

CHOITHRAM SCHOOL MANIK BAGH, INDORE
PROGRAM LIST FOR CLASS XI (2022-23)

*******If-else*******

- 1) Write a program in python to convert temperature in Celsius to Fahrenheit and vice versa depending on the user's choice as 'C' or 'F'. Formula is: $(C = 5*(F-32)/9)$.
- 2) WAP to convert value in inches to feet and vice versa on users' choice.
- 3) WAP to calculate the volume of a sphere $(\frac{4}{3}*3.14 *r^3)$, volume of cylinder $(3.14*r^2 * h)$ on users choice.
- 4) WAP to calculate restaurant bill on choice of items, (1. Pizza 2. Noodles ...)
- 5) WAP to find the greatest among the three numbers entered by the user.
- 6) WAP to find the greatest among the four numbers entered by the user.
- 7) WAP to assign grades according to percentage calculated according to the total marks obtained in three subjects by a student.
- 8) WAP to check whether a person is eligible to vote on age entered by the user.
- 9) WAP to find whether a number entered by the user is even or odd.
- 10) WAP to make a calculator by character selection of operators i.e. +, ×, ÷, -.
- 11) Write a program to design a calculator where the user has a choice to enter 'A' for addition, 'S' for subtraction, 'M' for multiply, 'D' for divide, 'R' for remainder and perform the following operation on two numbers entered.
- 12) WAP for calculating the bill of the books purchased on user's choice on entering the number of copies to be purchased. The choice should be between 3 books.
- 13) WAP to calculate the area of figures according to user choice. (1. Square 2. Rectangle 3. Circle)
- 14) Write a Program to find the greatest no. among 4 numbers entered.
- 15) Enter the number and check whether the first number is according to user choice (1. Monday
a. 2. Tuesday 3. Wednesday)
- 16) Write a program in python to enter three numbers and check whether all three numbers are equal. If not equal then print the maximum of the three numbers entered.
- 17) Check whether a character is a capital, small letter or a number.

******* for loop *******

- 1) Program to print a table of number entered by the user using for loop.
- 2) WAP to print the even numbers between 1 to n (where n is user entered) using for loop.
- 3) WAP to print the odd numbers between 1 to n (where n is user entered) using for loop.
- 4) WAP to check number entered is prime or not using for loop
- 5) WAP to print the fibonacci series (0,1,1,2,3,5..) for n term using for loop.
- 6) Program to print the squares of numbers from 1 to n using for loop (where n is user entered).
- 7) Program to print the sum of squares of numbers from 1 to n using for loop (where n is user entered).
- 8) entered).
- 9) Program to print the cubes of numbers from 1 to n using for loop (where n is user entered).
- 10) Program to print the sum of cubes of numbers from 1 to n using for loop (where n is user entered).
- 11) WAP to print sum of even numbers between 1 to n (where n is user entered) using for loop.
- 12) WAP to print sum of odd numbers between 1 to n (where n is user entered) using for loop.
- 13) WAP to print numbers in reverse order from (n) to 1 using for loop.

- 14) Write a program to print odd numbers between a particular range in reverse order using a for loop.
- 15) Write a program to print even numbers between a particular range in reverse order using a for loop.
- 16) WAP to print the factorial of a user entered number using for loop.
- 17) WAP to print sum of even number and odd numbers individually between 1 to n (where n is user entered) using for loop.

******* while loop *******

- 1) Program to print a table of number entered by the user using while loop.
- 2) WAP to print the even numbers between 1 to n (where n is user entered) using while loop.
- 3) WAP to print the odd numbers between 1 to n (where n is user entered) using while loop.
- 4) WAP to check number entered is prime or not using while loop
- 5) WAP to print the fibonacci series (0,1,1,2,3,5..) for n term using while loop.
- 6) Program to print the squares of numbers from 1 to n using while loop (where n is user
- 7) entered).
- 8) Program to print the sum of squares of numbers from 1 to n using while loop (where n is user
- 9) entered).
- 10) Program to print the cubes of numbers from 1 to n using while loop (where n is user entered).
- 11) Program to print the sum of cubes of numbers from 1 to n using while loop (where n is user
- 12) entered).
- 13) WAP to print sum of even numbers between 1 to n (where n is user entered) using while loop.
- 14) WAP to print sum of odd numbers between 1 to n (where n is user entered) using while loop.
- 15) WAP to print numbers in reverse order from (n) to 1 using while loop.
- 16) Write a program to print odd numbers between a particular range in reverse order using a while loop.
- 17) Write a program to print even numbers between a particular range in reverse order using a while loop.
- 18) WAP to print the factorial of a user entered number using while loop.
- 19) WAP to print sum of even number and odd numbers individually between 1 to n (where n is user entered) using while loop.
- 20) WAP to check whether the number is palindrome or not
- 21) WAP to check whether the number is armstrong or not
- 22) WAP to add the numbers until user enters zero.

Pyramid Programs**

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<pre> * *** ***** *****</pre>	<pre> 1 2 2 3 3 3 4 4 4 4 5 5 5 5 5</pre>	<pre> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15</pre>	<pre> 1 2 3 3 4 5 4 5 6 7 5 6 7 8 9</pre>
<pre> A B B C C C D D D D E E E E E</pre>	<pre> A B C D E F G H I J K L M N O</pre>	<pre> 1 1 2 1 2 3 1 2 3 4 1 2 3 4 5</pre>	<pre> 1 2 3 4 5 1 2 3 4 1 2 3 1 2 1</pre>
<pre> * * * * * * * * * * * * * * * * * * * *</pre>	<pre> 5 4 3 2 1 4 3 2 1 3 2 1 2 1 1</pre>	<pre> * * * * * * * * * * * * * * *</pre>	<pre> * * * * * * * * * * * *</pre>

*****SERIES*****

- 1) $1-2+3-4+5\cdots n$
- 2) $1^1+2^2+3^3\cdots+N^N$
- 3) $1/1+1/2+1/3\cdots+1/N$
- 4) $(1+(1+2)+(1+2+3)+\cdots\text{till } N)$
- 5) $1!+2!+3!\cdots+n!$

*****Strings*****

- 1) Write a Python program to calculate the length of a string
- 2) Write a Python program to get a string made of the first 2 and last 2 characters of a given string. If the string length is less than 2, return the empty string instead.
- 3) Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '\$', except the first char itself.

- 4) Write a Python program to count the occurrences of each word in a given sentence.
- 5) Write a Python function to reverse a string if its length is a multiple of 4.
- 6) Write a program to find even length words in a string
- 7) Python program to capitalize the first and last character of each word in a string
- 8) Write a Python program Which accepts a string and displays the word which has the consonant 'p' in it.
- 9) Accept a string with a sentence and display the word which has the largest length.
- 10) Accept a word from the user and display it in the following pattern.

```
p
py
pyt
pyth
pytho
python
```

- 11) Write a program to accept a string and display the following:
 - a) Number of uppercase characters
 - b) Number of lowercase characters
 - c) Number of digits
 - d) Total number of alphabets
- 12) Write a program that takes a string with multiple words and then capitalizes the letter of each word and forms a new string out of it.
- 13) To print hello in h-e-l-l-o
- 14) To reverse a string
- 15) To check whether entered string is palindrome or not
- 16) To check whether entered string is symmetrical or not
- 17) To convert the letters in string from uppercase to lowercase and vice versa
- 18) To print sum of digit, and number of alphabet characters
- 19) To convert decimal numbers into binary

*****LISTS*****

- 1) Write a program to add the elements in a list with a number.(append function)
- 2) Write a program that reverses a list of integers
- 3) Write a program that input two lists and create a third, that contains all elements of the first followed by all elements of the second.
- 4) Ask the user to enter a list containing numbers between 1 and 12 then replace all of the entries in the list that are greater than 10 with 10.
- 5) Write a program to check if a number is present in the list or not.
- 6) Ask the user to enter a list of strings. Create a new list that consists of those strings with their first characters removed.
- 7) Create the following lists using a for loop:
 - a) A list consisting of the integers 0 through 49.

- b) A list consisting the square of the integer 1 through 50
 - c) The list ["a", "bb", "ccc", "dddd"] that ends with 26 copies of the letter z.
- 8) Write a program that takes any two lists l and m of the same size and adds their elements together to form a new list n whose elements are sum of the corresponding elements in l and m.
 - 9) Write a program that rotates the elements of a list to show that the element at the first index moves to the second index, the element in second index moves to the third index, etc, and the element in the last index moves to the first index.
 - 10) Write a program that reads the n to display n terms of Fibonacci series
 - 11) Write a program to read two lists num and denum which contain the numerators and denominators of the same fractions at the respective indexes. Then display the smallest fraction along with its index.
 - 12) Write a program to display the maximum and minimum values from the specified range of indexes of a list.
 - 13) Write a program to move all duplicate values in a list to the end of the list.
 - 14) Write a program to compare two equal sized lists and print the first index where they differ.
 - 15) Write a program as per following specifications:
 - a) "returns the length of the longest String in the list of a strings str_list.
Precondition: the list will contain At least one element ."
 - b) "L is a list of numbers. return a new list where each element is the corresponding element of list L summed with number num."
 - 16) Write a program to sort the list in increasing order without using the inbuilt function.
 - 17) Write a program to Concatenate two lists in the following order.
 L=["HELLO","HI"]
 M=["EVERYONE","GUYS"]
 OUTPUT:["HELLO EVERYONE","HELLO GUYS","HI EVERYONE","HIO GUYS"]
 - 18) Write a program to accept 10 numbers from user, add even numbers present in the list named "evenlist", add odd numbers presents in the list named "oddlist"
 - 19) Write a program to find the largest even number in the list, if there are no even number in the input, print "Even not found in list"

*****TUPLES*****

- 1) Write python that creates a tuple storing the first 9 terms of Fibonacci series.
- 2) Write a program that receives the index and return the corresponding value.
- 3) Write a program to input n numbers from the user. Store these numbers in a tuple. Print the maximum and minimum number from this tuple.
- 4) Write a program to create a nested tuple to store roll number, name and marks of students.
- 5) Write a program for a given tuple pair ((2,5),(4,2),(9,8),(12,8)),count the

- 6) number of pairs (a,b) such that a and b are even
- 7) Write a program that inputs two tuples and creates a third, that contains all elements of the first followed by all elements of the second.
- 8) Write a program as per following specification :
- 9) "Return the length of the shortest string in the tuple of a string str_tuple. Precondition : the tuple will contain at least one element."
- 10) Create the following tuple using a for loop :
- 11) A tuple containing the squares of the integer 1 through 50.
- 12) The tuple ("a", "bb", "ccc"....)that ends with 26 copies of the letter z.
- 13) Write a program that inputs two tuples seq_a and seq_b and print True if every element in seq_a is also an element of seq_b , else print False.
- 14) Write a program that calculates and displays the mean of a tuple with a numeric element .
- 15) Mean of means . given a nested tuple tup1 = ((1,2),(3,4.15,5.15),(7,8,12,15)). Write a program that displays the mean of individual elements of tuple tup1 and then displays the mean of these computed means.

******Searching and Sorting*******

- 1) Write a program to search an element in a (tuple or list) using binary search.
- 2) Write a program to sort elements using Bubble sort
- 3) Write a program to sort elements using Insertion sort.

*******DICTIONARIES*******

- 1) Write a program to enter names of employees and their salaries as input and store them in a dictionary.
- 2) Write a Python program to count the number of characters (character frequency) in a string
- 3) Write a program to convert a number entered by the user into its corresponding number in words.
- 4) Repeatedly ask the user to enter a team name and how many games the team has won and how many they lost. Store this information in a dictionary where the keys are the team names and the values are a list of the form [wins, losses].
 - a) using the dictionary created above, allow the user to enter a team name and print out the team's winning percentage.
 - b) using dictionary create a list whose entries are the number of wins for each team.
 - c) using the dictionary, create a list of all those teams that have winning records.
- 5) Write a program that repeatedly asks the user to enter product names and prices. Store all of these in a dictionary whose keys are the product names and whose values are the price.

When the user is done entering products and price, allow them to repeatedly enter a product name and print the corresponding price or a message if the product is not in dictionary.

- 6) Create a dictionary whose keys are month name and whose values are number of days in the corresponding month:
 - a) Ask the user to enter the month name and use the dictionary to tell how many days are in the month.
 - b) Print out all of the keys in alphabetical order.
 - c) Print out all of the month with 31 days.
 - d) Print out the (key - value) pair sorted by the number of the days in each month.
- 7) Create an inverted dictionary
- 8) Write a program that checks if two same values in a dictionary have different keys.
- 9) Given two dictionaries say d1 and d

Write a program that lists the overlapping keys of the two dictionaries if a key of d1 is also a key of d2, then list it.

- 10) A dictionary D1 has values in the form of lists of numbers. Write a program to create a new dictionary D2 having the same keys as D1 but values as the sum of the list elements.

*******RANDOM MODULE*******

- 1) Generate 3 random integers between 100 and 999 which is divisible by 5
- 2) Random Lottery Pick. Generate 100 random lottery tickets and pick two lucky tickets from it as a winner.
- 3) Write a program to find the probability of heads and tails while flipping a coin for 100 times.
- 4) Write a program to remove the random name from list
- 5) Write a program to create strong password
- 6) Write a program to get the same number again and again using random module