

Python Fundamentals Assignment

Instructions:

- Solve all the questions.
- Provide proper comments in your code.

An **anagram** is a word or phrase formed by rearranging the letters of another word.

Examples:

- "listen" → "silent"
- "race" → "care"

Section 1: Advanced Concepts

1. Write a Python program to check if a given number is a perfect square.
2. Implement a function that checks whether a given string is an anagram of another string.
3. Write a Python program to convert a decimal number to its binary, octal, and hexadecimal representation.

Section 2: Conditional Statements & Loops

4. Write a Python script to check if a number is prime or not.
5. Write a Python program to print the first **n** Fibonacci numbers using a loop.
6. Write a Python script to find the sum of all prime numbers between 1 and 100.

Section 3: Functions,String & Lists

7. Write a function to calculate the factorial of a given number.
8. Write a function that takes a list of numbers and returns the largest element.
9. Write a program to remove duplicates from a given list.
10. Write a Python program to reverse a string without using built-in functions.
11. Write a script to find the second largest number in a list without using sorting.
12. Write a python program for pascal's triangle pattern:

```
    1
  1 1
1 2 1
1 3 3 1
1 4 6 4 1
```