API PROTOCOLS

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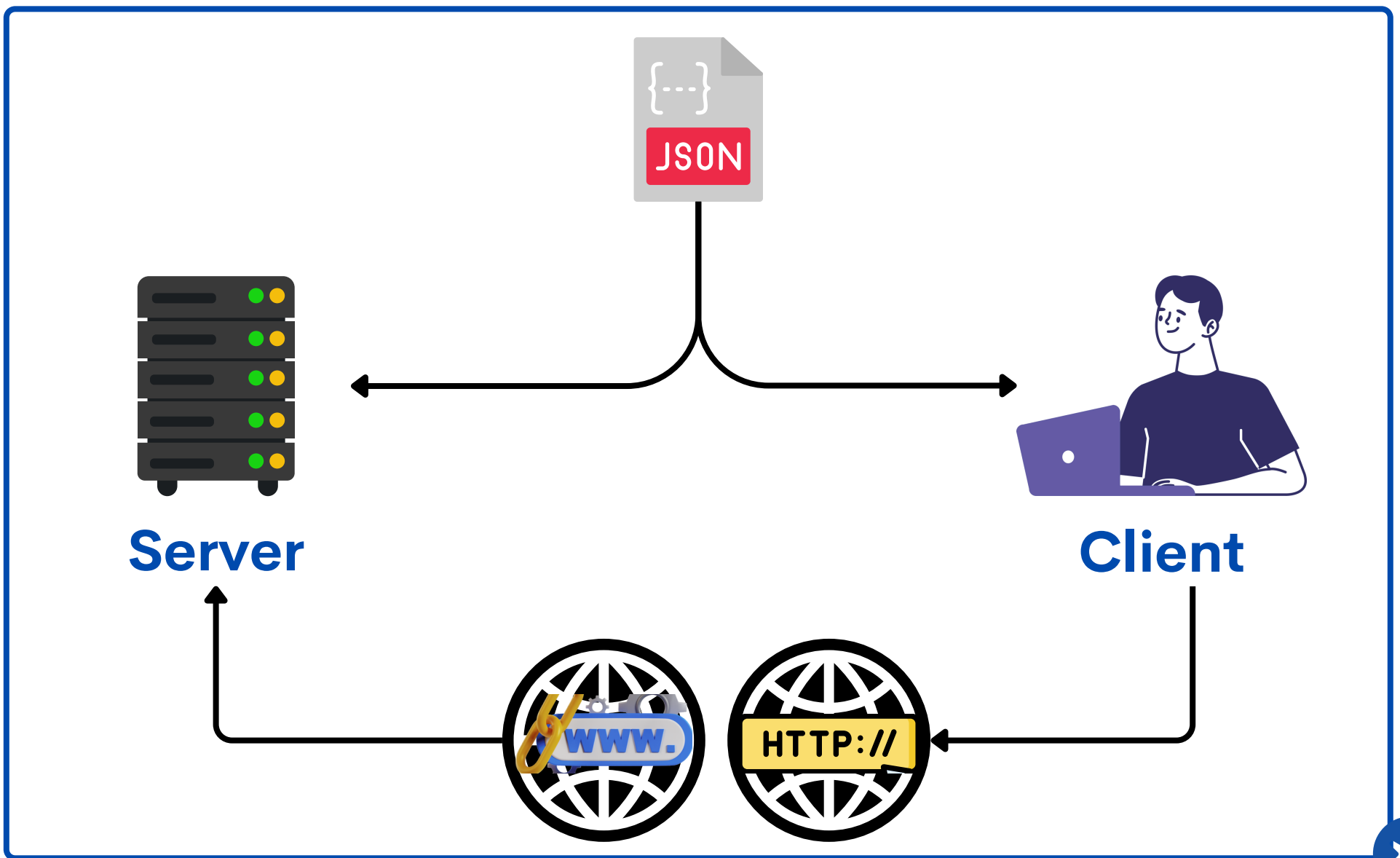
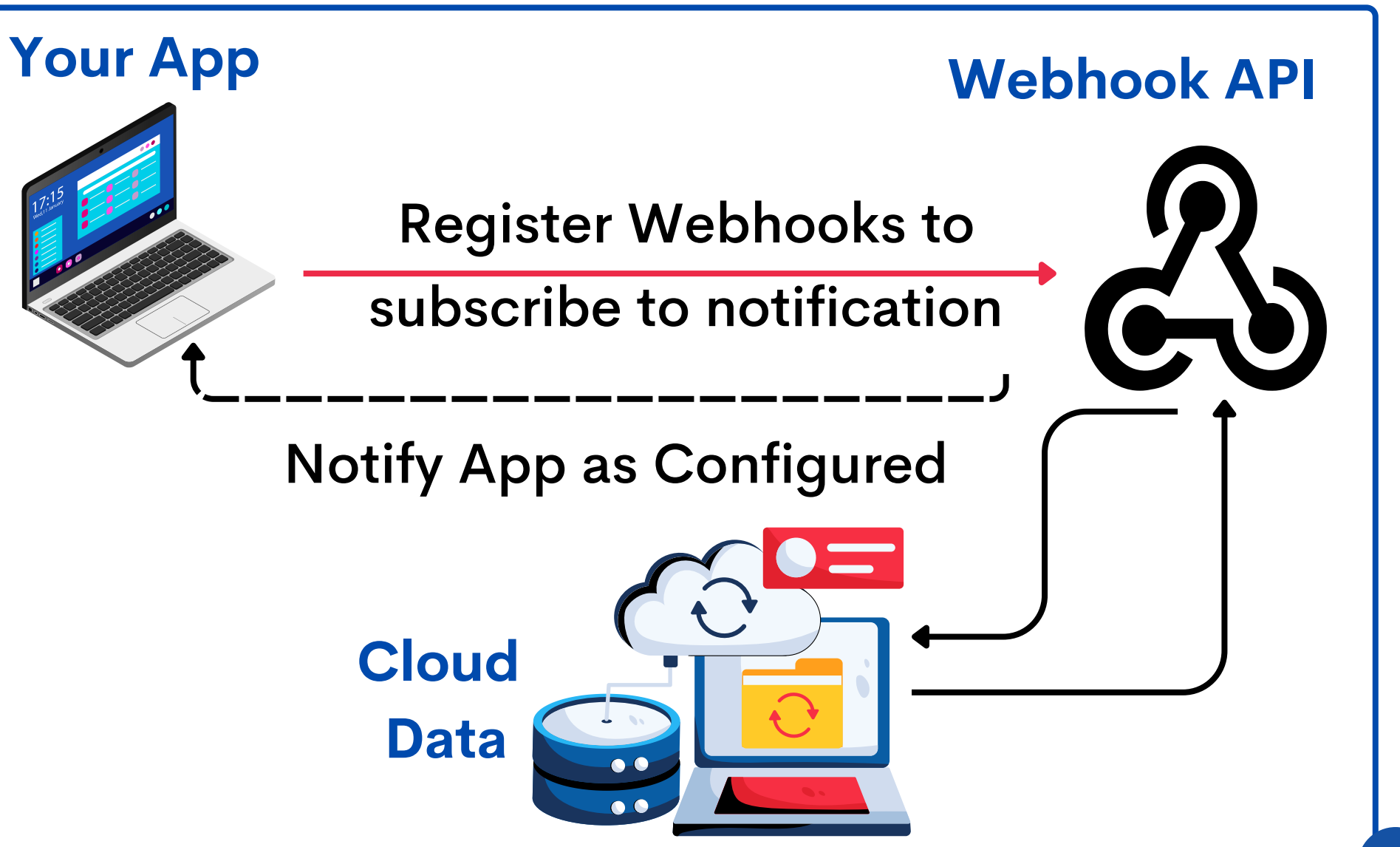
REST

- Uses HTTP methods like GET, POST, PUT, DELETE.
- Stateless architecture ensures independent requests.
- Supports multiple formats (JSON, XML).
- Common in web services and mobile apps.



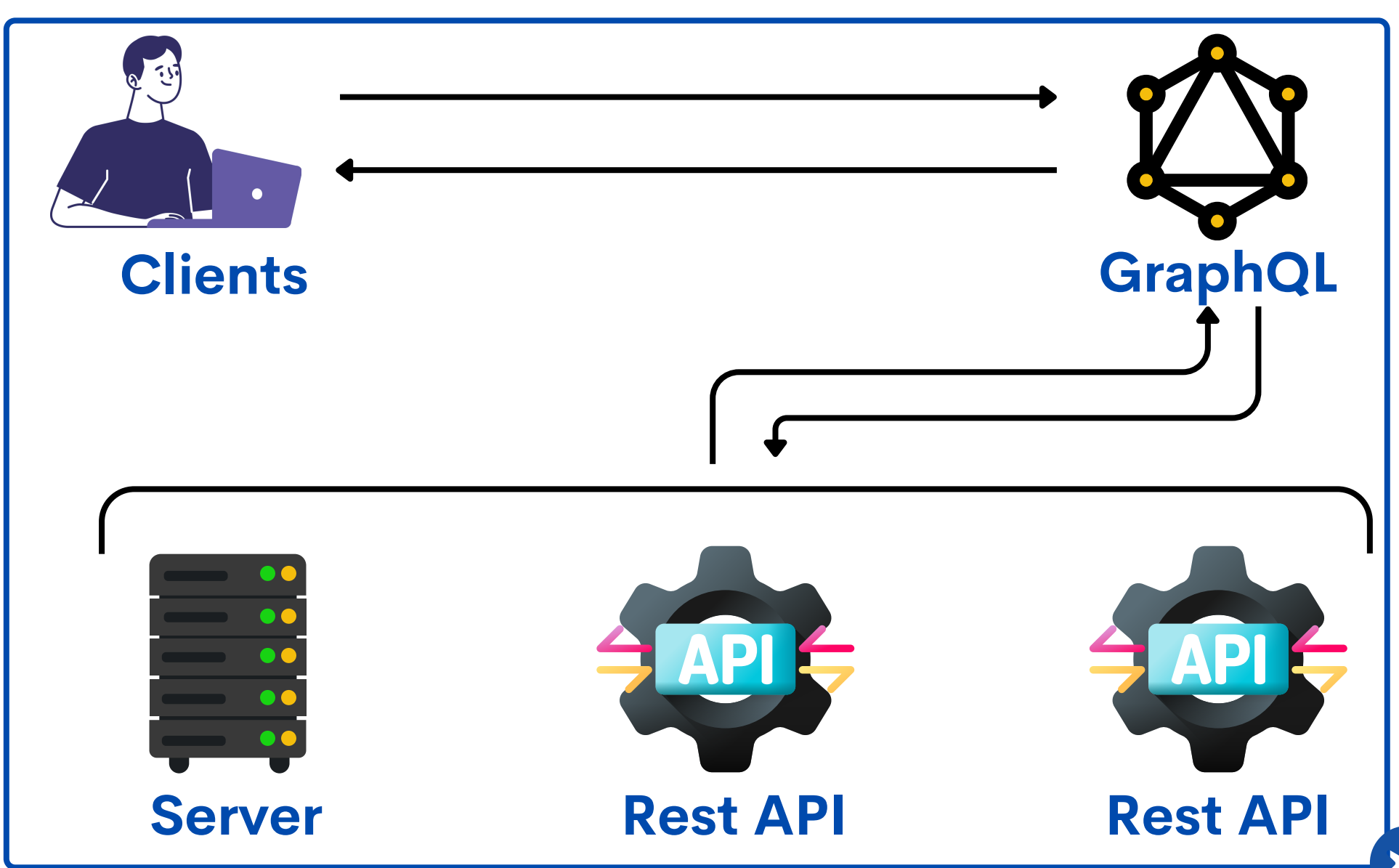
WEBHOOKS

- Event-driven mechanism using HTTP callbacks.
- Sends POST requests when an event triggers.
- Common in automation and third-party integrations.
- Used in CI/CD pipelines, notifications, and payments.



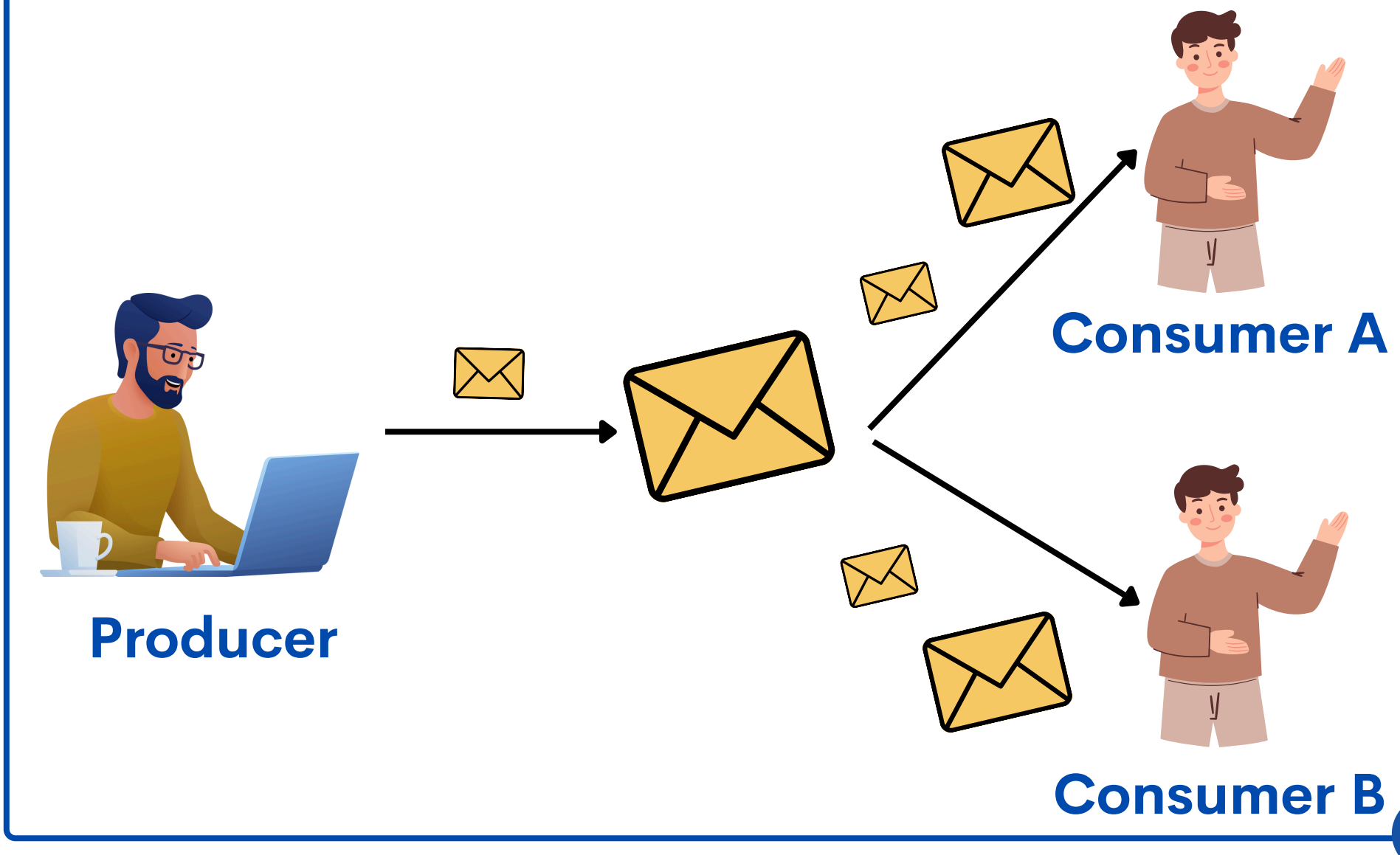
GRAPHQL

- Clients request specific data, reducing over-fetching.
- Uses a single endpoint for all queries.
- Strongly typed schema for better structure.
- Ideal for complex applications and mobile devices.



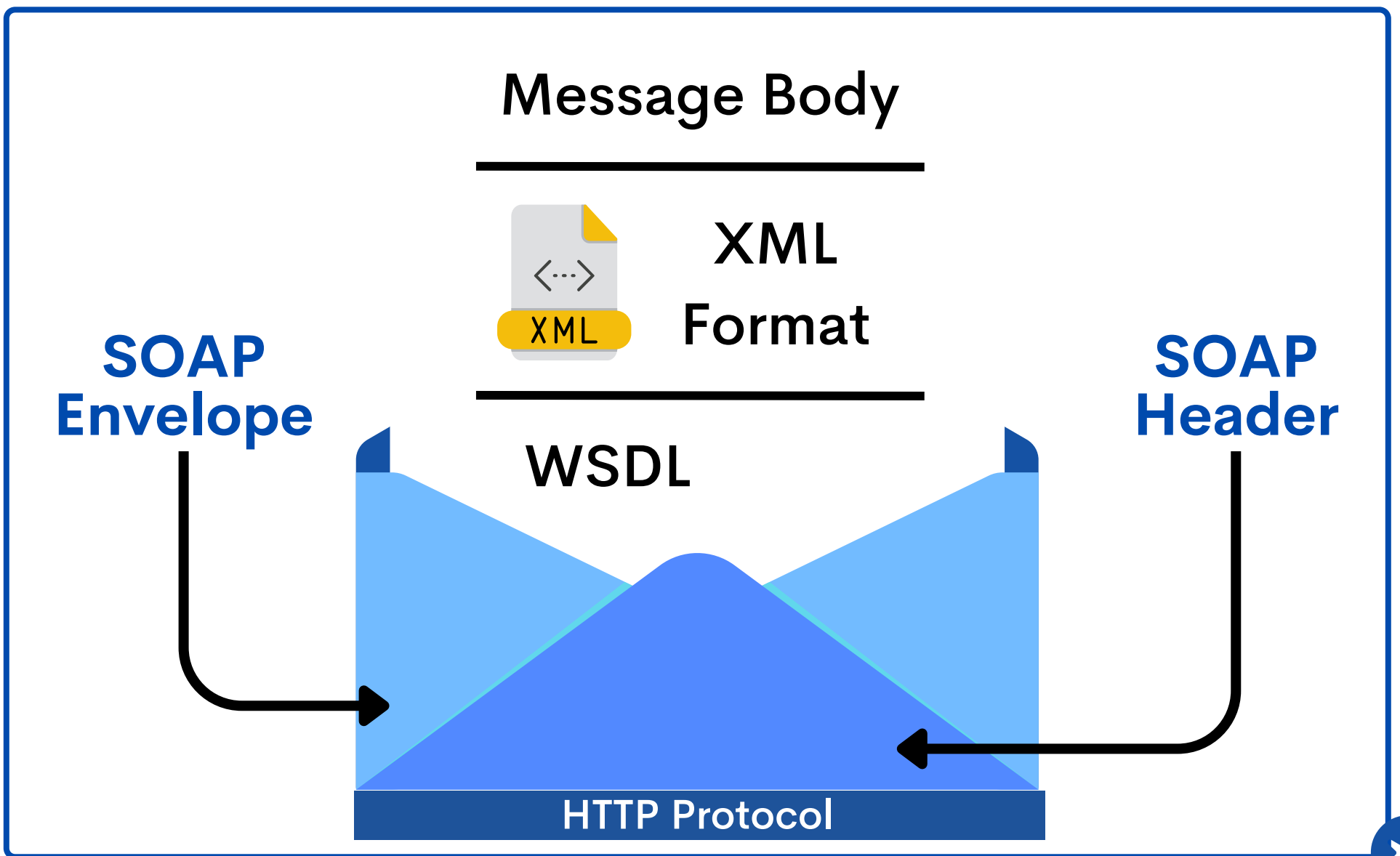
EDA

- Components communicate via asynchronous events.
- Improves scalability and decoupling.
- Often implemented using message brokers (Kafka, RabbitMQ).
- Used in IoT, microservices, and real-time systems.



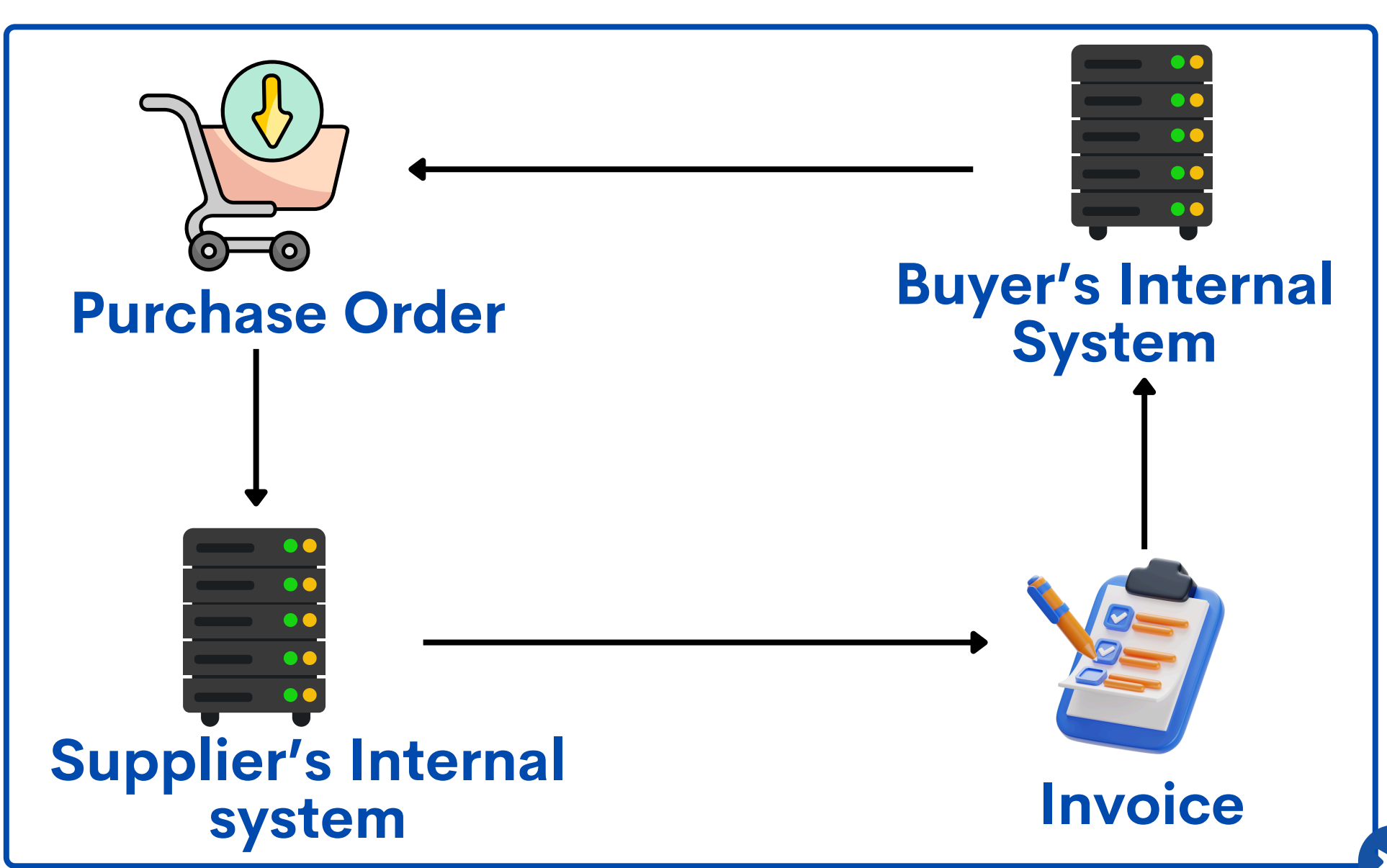
SOAP

- XML-based protocol for structured messaging.
- Supports security standards like WS-Security.
- Works over multiple transport protocols .
- Used in banking, government, and enterprise systems.



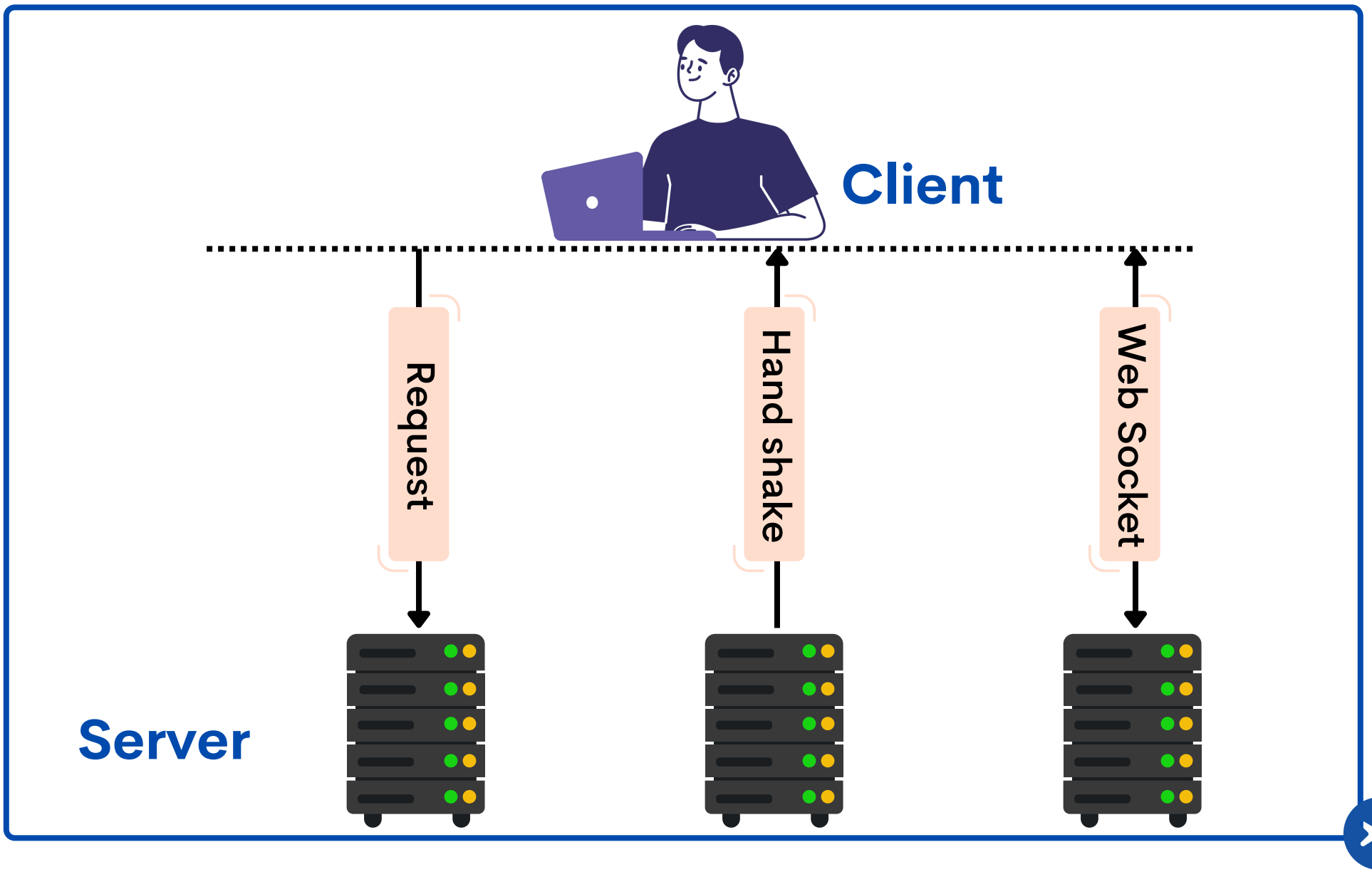
EDI

- Automates B2B transactions (invoices, orders).
- Uses structured formats like X12, EDIFACT.
- Eliminates paper-based processes, improving efficiency.
- Ensures secure and standardized data exchange.



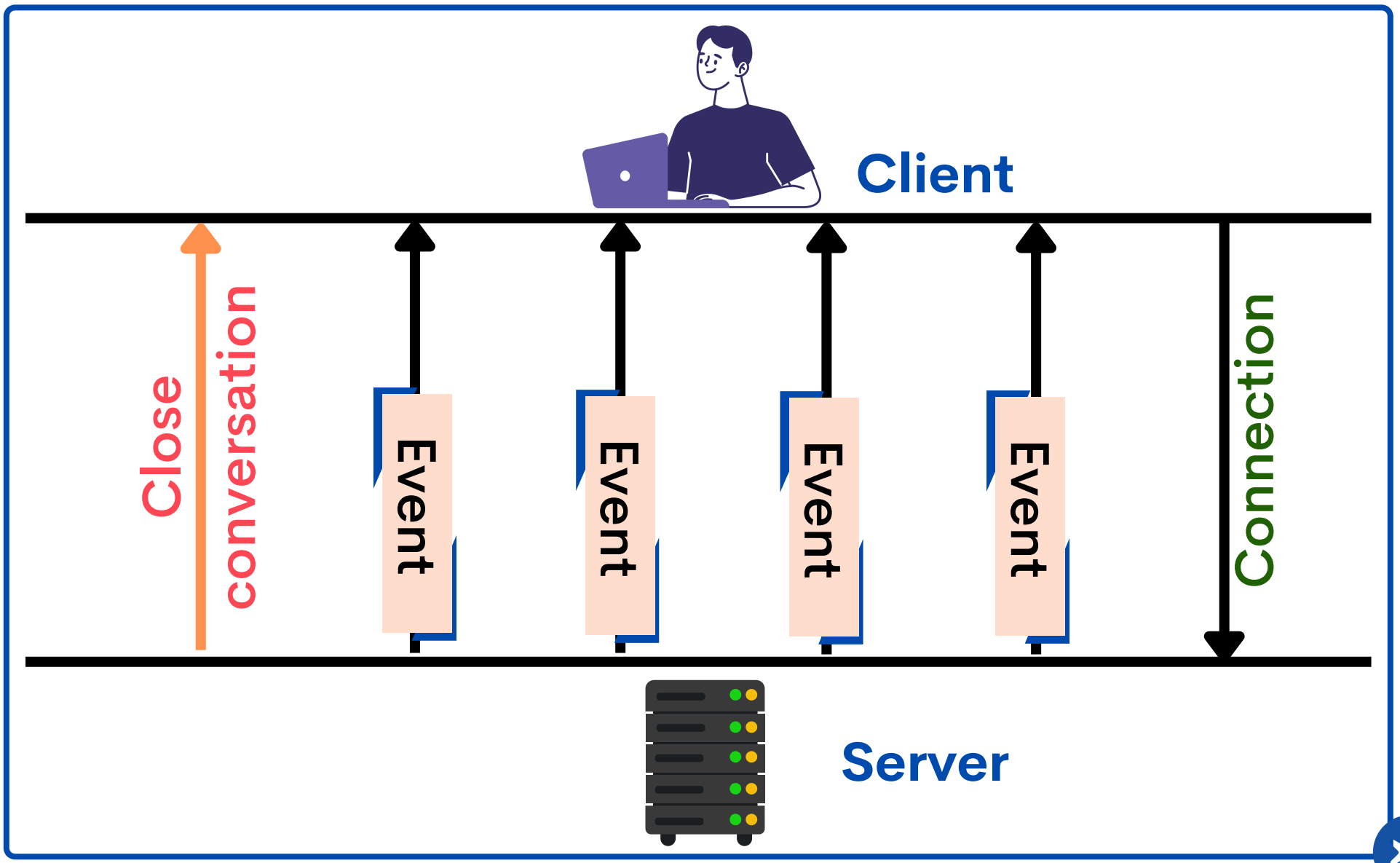
WEBSOCKET

- Provides real-time, full-duplex communication.
- Keeps a persistent connection between client and server.
- Ideal for chat apps, gaming, and live updates.
- Reduces overhead compared to HTTP polling.



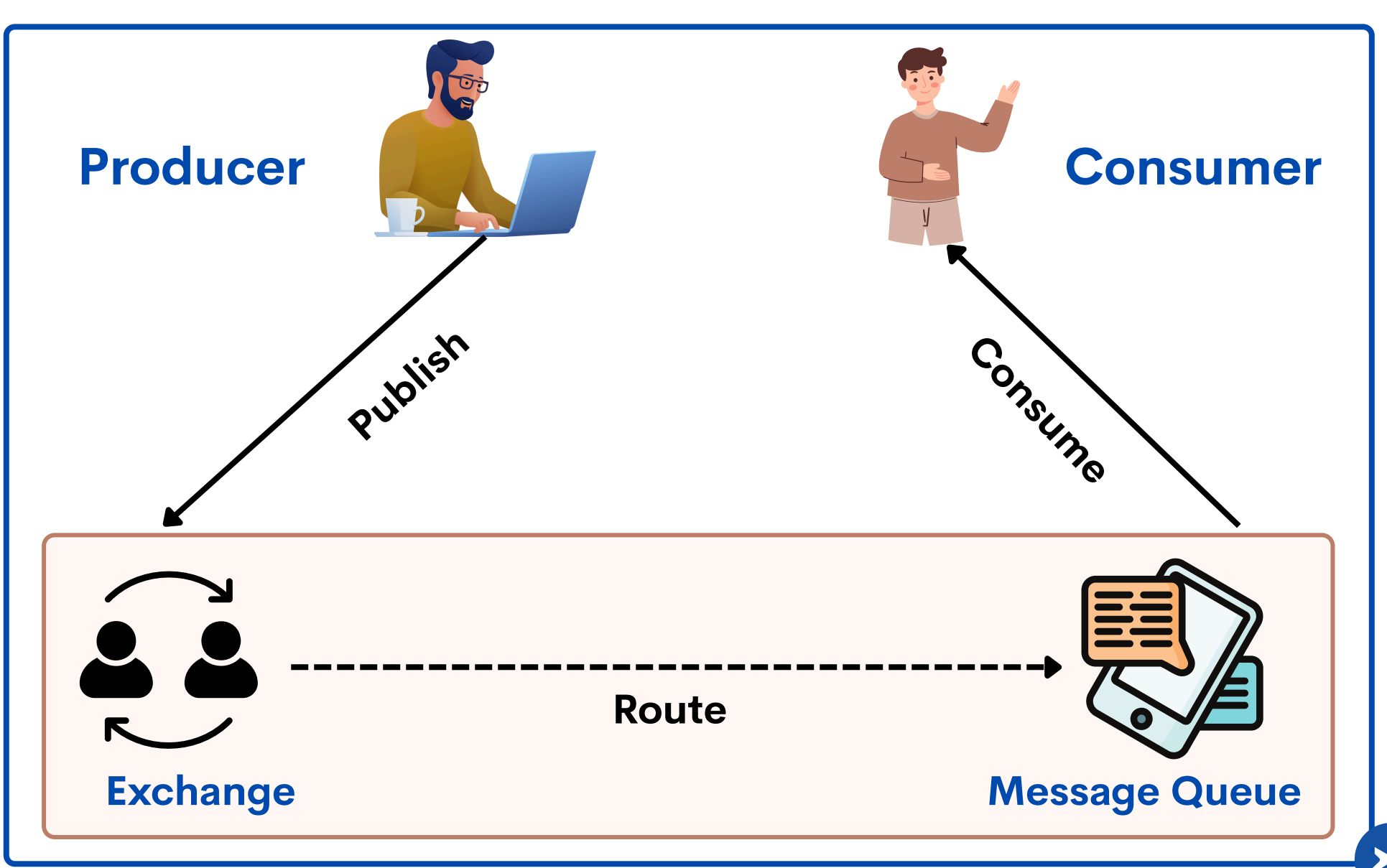
SSE

- One-way communication (server to client).
- Uses EventSource API in browsers.
- Lightweight alternative to WebSockets.
- Used for real-time notifications and stock updates.



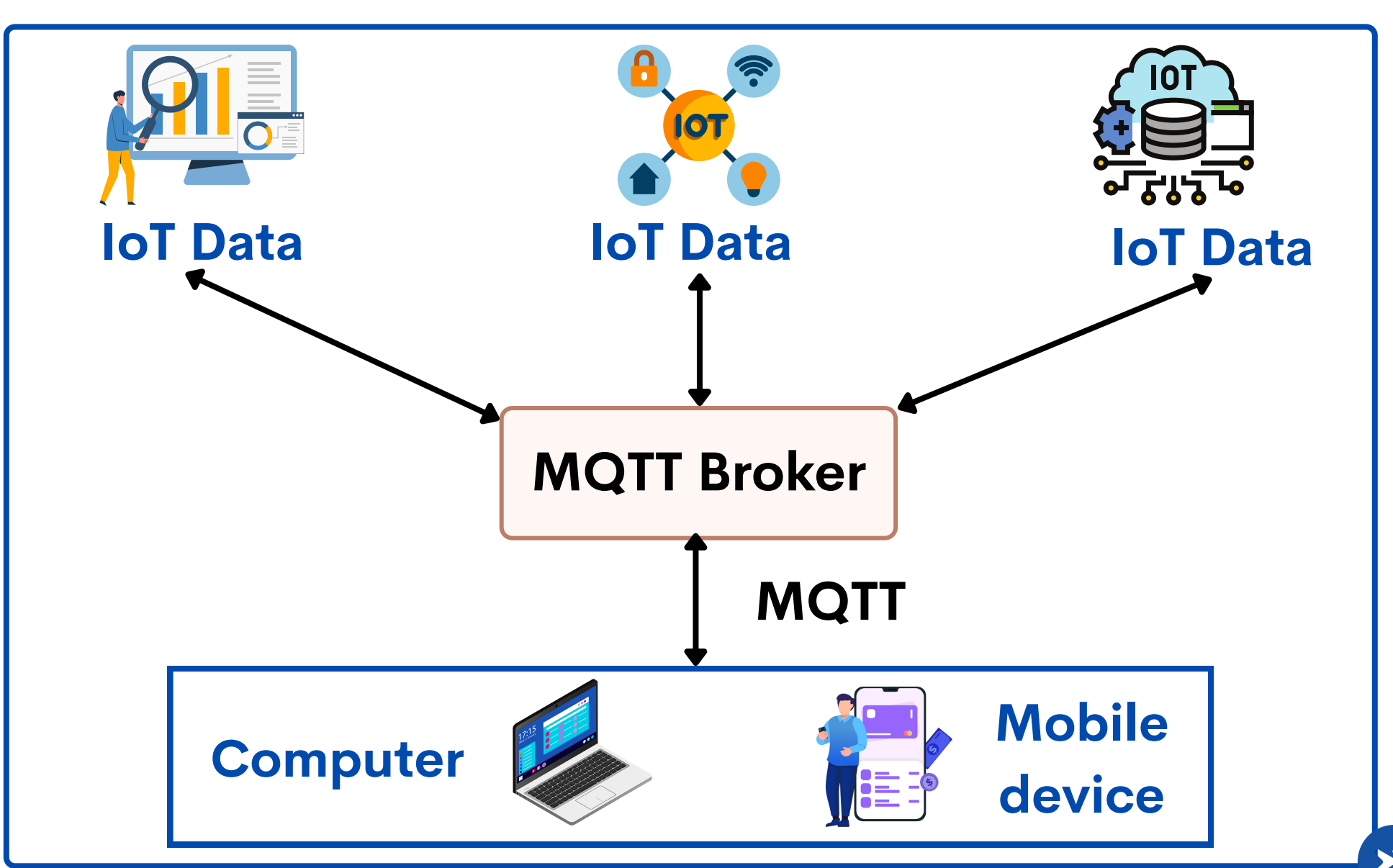
AMQP

- Enables async messaging in systems.
- Ensures reliable message delivery.
- Supports pub-sub & direct messaging.
- Used in IoT & finance sectors.



MQTT

- Lightweight protocol designed for IoT devices.
- Works on a publish-subscribe model.
- Low power consumption, ideal for constrained networks.
- Used in smart homes, sensors, and industrial IoT.



GRPC

- High-performance framework using Protocol Buffers.
- Faster than JSON/XML-based APIs.
- Supports bidirectional streaming and authentication.
- Ideal for microservices, real-time, and cloud-native applications.