Here are 10 programming assignments along with their solutions based on the topics of loops, conditional statements, and operators in Python:

Assignment 1: Sum of Even Numbers
Write a Python program that calculates and prints the sum of all even numbers from 1 to 50.

Solution:
```python
sum_even = 0

for num in range(2, 51, 2):
    sum_even += num

print("Sum of even numbers:", sum_even)
```

Assignment 2: Reverse a Sentence
Write a Python program that takes a sentence as input and prints the reversed version of the sentence.

Solution:
```python
sentence = input("Enter a sentence: ")
reversed_sentence = ""

for word in sentence.split():
    reversed_sentence = word + " " + reversed_sentence

print("Reversed Sentence:", reversed_sentence.strip())
```

Assignment 3: Factorial Calculator
Write a Python program to calculate and print the factorial of a user-inputted number.

Solution:
```python
def factorial(n):
    result = 1

    for i in range(1, n + 1):
        result *= i

    return result

number = int(input("Enter a number: "))
print(f"Factorial of {number}: {factorial(number)}")
```

```

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### Assignment 4: Check Prime Number
Write a Python program to check if a user-inputted number is prime.

**Solution:**
```python
def is_prime(num):
    if num < 2:
        return False
    for i in range(2, int(num**0.5) + 1):
        if num % i == 0:
            return False
    return True

number = int(input("Enter a number: "))

if is_prime(number):
    print(f"{number} is a prime number.")
else:
    print(f"{number} is not a prime number.")
```

Assignment 5: Multiplication Table
Write a Python program to generate and print the multiplication table for a user-inputted number.

Solution:
```python
number = int(input("Enter a number: "))

for i in range(1, 11):
    print(f"{number} x {i} = {number * i}")
```

Assignment 6: Palindrome Checker
Write a Python program that checks if a user-inputted word is a palindrome.

Solution:
```python
word = input("Enter a word: ")

if word == word[::-1]:
    print(f"{word} is a palindrome.")
```
```

```
else:
    print(f"{word} is not a palindrome.")
```

Assignment 7: BMI Calculator
Write a Python program that calculates and prints the Body Mass Index (BMI) based on user-inputted height and weight.

Solution:
```python
height = float(input("Enter your height (in meters): "))
weight = float(input("Enter your weight (in kilograms): "))

bmi = weight / (height ** 2)
print(f"Your BMI is: {bmi:.2f}")
```

Assignment 8: Pattern Generator
Write a Python program that generates and prints the following pattern:
```
*
**
***
****
*****
```

Solution:
```python
for i in range(1, 6):
    print("*" * i)
```

Assignment 9: Temperature Converter
Write a Python program that converts temperatures from Celsius to Fahrenheit for a given range of temperatures.

Solution:
```python
for celsius in range(0, 101, 10):
    fahrenheit = (celsius * 9/5) + 32
    print(f"{celsius}°C is equal to {fahrenheit:.2f}°F")
```

Assignment 10: Calculate Average
Write a Python program that calculates and prints the average of a list of user-inputted numbers.

Solution:
```python
numbers = []

n = int(input("Enter the number of elements: "))

for _ in range(n):
    num = float(input("Enter a number: "))
    numbers.append(num)

average = sum(numbers) / n
print("Average:", average)
```

These assignments cover a variety of topics and provide opportunities for students to practice and strengthen their understanding of loops, conditional statements, and operators in Python.