COLLEGE'S OF ENGINEERING & MANAGEMENT PUNNAPRA
Department of Computer Science & Engineering
CST 362 Programming in Python
S6 CSE A and B Batch

Programming questions
Module 1

Write Python program for the following questions.

Sequential Problems

1. Read a number and print it.
2. Add any 2 numbers and print the sum
3. Read any 2 numbers and find the sum, difference, product, quotient, and reminder
4. Read any three numbers and find the sum and average.
5. Find the area of a circle
6. Area and perimeter of a triangle (p=a+b+c, a=sqrt(s(s-a)s-b)(s-c))
7. Convert the seconds to hours : minute : seconds
8. Swap 2 numbers using a temporary variable
9. Swap 2 numbers without using a temporary variable.
10. Convert temperature from Celsius to Fahrenheit.(F = (9/5)c+32)
11. Calculate the simple interest

Decision Problems

1. Check whether a number is odd or even
2. Find the absolute value of a number
3. Check whether a number is completely divisible by another number
4. Check whether a number is positive, negative or zero
5. Find the largest of 2 numbers
6. Find the large digit in a two-digit number
7. Write a Python program that takes a single character as input from the user and checks if it is a vowel or a consonant. If the input is not an alphabetic character, print "Invalid input."
8. Write a Python program that checks the strength of a password entered by the user. The program should categorize the password as: "Weak" if it is less than 6 characters. "Medium" if it is between 6 and 10 characters. "Strong" if it is more than 10 characters.
9. Determine the nature of the solution of the quadratic equation
10. Find the largest of 3 numbers
11. Check whether a number is 3-digit or not

12. An electric distribution company charges its domestic consumers as follows

consumption in units	Rate of charge
0-200	Rs. 0.50 per unit
201 - 400	Rs. 100 plus rs.0.65 per unit excess of 200
401 -600	Rs.230 plus Rs.0.80 per unit excess of 400
Above 600	Rs.425 plus Rs. 1.25 per unit excess of 600

13. Write a Python program to read percentage of marks scored by a student in an examination and print the percentage of marks along with the grade obtained using the following conditions

    (a) percentage $\geq$ 90 "O(Outstanding)"

    (b) percentage $\geq$ 85 and percentage $<$ 90, "A+ (Excellent)"

    (c) percentage $\geq$ 80 and percentage $<$ 85, "A (Very Good)"

    (d) percentage $\geq$ 70 and percentage $<$ 80, "B+ (Good)"

    (e) percentage $\geq$ 60 and percentage $<$ 70, "B (Above Average)"

    (f) percentage $\geq$ 50 and percentage $<$ 60, "C (Average)"

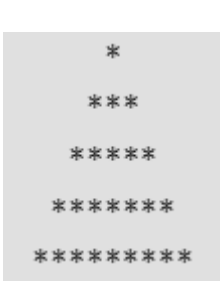
    (g) percentage $\geq$ 45 and percentage $<$ 50, "P (Pass)"

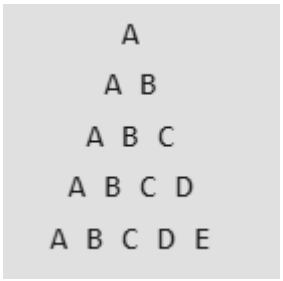
    (h) percentage $<$ 45 "F (Fail)"

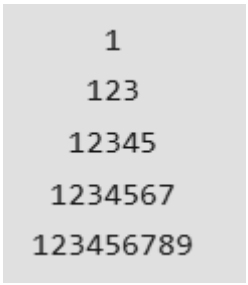
Iteration Problems

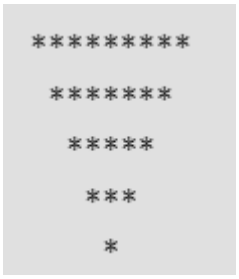
1. Find the sum of the first N natural numbers.
2. Print the first n odd numbers
3. Print the even numbers up to n
4. Write a Python program to print first N terms of an arithmetic progression
5. Find the sum of odd numbers in a set of N numbers
6. Write a Python program to print even numbers from a starting number to an ending number
7. A Python program to read a number N and print the even numbers in reverse order starting from N
8. Find the factors of a number
9. Check whether a number is perfect number or not
10. FInd the factorial of a number
11. Print the fibonacci series
12. Check whether a number is prime or not
13. Print the prime numbers between the 2 limits
14. Check whether a number is amstrong or not
15. Print the amstrong numbers between 2 limits
16. Generate the numbers between 100 and 200 which are divisible by 3 but not divisible by 4
17. Print the digits of number
18. Find the sum of digits of a number
19. Reverse a number

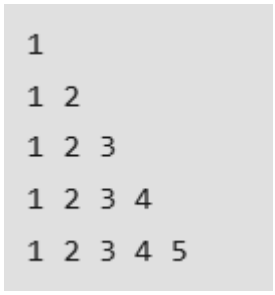
20. Check whether a number is palindrome or not
21. Find the sum of odd digits in a number
22. Find the difference between the sum of odd digits and even digits in a number
23. Print the following different patterns

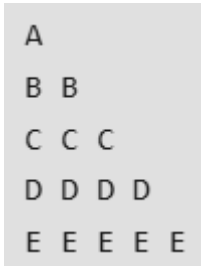


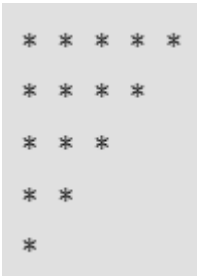


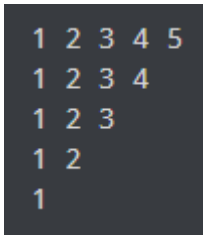


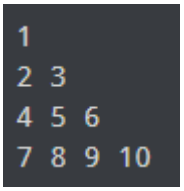


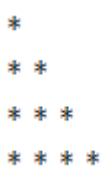












24. Find the sum of the series $1 + \frac{1}{2} + \frac{1}{3} + \cdots + \frac{1}{n}$
25. Find the sum of the series $1 + \frac{2}{2!} + \frac{3}{3!} + \cdots + \frac{n}{n!}$
26. Find the sum of the series $1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \cdots + \frac{x^n}{n!}$

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