Spring Boot Microservices

Beginner to Guru

Credit Card Payment State Machine Overview

Credit Card Processing Overview

- In Credit Card processing, with some vendors you have the option to pre-authorize a charge

- Example: Purchasing gas

  - Swipe card - pre-authorize charge occurs

  - Validates card, places hold on funds

  - Pump gas

  - Charge card with actual amount of sale

Thinking in States

- The Credit Card Payment will have the following states:

  - **New** - new payment

  - **Pre Authorized** - Charge Pre Authorized with processor

  - **Pre Authorized Error** - Pre Authorization rejected by processor

  - **Authorized** - Charge approved by processor

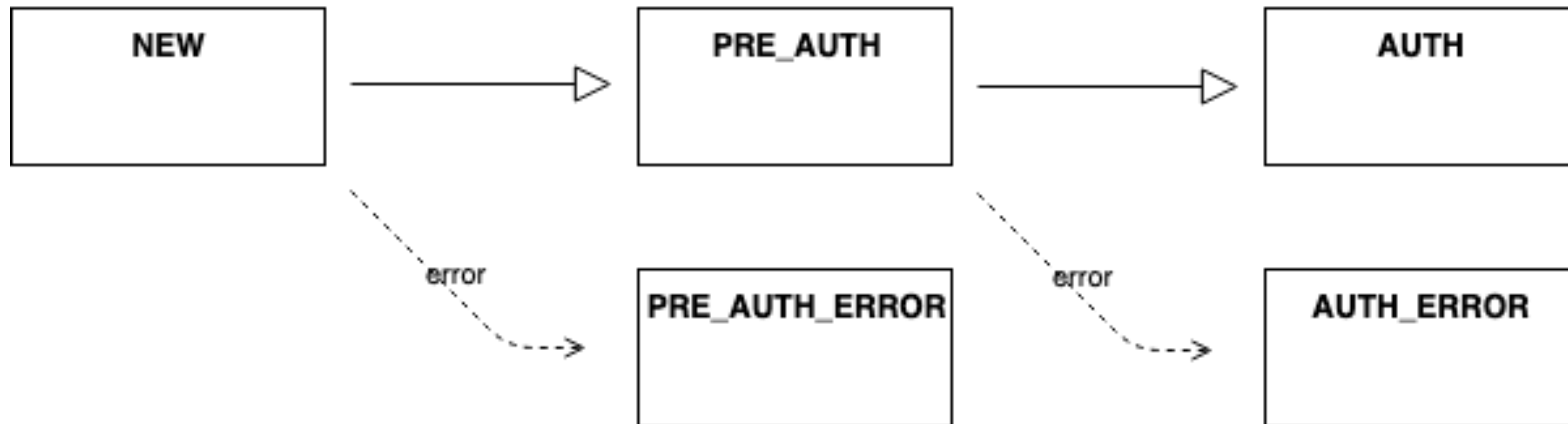 - **Authorization Error** - Charge rejected by processor

Thinking in Events

- Credit Card Processing Events:

  - **Pre Authorize Charge** - Call processor for pre auth transaction

  - **Pre Authorize Approved** - Processor approved pre authorize

  - **Pre Authorize Declined** - Processor declined pre authorize

  - **Authorize Charge** - Call processor for charge authorization

  - **Authorization Approved** - Processor approved charge

  - **Authorization Declined** - Processor rejected charge

Payment State Machine

NEW	→	PRE_AUTH	→	AUTH

error ⤏	PRE_AUTH_ERROR	error ⤏	AUTH_ERROR

PRE_AUTHORIZE / PRE_AUTH_DECLINED   AUTHORIZED / AUTH_DECLINED

Next Steps

- Create new project for Spring State Machine

- Define States and events into Java enums

- Define JPA Entity for Payments

- Define Spring Data JPA Repository

- Configure State Machine states, transitions, and actions

SPRING FRAMEWORK GURU