Task: **Design a Block Diagram for ACC with CAN Bus Control**

Objective: Your goal is to research and design a detailed block diagram illustrating the operation of Adaptive Cruise Control (ACC) in a vehicle integrated with CAN bus communication.

Instructions:

Research Adaptive Cruise Control (ACC): Begin by understanding the basic functionality of ACC. What is its purpose? How does it differ from traditional cruise control?

Identify Key Components: After understanding the basics of ACC, delve deeper to identify the crucial components that make up this system. Consider components like sensors, modules, switches, actuators, and other essential parts.

Integrate CAN Bus Control: Research how the CAN (Controller Area Network) bus plays a role in the ACC system. Consider how information flows between components and how the CAN bus facilitates these communications.

Design the Block Diagram: Once you've identified all the components and understood their interactions:

Draw each component as a block.

Connect the blocks with arrows to indicate the flow of information.

Clearly label each block and connection.

Reflection: After completing your block diagram, write a brief reflection (1-2 paragraphs) on:

Challenges you faced during the research and design process.

Any surprising insights or facts you learned about ACC and CAN bus control.

Submission: Submit your block diagram along with your reflection. Ensure that your diagram is clear, well-labeled, and organized.

**Analyze the ACC Signals and Information Flow Block Diagram**

Objective:

Examine the provided "ACC signals and Information Flow" block diagram (Figure 4) to determine the number of Electronic Control Units (ECUs), Controller Area Network (CAN) messages, and distinct signals.

Instructions:

ECUs Identification:

Identify all Electronic Control Units (ECUs) present in the block diagram.

An ECU is typically a module or a controller responsible for a particular function or set of functions in a vehicle. For instance, an "Engine Control Module" is an ECU.

List down all identified ECUs.

CAN Messages Determination:

Investigate the diagram to determine the number of Controller Area Network (CAN) messages being sent or received by the ECUs.

A hint: Look for any specific labels or indications that represent data transmission on the CAN bus.

Document the source and destination of each CAN message.

Signal Identification:

Recognize the distinct signals present in the block diagram.

A signal can be any specific data or command being sent from one block to another, such as "Brake Lights Command."

Enumerate all identified signals and specify their origin and destination modules.

