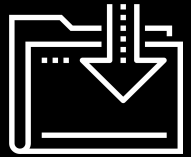


Course: Java

S1



The background is a dark charcoal gray with a series of parallel diagonal lines running from the top-left to the bottom-right. Overlaid on this are several teal-colored geometric shapes: a large central triangle pointing right, a smaller triangle to its left, and a square to its right. Scattered around these shapes are various white line-art symbols, including a plus sign, a minus sign, a circle with a dot, a circle with a horizontal line, a circle with a vertical line, a circle with a diagonal line, a circle with a cross, a circle with a dot, a circle with a horizontal line, a circle with a vertical line, a circle with a diagonal line, a circle with a cross, a circle with a dot, a circle with a horizontal line, a circle with a vertical line, a circle with a diagonal line, and a circle with a cross.

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

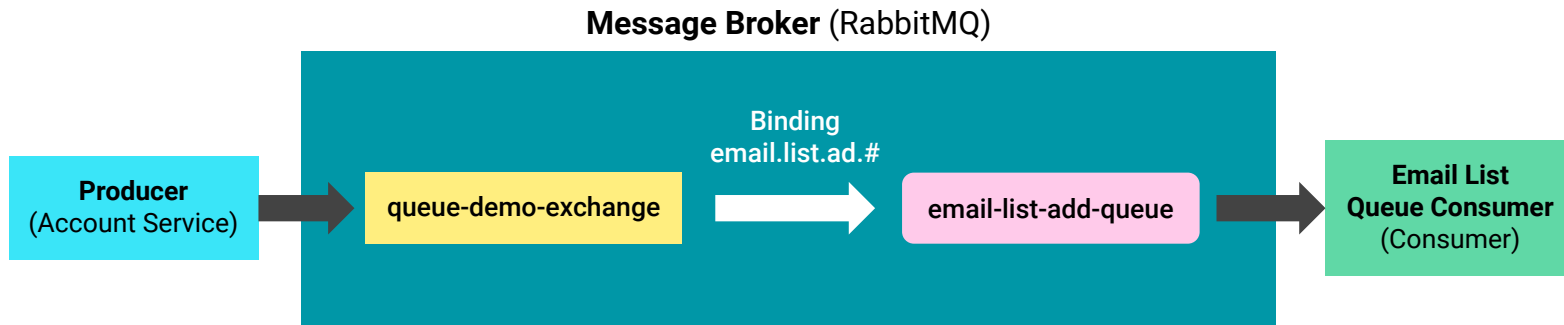


Pizzeria



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.



AMQP mandates the behavior between provider and client.



Think SMTP, HTTP, and FTP.



Why AMQP? Because interoperability matters!



Questions?

