

In Class Activity 1

Write a python script To perform the following tasks.

- A. The program defines a function `calculate_factorial` to calculate the factorial of a given number using a `for` loop.
- B. The user is prompted to enter a number.
- C. The input is checked to ensure it is a valid integer using `isdigit()`.
- D. If the input is valid, the program calculates and displays the factorial using the defined function.
- E. If the input is not a valid integer, an error message is displayed.

```
# Function to calculate the factorial of a number
def calculate_factorial(number):
    result = 1
    for i in range(1, number + 1):
        result *= i
    return result

# Get user input for the number
user_input = input("Enter a number to calculate its factorial: ")

# Check if the input is a valid integer
if user_input.isdigit():
    number = int(user_input)

    # Calculate and display the factorial
    factorial_result = calculate_factorial(number)
    print(f"The factorial of {number} is: {factorial_result}")

else:
    print("Invalid input. Please enter a valid integer.")
```

In Class Activity 2

Write a python script To perform the following tasks.

- A. `secret_number` is a randomly generated number between 1 and 10.
- B. The program uses a `while` loop to repeatedly prompt the user for input until they guess the correct number.
- C. The user's input is checked to ensure it is a valid integer using `isdigit()`.
- D. Feedback is provided based on whether the guess is too low or too high.
- E. The program congratulates the user when they guess the correct number and displays the number of attempts it took.

```
import random

# Generate a random number between 1 and 10
secret_number = random.randint(1, 10)

# Initialize variables
guess = 0
attempts = 0

# Loop until the user guesses the correct number
while guess != secret_number:
    # Get user input
    user_input = input("Guess the number between 1 and 10: ")

    # Check if the input is a valid integer
    if user_input.isdigit():
        guess = int(user_input)
        attempts += 1

    # Check if the guess is correct
    if guess == secret_number:
        print(f"Congratulations! You guessed the correct number in {attempts} attempts.")
```

```
    else:
        # Provide feedback based on the user's guess
        if guess < secret_number:
            print("Too low! Try again.")
        else:
            print("Too high! Try again.")
    else:
        print("Invalid input. Please enter a valid integer.")

# End of the program
```