear() print(marks)</pre>	<p>[10, 30, 40, 50] [10, 30, 50] []</p>
58. list and range() function	<pre>for x in range(1,11): print(x,end=' ')</pre>	<p>1 2 3 4 5 6 7 8 9 10</p>
59. list and range() function	<pre>for x in range(2,11,2): print(x,end=' ')</pre>	<p>2 4 6 8 10</p>

60. Output	<pre>squares=[] for x in range(1,11): s=x**2 squares.append(s) print(squares)</pre>	[1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
61. Output	<pre>squares=[x**2 for x in range(1,11)] print(squares)</pre>	[1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
62. Output	<pre>marks=[10,20,4,40,40,5] x=marks.copy() print(x) x=marks.count(40) print(x) x=marks.index(20) print(x) marks.reverse() print(marks) marks.sort() print(marks) print(max(marks)) print(min(marks)) print(sum(marks))</pre>	<p>[10, 20, 4, 40, 40, 5]</p> <p>2</p> <p>1</p> <p>[5, 40, 40, 4, 20, 10]</p> <p>[4, 5, 10, 20, 40, 40]</p> <p>40</p> <p>4</p> <p>119</p>
63. Output	<pre>list1=[2,4,6,[1,3,5]] x=len(list1) print(x)</pre>	4
64. Output	<pre>list=[2**x for x in range(5)] print(list)</pre>	[1, 2, 4, 8, 16]
65. Output	<pre>A={x*3 for x in range(1,6)} B={y**2 for y in range(1,10,2)} print(A) print(B) print(A B) print(A-B) print(A&B) print(A^B)</pre>	<p>{3, 6, 9, 12, 15}</p> <p>{1, 9, 81, 49, 25}</p> <p>{1, 3, 6, 9, 12, 15, 81, 49, 25}</p> <p>{3, 12, 6, 15}</p> <p>{9}</p> <p>{1, 3, 6, 12, 15, 81, 25, 49}</p>
66. Output	<pre>N=[] for x in range(1,11): N.append(x) Num=tuple(N) print(Num) for index, i in enumerate(N): if(i%2==1): del N[index] print(N)</pre>	<p>(1, 2, 3, 4, 5, 6, 7, 8, 9, 10)</p> <p>[2, 4, 6, 8, 10]</p>
67. Output	<pre>Mytuple=tuple([x**2 for x in range(2,11,2)]) print(Mytuple[2:3]) print(Mytuple[3:1]) print(Mytuple[:])</pre>	<p>(36,)</p> <p>()</p> <p>(4, 16, 36, 64, 100)</p>

68. Output	<pre>class sample: x,y=10,20 s=sample() print("value of x=",s.x) print("value of y=",s.y) print("value of x and y=",s.x+s.y)</pre>	<p>value of x= 10 value of y= 20 value of x and y= 30</p>
69. Output	<pre>class student: mark1,mark2,mark3=45,91,71 def process(self): sum=student.mark1+student.mark2+student.mark3 avg=sum/3 print("Total Marks=",sum) print("Average Marks=",avg) return s=student() s.process()</pre>	<p>Total Marks= 207 Average Marks= 69.0</p>
70. Output	<pre>class odd_even: even=0 def check(self,num): if num%2==0: print(num,"is Even number") else: print(num,"is Odd number") n=odd_even() x=int(input("Enter a value:")) n.check(x)</pre>	<p>Enter a value:6 6 is Even number Enter a value:5 5 is Odd number</p>
71. Output	<pre>class sample: def __init__(self,num): print("Constructor of class sample...") self.num=num print("The value is :",num) s=sample(10)</pre>	<p>Constructor of class sample... The value is : 10</p>
72. Output (init)	<pre>class sample: num=0 def __init__(self,var): sample.num+=1 self.var=var print("The object value is=",self.var) print("The count of object created=",sample.num) s1=sample(15) s2=sample(35) s3=sample(45)</pre>	<p>The object value is= 15 The count of object created= 1 The object value is= 35 The count of object created= 2 The object value is= 45 The count of object created= 3</p>
73. Output (del)	<pre>class sample: num=0 def __init__(self,var): sample.num+=1 self.var=var print("The object value is=",self.var) print("The value of class variable is=",sample.num) def __del__(self): sample.num-=1 print("Object with value %d is exit from the scope"%self.var) s1=sample(15) s2=sample(35) s3=sample(45) del s1,s2,s3</pre>	<p>The object value is= 15 The value of class variable is= 1 The object value is= 35 The value of class variable is= 2 The object value is= 45 The value of class variable is= 3 Object with value 15 is exit from the scope Object with value 35 is exit from the scope Object with value 45 is exit from the scope</p>

74.Output	<pre>class circle: pi=3.14 def __init__(self,radius): self.radius=radius def area(self): return circle.pi*(self.radius**2) def circumference(self): return 2* circle.pi*self.radius r=int(input("Enter Radius:")) c=circle(r) print("The Area=",c.area()) print("The Circumference=",c.circumference())</pre>	<p>Enter Radius:5 The Area= 78.5 The Circumference= 31.400000000000002</p>
75.Output	<pre>class sample: __num=10 def disp(self): print(self.__num) s=sample() s.disp() print(s.disp())</pre>	<p>10 10 None</p>
76.Output	<pre>class Greeting: def __init__(self,name): self.__name=name def display(self): print("Good Morning ",self.__name) obj=Greeting('Bindumadhavan') obj.display()</pre>	<p>Good Morning Bindumadhavan</p>
77.Output (mar-2020)	<pre>class Hosting: def __init__(self,name): self.__name=name def display(self): print("Welcome to",self.__name) obj=Hosting("Python Programming") obj.display()</pre>	<p>Welcome to Python Programming</p>
78.Membership operator (in eg)	<pre>str1=input("Enter a String:") str2="Chennai" if str2 in str1: print("Found") else: print("Not Found")</pre>	<p>Enter a String:Chennai GHSS , saidapet Found</p> <p>Enter a String:cuddalore district Not Found</p>

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