

- Write a program that takes a temperature value and a scale (Celsius or Fahrenheit) as input from the user. Convert the temperature to the other scale and print the result.
- Develop a program that prompts the user to enter a numerical grade. Classify the grade into categories (A, B, C, D, F) and print the corresponding classification
- Create a basic calculator program that takes two numbers and an operation (addition, subtraction, multiplication, or division) as input. Perform the calculation and display the result.
- Write a program that takes a number as input from the user and prints its multiplication table up to 10.

- Modify the code to create a new list containing only the words longer than 3 characters.

```
words = [ 'apple ', 'banana ', 'kiwi ', 'orange ', 'grape ' ]
# Modify the code here
print("Long words:", long_words)
```

- Create a program that prompts the user to enter a number and then calculates and prints its factorial using a while loop.
- Write a function called is 'leap' year that takes a year as an argument and returns True if it's a leap year and False otherwise.
- Write a function that generates the Fibonacci series up to a specified number of terms.
- Create a function that takes a list of numbers as input and returns the sum of all the elements.
- Given the following class representing a Circle, add a method calculate 'circumference' that returns the circumference of the circle.

```
class Circle:
    def __init__(self, radius):
        self.radius = radius

    def calculate_area(self):
        return 3.14 * self.radius * self.radius
```

Add the calculate_circumference method here

```
circle = Circle(5)
print('Area:', circle.calculate_area())
print('Circumference:', circle.calculate_circumference())
```

- The following code contains an error related to division by zero. Modify the code to handle this error gracefully.

```
numerator = int(input('Enter the numerator: '))
denominator = int(input('Enter the denominator: '))
result = numerator / denominator
print('The result of the division is:', result)
```

- Given the following function, modify it to take two parameters (a and b) and return the sum of their squares.

```
def square_sum():
    a = input('Enter the first number: ')
    b = input('Enter the second number: ')
    #Write the equation here
    return result
```

- Consider the following Python code. Identify and fix the errors to make it run correctly.

```
num = input('Enter a number: ')
result = num * 2
print('The result is: ' + result)
```

- Given a list of numbers, modify the code to create a new list containing the squares of the numbers.

```
original_numbers = [2, 4, 6, 8, 10]
# Modify the code here
print('Squared numbers:', squared_numbers)
```

- Given a dictionary representing a book, modify the code to add a new key-value pair for the publication year.

```
book_info = {'title': 'The Great Gatsby', 'author': 'F. Scott Fitzgerald'}
# Add the publication year to the dictionary
print('Updated Book Information:', book_info)
```

- Given the following class representing a Car, add a method 'start_engine' that prints 'Engine started.'

```
class Car:
    def __init__(self, brand, model):
        self.brand = brand
        self.model = model

    def display_info(self):
        print(f"{self.brand} {self.model}")

# Add the start_engine method here

# Example usage:
my_car = Car('Toyota', 'Camry')
my_car.display_info()
my_car.start_engine()
```

- Given the following code for a simple temperature converter, modify it to handle both Celsius to Fahrenheit and Fahrenheit to Celsius conversions based on user input.

```
choice = input('Enter 'C' for Celsius to Fahrenheit or 'F' for Fahrenheit to Celsius ')

if choice == 'C':
    celsius = float(input('Enter temperature in Celsius: '))
    fahrenheit = # Enter the equation
    print(f'The temperature in Fahrenheit is: {fahrenheit}')
elif choice == 'F':
    # Do same for fahrenheit to celsius conversion
else:
    print('Invalid choice. Please enter 'C' or 'F'.')
```

- The following code is supposed to take a string as input and print the reversed string. However, it has some mistakes. Fix the code.

```
text = input("Enter a string: ")
reversed_text = text[::-1]
print("The reversed string is:" reversed_text)
```

- Write a program that calculates ticket prices based on age. Ask them to modify the code to include a discount of 10% for students (ages 13-18) and seniors (ages 61 and above).

```
age = int(input('Enter your age: '))

if 0 <= age <= 5:
    ticket_price = 0 # Free for ages 0-5
elif 6 <= age <= 12:
    ticket_price = 5
elif 13 <= age <= 18:
    ticket_price = 10 # Modify this to include a 10% discount
elif 19 <= age <= 60:
    ticket_price = 15
else:
    ticket_price = 10 # Discount for seniors (61 and above)

print(f'The ticket price for a {age}-year-old is: ${ticket_price}')
```

- write a program that simulates an ATM withdrawal. Ask them to modify the code to include a maximum withdrawal limit of 2000 rupees per transaction.

```
account_balance = 10000 # Assuming initial account balance is 10000 rupees
withdrawal_amount = int(input('Enter the amount you want to withdraw: '))

# Modify the code to include a maximum withdrawal limit
max_withdrawal = 2000

if withdrawal_amount % 100 == 0:
    account_balance -= withdrawal_amount
```

```

        print(f'Withdrawal successful. Remaining balance: ${account_balance}')
    else:
        print('Withdrawal amount must be divisible by 100.')
```

- Write a program that determines if a given character is a vowel or a consonant. Ask them to modify the code to handle both uppercase and lowercase letters.

```

char = input("Enter a single character: ")

# Modify the code to handle both uppercase and lowercase letters
if char.lower() in 'aeiou':
    print('Vowel')
else:
    print('Consonant')
```

- Write a program that prints a pattern using nested loops to create a triangle of numbers. Ask them to modify the code to print a square pattern.

```

rows = int(input("Enter the number of rows for the pattern: "))

# Modify the code to print a different pattern
for i in range(1, rows + 1):
    for j in range(1, i + 1):
        print(j, end=" ")
    print()
```