**Assignment 1: Using DHT11 with Raspberry Pi and AWS - Situation**

Scenario: You are tasked with creating a smart environmental monitoring system for a greenhouse. The greenhouse is used to cultivate exotic plants, and precise control of temperature and humidity is crucial for their growth. Your goal is to set up a system that can monitor and maintain optimal environmental conditions.

Situation Description:

- The greenhouse contains a variety of delicate plants that require specific temperature and humidity levels for growth.

- Raspberry Pi with a DHT11 sensor is installed in the greenhouse.

- The DHT11 sensor continuously measures temperature and humidity.

- The Raspberry Pi is connected to AWS IoT, where it sends the data in real-time.

- If the temperature or humidity levels deviate from the desired range, an alert is sent to the greenhouse manager's mobile device.

- The manager can remotely adjust the greenhouse environment using a mobile app connected to AWS IoT, ensuring that the plants thrive.

This situation highlights the practical application of using the DHT11 sensor with a Raspberry Pi and AWS to create an IoT solution for environmental monitoring in agriculture.

**Assignment 2: Using DHT11 with ESP32 and AWS - Situation**

Scenario: You are working on a home automation project, specifically on improving the energy efficiency and comfort of a smart home. Your assignment is to integrate a temperature and humidity sensor into the smart home system and use the data for intelligent climate control.

Situation Description:

- The smart home is equipped with an ESP32 microcontroller.

- The ESP32, using a DHT11 sensor, regularly measures the temperature and humidity levels inside the house.

- The data is sent securely to AWS IoT for analysis and storage.

- Based on the temperature and humidity data, the home automation system optimizes heating, cooling, and ventilation to ensure energy efficiency and comfort.

- If high humidity is detected, the system can trigger a dehumidifier, or if the temperature is too low, it can activate the heating system.

- Users can remotely monitor and control the climate settings through a smartphone app connected to AWS IoT.

This situation showcases the application of using the DHT11 sensor with an ESP32 and AWS in a real-life home automation scenario, emphasizing energy efficiency and user comfort.