

## Practice Lab Assignment 4

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For this Practice Lab Assignment, you will write programs in C, **making use of various operators and if-else control structures and for loops only.**

**Do not use arrays and any other concept that has not been yet taught in the class.**

#### Instructions

- There are 11 questions in this assignment.
- Any discussion with neighbor/or any other student is strictly not allowed.
- Mobile phones are not allowed. If found, disciplinary action may be taken.

**Due Date: This is only a Practice Lab so no submission is required.**

#### Grading Criteria

No Grading Criteria.

#### Programming Questions

1. Write a Program to print the sum of the following series:

$$1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \dots + \frac{1}{n}$$

Take the value of 'n' from the user.

2. Write a Program to print the sum of the following series:

$$1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \dots + \frac{1}{n^2}$$

Take the value of 'n' from the user.

3. Write a Program to print the sum of the following series:

$$\frac{1}{2} + \frac{2}{3} + \frac{3}{4} + \frac{4}{5} + \dots + \frac{n}{n+1}$$

Take the value of 'n' from the user.

4. Write a Program to print the sum of the following series:

$$1 + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \dots + \frac{1}{n!}$$

5. Write a program to check whether a number is prime or not.
6. Write a program to print the sum of squares of even numbers from 1 to 50.
7. Write a program to print the multiplication table of the number entered by the user. The table should get displayed in the following form.

$$7 * 1 = 7$$

$$7 * 2 = 14$$

.....

$$7 * 10 = 70$$

8. Write a program to calculate and print sum of odd numbers and sum of even numbers separately from 1 to 500, such that the number is divisible both by 7 and 9.
9. Write a program to display following sequence of numbers:

1, 46, 91, ....., 586, 631, 676.

10. Write a program to calculate tax, given the following conditions:
  - if income is less than 1, 50, 000 then no tax
  - if taxable income is in the range 1, 50, 001 – 300, 000 then charge 10% tax
  - if taxable income is in the range 3, 00, 001 – 500, 000 then charge 20% tax
  - if taxable income is above 5, 00, 001 then charge 30% tax
11. Write a program that accepts the current date and the date of birth of the user. Then calculate the age of the user and display it on the screen. Note that the age should be displayed in terms of Years, months and days.