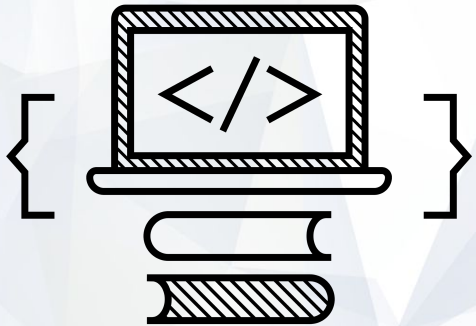


Queues

Course: Java

S1


WELCOME

Learning Outcomes

By the end of this lesson, you will be able to:

01 Explain what a queue is.

02 Explain how a queue works within a microservices architecture.

03 Discuss Advanced Message Queuing Protocol (AMQP).

04 Implement queues in a microservices architecture.

Queues

What Is a Queue?

- Asynchronous vs. synchronous processing.
- Basic queue theory.
- Examples of Queues in the Real World:

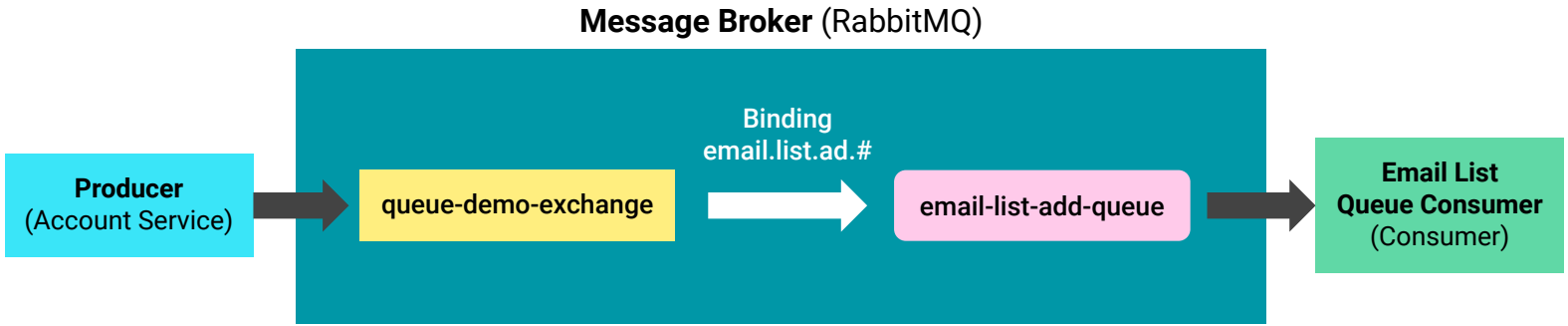
Network printers

Grocery store line

Pizzeria

How Does a Queue Work?

1. **Producer** creates a new entry/message.
    - Entry/message includes a **binding** and a **binding key (routing key)**.
2. Entry/message is sent to a **message broker** such as RabbitMQ.
3. Entry/message is **routed** to the appropriate queue(s) based on the binding key and distribution protocols.



Note: There are a variety of rules for how an entry/message can be distributed. For now, we will consider a one-to-one relationship: one message to one queue.

What are the advantages of using a queue in the InstaVizz context?

What are the disadvantages of using a queue in the InstaVizz context?

Advanced Message Queuing Protocol

The Advanced Message Queuing Protocol (AMQP) is a messaging protocol that allows clients and messaging middleware to communicate in a standardized manner.

RabbitMQ and the Spring client libraries conform to AMQP.

AMQPmandates the behavior between provider and client.

Think SMTP, HTTP, and FTP.

Why AMQP? Because interoperability matters!


RECAP

Questions?