This lesson covered MQTT as a communication protocols. There are others, including AMQP and HTTP/HTTPS.

Research these both and compare/contract them with MQTT. Think about power usage, security, and message persistence if connections are lost.

Answer:

1. Research MQTT, AMQP and HTTP/HTTPS

- MQTT
  + Designed for lightweight, publish-subscribe messaging.
  + Ideal for IoT devices with limited resources.
  + Focuses on simplicity and efficiency.
- AMQP
  + A more robust, feature-rich messaging protocol.
  + Offers complex routing and message queuing.
  + Suitable for enterprise-level applications.
- HTTP/HTTPS
  + The foundation of web communication.
  + Uses a request-response model.
  + HTTPS adds security through encryption.

2. Compare AMQP to MQTT

Feature	MQTT	AMQT
Power Usage	Very low overhead, efficient for low-power devices.	Higher overhead due to its complexity.
Security	Can be secured using TLS/SSL, but security is often implemented at the application layer.	Offers robust security features, including authentication and encryption.
Message Persistence	Offers quality of service (QoS) levels to handle message delivery, but persistence depends on the broker.	Supports persistent messaging, ensuring delivery even if connections are lost.

3. Compare HTTP/HTTPS to MQTT

Feature	MQTT	HTTP/HTTPS
Power Usage	Very low overhead, efficient for low-power devices	Relatively high overhead, especially with frequent requests.
Security	Can be secured using TLS/SSL, but security is often implemented at the application layer.	Provides strong security through TLS/SSL encryption.
Message Persistence	Offers quality of service (QoS) levels to handle message delivery, but persistence depends on the broker.	Primarily designed for request-response, not persistent messaging. If a connection is lost the data within that transmission is lost.

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