Assignment: Practical Python Tasks for Beginners

Objective:

Apply basic Python concepts like variables, operators, and string formatting to solve creative and real-world-inspired problems.

Part 1: Temperature Comparison

Problem Statement:
Write a program that:

- Takes input for the temperatures of two cities in Celsius.
- Compares the temperatures using relational operators (`>`, `<`, `==`, `!=`).

Prints a message like:
`City A is hotter than City B.`

Part 2: Bill Splitter

Problem Statement:
Write a program that calculates how much each person needs to pay when splitting a bill:

1. Take the total bill amount as input.
2. Take the number of people as input.
3. Calculate each person's share by dividing the total amount by the number of people.

Print the result in this format:

```
Total Bill: $[amount]
Number of People: [people]
Each Person Pays: $[share]
```

Part 3: Custom Message Formatter

Problem Statement:
Write a program that takes the following inputs:

- A name
- A favorite color
- A favorite number

Use string formatting to display the result:

```
[Name] loves the color [Color] and their favorite number is
[Number].
```

Part 4: Two-Number Relationship

Problem Statement:
Write a program that:

1. Takes two numbers as input.
2. Checks and displays their relationship using these conditions:
   - Whether the first number is greater than, less than, or equal to the second number.
   - Whether both numbers are even or odd.

Print the results in this format:
```
Number 1: [num1]
Number 2: [num2]
Relationship: [Greater than/Less than/Equal]
Both numbers are [Even/Odd/Mixed].
```

Part 5: Rectangle Calculator

Problem Statement:
Write a program that calculates and displays the area and perimeter of a rectangle:

1. Take the length and width of the rectangle as inputs.
2. Calculate the area and perimeter using basic arithmetic operators.

Print the result in this format:
```
Length: [length]
Width: [width]
Area: [area]
Perimeter: [perimeter]
```

Part 6: Age Difference Calculator

Problem Statement:
Write a program that:

1. Takes the ages of two people as input.
```

2. Calculates the difference in their ages using subtraction.

Prints the result using string formatting:
`The age difference between [Person1] and [Person2] is: [Difference] years.`

## Part 7: Days to Seconds Converter

**Problem Statement:**
Write a program that:

1. Takes the number of days as input.
2. Converts the input into seconds using this formula:

   $Seconds = Days \times 24 \times 60 \times 60$

Prints the result using string formatting:
`[Days] days are equal to [Seconds] seconds.`

## Part 8: Arithmetic Checker

**Problem Statement:**
Write a program that:

1. Takes two numbers as input.
2. Prompts the user to input an arithmetic operator (+, -, *, /).

Performs the operation on the numbers and prints the result.
`[Number1] [Operator] [Number2] = [Result]`

## Submission Guidelines

1. **GitHub Repository:**
   - Create a new GitHub repository with a name like `python-basics-assignment`.
   - Add all the Python files (`.py`) to this repository. Each task should be in a separate Python file with clear naming (e.g., `temperature_comparison.py`, `bill_separator.py`).

2. **File Structure Example:**

```
python-basics-assignment/

          ├── temperature_comparison.py
          ├── bill_splitter.py
          ├── rectangle_calculator.py
```

3. **Steps to Submit:**
   - Push your completed files to your GitHub repository.
   - Make the repository **public** so it's accessible for review.
   - Copy the repository link (e.g.,
     https://github.com/yourusername/python-basics-assignment).
   - Submit the repository link for evaluation.