DELHI PUBLIC SCHOOL BANGALORE NORTH

2022-2023

COMPUTER SCIENCE

(083)

PRACTICAL RECORD FILE

NAME	
CLASS/ SEC	**XI**

INDEX
Computational Thinking and Programming – I
(PYTHON)

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<tr><td>1)</td><td>WAP to compute x^n of given two integers x and n.</td><td></td><td></td></tr>
<tr><td>2)</td><td>WAP for calculating simple interest.</td><td></td><td></td></tr>
<tr><td>3)</td><td>WAP to accept a number from the user and display whether it is an even number or Odd number.</td><td></td><td></td></tr>
<tr><td>4)</td><td>WAP to accept the day of the week from the user and print the day of the week in words</td><td></td><td></td></tr>
<tr><td>5)</td><td>WAP to check whether the given year is leap year or not.</td><td></td><td></td></tr>
<tr><td>6)</td><td>WAP to take accept two numbers and operator from the user and create a menu to provide four functions of a calculator (+,- ,* , /)</td><td></td><td></td></tr>
<tr><td>7)</td><td>WAP to accept a character from the user and check whether it is a letter, digit, space, or a special character.</td><td></td><td></td></tr>
<tr><td>8)</td><td>WAP to accept three numbers from the user and display the largest and the smallest number (using relational operators)</td><td></td><td></td></tr>
<tr><td>9)</td><td>WAP to accept percentage of a student and display corresponding grade based on the criteria specified in the table given below:
<table>
<tr><th>Percentage</th><th>Grade</th></tr>
<tr><td>>=90</td><td>A</td></tr>
<tr><td>Between 80 and 89</td><td>B</td></tr>
<tr><td>Between 70 and 79</td><td>C</td></tr>
<tr><td>Between 60 and 69</td><td>D</td></tr>
<tr><td>Between 50 and 59</td><td>E</td></tr>
<tr><td><50</td><td>F</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>10)</td><td>WAP to find the sum and product of first N natural numbers</td><td></td><td></td></tr>
<tr><td>11)</td><td>WAP to find and display the sum of first N even and odd numbers</td><td></td><td></td></tr>
<tr><td>12)</td><td>WAP to print all the factors of a given number.</td><td></td><td></td></tr>
<tr><td>13)</td><td>WAP to print all the numbers in the given range divisible by a given number Num.</td><td></td><td></td></tr>
<tr><td>14)</td><td>WAP to print the series 1,3,5,7,9….N</td><td></td><td></td></tr>
<tr><td>15)</td><td>WAP to count the number of negative numbers, positive numbers, odd and even numbers from a list of numbers entered by the user. The list terminates when the user enters a zero.</td><td></td><td></td></tr>
<tr><td>16)</td><td>WAP to accept a number from the user and check if it is a palindrome or not.</td><td></td><td></td></tr>
<tr><td>17)</td><td>WAP to print Fibonacci series up to a certain limit.</td><td></td><td></td></tr>
<tr><td>18)</td><td>WAP to display prime numbers up to a certain limit.</td><td></td><td></td></tr>
<tr><td>19)</td><td>WAP to accept a number, find and display whether it’s an Armstrong number or not.</td><td></td><td></td></tr>
<tr><td>20)</td><td>WAP to print the sum of the series
$1+x^1/1!+x^2/2!+\ldots\ldots x^n/n!$ [Exponential series]</td><td></td><td></td></tr>
<tr><td>21)</td><td>WAP to accept a string and display whether it is a palindrome.</td><td></td><td></td></tr>
<tr><td>22)</td><td>WAP to accept a string (a sentence) and returns a string having first letter of each word in capital letter.</td><td></td><td></td></tr>
</table>

23)	Write a program that accepts a string. Count and print the following present in the given string No. of Characters No. of Spaces No. of Letters (Alphabet) No. of Digits No. of Upper-Case Letters No. of Lower-Case Letters No. of Special Characters No. of Words		
24)	Write a menu driven program that implements nested loop to print any pattern based on user's choice (Any Three)		

Term 2 Programs

Sl. No.	Programs Based on Lists	Date of Completion	Tr. Sign
1)	Write a Menu Driven program to perform the following operations on a list. The program should execute as long as the user wants. Menu. a. Create a List b. Append a random 4 digit integer into the list c. Extend the list d. Insert an element into a list at a particular position e. Remove an element from the list based on the user's choice. i. The last element ii. The element at a particular position iii. The first occurrence of the element f. Print the largest element and smallest element in the list g. Find the second largest and second smallest element in the list. h. Sort the list in ascending or descending order as per user's choice (Do not change original list) i. Reverse the elements of a list (Do not change original list) j. Clear the list k. Exit		
2)	Write a program to accept values into a list and search for a particular element from a list of numbers (Linear Search)		
3)	Write a program to accept a list of numbers, find and print the sum and the average		
4)	Write a program to input two lists and create a third list that contains the elements from both the lists and sort it		

5)	Write a program to accept a list of numbers from the user (between 1-15) and replace all the entries in the list which are greater than 10 by 100		
6)	Write a program to accept a string from the user and convert it to a list		
7)	Write a program to accept two lists of same size and form another list which has the sum of the corresponding elements of both the lists Eg: list1=[2,3,4,5,6] list2=[2,2,1,1,1] list3=[4,5,5,6,7]		
8)	Write a program that rotates the elements of a list so that the elements at the first index moves to the second index, the second to third and last to first.		
9)	Write a program to accept a list of numbers and then put even elements into one list and odd elements into another.		
10)	Write a program to read a list of words. Find and print the longest word in the list with its length		
11)	Write a program that accepts N strings into a List named LST. Create a new list named NO_VOWEL which will have all strings from LST which have no vowels in it. Accept values for N from user. Display contents of Both lists with appropriate message. For Example: If N is entered as 5 and the values entered by user is stored in LST are ['DRY','LIKE','RHYTYM','WORK','GYM'] NO_VOWEL should contain ['DRY' , 'RHYTYM', 'GYM']		

Sl. No.	**Programs Based on Tuples**	**Date of Completion**	**Tr. Sign**
12)	Write a program to convert a list to tuple and replicate it 3 times		
13)	Write a program in python to remove an item from a tuple		
14)	Write a program to find the index of each element of a tuple		
15)	Write a program to accept the details (Id, Name, Age, DOB, Salary) of Five employees into a tuple Employee. Unpack the details of first employee into variables Id, Name, Age, DOB and Salary		
16)	Write a program to reverse a tuple		
17)	Write a program to accept five strings into a tuple and find the length of the shortest string		
18)	Program to implement nested tuples. Create a nested tuple with 5 records where each record stores student name and the student's marks in three subjects. For each student record, find and display the following a. Maximum marks out of three subjects b. Minimum marks out of three subjects c. Sum and average of the marks in three subjects		

Sl. No.	**Programs Based on Dictionary**	Date of Completion	Tr. Sign
19)	Write a program to accept a sentence/ paragraph from the user. Create a dictionary that stores each word and the Count of its frequency in the given sentence /paragraph as key-value pairs respectively.		
20)	Create a dictionary whose keys are the names of the month and whose values are the number of days in the month a. Print out all the keys in alphabetical order b. Print out the key–value pair sorted by the no. of days in a month c. Print out all the months with 31 days		

21)	Given the dictionary
	`Gene_code={'A':"Adenine", 'C':"Cytosine", 'G':"Guanine ", 'T':"Thymine"}`
	Write a program that implements the following
	a) Create and display a new dictionary with the opposite mapping, i.e. as follows:
	`invGeneCode={"Adenine":'A', "Cytosine":'C', "Guanine":'G', "Thymine":'T'}`
	b) Accept a Gene Code sequence from user and display the corresponding Gene code name for each character in the given sequence.
	Sample Output:
	`Enter Gene Code Sequence:`
	`AAGTC`
	`Chemical Names of the given Code sequence:`
	`Adenine`
	`Adenine`
	`Guanine`
	`Thymine`
	`Cytosine`		

22)	Given two dictionaries say D1 and D2. Write a program that lists the overlapping keys of the two dictionaries i.e., if a key of D1 is also present in D2, then list it		
23)	Write a menu driven program to perform the following actions: Menu: 1) Add new team details *Accept team name, No. matches won, and No. of matches lost. Store this information in a dictionary where team name is the key and its corresponding value is a list of the form* [wins, losses]. 2) Print winning Percentage of a given team		

	Ask the user to enter a team name, compute and print out the team's winning percentage. Print appropriate message if the given team's name does not exist in the dictionary. 3) Display list of number of matches won by all teams *Using the dictionary, create a list whose entries are the number of wins of each team. Display the list. Print appropriate message if the dictionary is empty.* 4) Display list of teams with zero losses *Using the dictionary, create a list of all those team names that have only winning record i.e. the team has zero losses. Display the list. Print appropriate message if the dictionary/list is empty.* 5) Exit Program should execute as long as the user wants.		
24)	Write a program to repeatedly ask 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 prices. ****when the user is done entering products and prices, allow them to repeatedly enter a product name and print the corresponding price or print a message product does not exist.		
25)	Write a program that creates a nested dictionary which contains the x and y coordinates of four points. Check and display in which quadrant of the graph each point lies.