Assignment 1 : Python Basic Syntax and Conditional Statements

1. Write a Python program that takes two numbers as input and calculates their sum.

2. Write a Python program that checks if a given number is even or odd and prints an appropriate message.

3. Write a Python program that takes a user's age as input and prints "You are a minor" if the age is less than 18, "You are an adult" if the age is 18 or older but less than 65, and "You are a senior" if the age is 65 or older.

4. Write a Python program that calculates the area of a rectangle. It should take the length and width as input from the user.

5. Write a Python program that checks if a given year is a leap year. A leap year is a year that is divisible by 4 but not divisible by 100, except if it is also divisible by 400.

6. Write a Python program that takes a user's score as input and assigns a letter grade based on the following grading scale:
   - A: 90-100
   - B: 80-89
   - C: 70-79
   - D: 60-69
   - F: Below 60

7. Write a Python program that asks the user for their name and age. If the user's age is less than 13, print "Sorry, you are not eligible for this service." Otherwise, print a greeting message with their name.

8. Write a Python program that takes a number as input and checks if it is positive, negative, or zero. Print an appropriate message based on the input.

9. Write a Python program that calculates the factorial of a given number. The factorial of a non-negative integer n is the product of all positive integers less than or equal to n.

10. Write a Python program that checks if a given string is a palindrome. A palindrome is a word, phrase, number, or other sequence of characters that reads the same forward and backward (ignoring spaces, punctuation, and capitalization).