LAB WORKSHEET-1

Instructions:

You have to maintain a physical lab record.

Kindly write an algorithm or draw a flowchart followed by python code and output for the following questions.

1. Write a program to get three numbers and print their sum.
2. Write python script to obtain length and breadth of a rectangle and calculate its area.
3. Write a program to input a number and print its cube.
4. Write a python script to get three numbers and swap them.
5. X, a currency conversion agent, serves his customers in exchanging currencies from Indian rupee to US Dollar. Deign a flowchart and write a Python program to automate the process of finding the equivalent amount in US Dollar.

Input Format:

Indian rupee equivalent to one US Dollar

Amount to be converted in Indian rupees

Output Format:

Dollar equivalent for Indian money

6. Students in a class are appreciated based on the following factors

Number of 'S' grade >= 3

Attendance >= 90
Participation in sports activity in a semester >= 2

Appreciation is given as follows:

(i) 'Excellent' if all three conditions are met

(ii)'Very Good' if conditions (i) and (ii) are met

(iii)'Good' if conditions (i) and (iii) are met

Given the Number of 'S' grades, Attendance and Participation in sports activity in a semester, design a flow chart and write the python code to output the appreciation for the student. Check boundary conditions and print 'Invalid input' for wrong input.

Input Format:

Number of 'S' grade

Attendance

participation in sports activity in a semester

Output Format:

Appreciation for student

Boundary Condition:

All values of input >= 0

7. A palindromic number (also known as a numeral palindrome or a numeric palindrome) is a number (such as 16461) that remains the same when its digits are reversed. Write an algorithm/pseudo code, draw a flow chart and write the python code to check whether the given number is palindrome or not. Check boundary conditions and print 'Invalid input' for wrong input.

Input Format:

Number to be checked

Output Format:

“Palindrome” or “Not palindrome”

Boundary Conditions:

Number>0

8. Design an algorithm and write the Python code to convert time in 24-hour format to 12-hour format. For example, if the input time is 16:45:12 then the output should be 4:45:12 PM. Check boundary conditions and print 'Invalid input' for wrong input.

Boundary Condition:
All input >= 0
Hours <24
Minutes < 59
Seconds < 59

9. Write a python program to display the grades according to the student marks in five different subjects. Check boundary conditions on your own intuition.

10. Write a python code to calculate the total money spent on purchase. Get the number of items of a product purchased and the cost of each product. A customer may buy any number of products from the shop. Check boundary conditions and print 'Invalid input' for wrong output.

Input:

Number of items purchased ‘n’.

Cost of ith item

quantity of ith item

Output:

Total cost of all products.

Boundary Conditions:

n>0

cost and quantity of each product > 0

11. Write a python code to find the sum of the following series. Get N from the user.

1+2+3+4+5+……+N
2+4+6+8+10+……+ N

12. A palindromic number (also known as a numeral palindrome or a numeric palindrome) is a number (such as 16461) that remains the same when its digits are reversed. Write an algorithm/pseudo code, draw a flow chart and write the python code to check whether the given number is palindrome or not. Check boundary conditions and print 'Invalid input' for wrong input.

Boundary Condition:

Number>0

13. Draw a flow chart and write a python pseudo-code, program to print the following pattern. Get input as a number of rows from the user. Display "Invalid input" if the boundary condition fails.

1 2 3 4 5

2 2 3 4 5

3 3 3 4 5

4 4 4 4 5

5 5 5 5 5

14. Develop an algorithm and write the Python code to print the following pattern. Check boundary conditions and print 'Invalid input' for wrong output.

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Boundary Condition:
n > 0

15. Write a python code to find the factorial of the given number.

16. Write a python code to check whether a given number of odd or even.

17. Write a python program to segregate student based on their CGPA as outstanding, excellent, good, average, better and poor.

18. Write a python script that accepts 5 numbers form the user. It then prints one of the two things: if any of the values entered are duplicates, print DUPLICATES otherwise, it prints ALL UNIQUE.