**User Service – Architecture Diagram**

+---------------------+

| UserController |

+---------------------+

↓

+---------------------+

| UserService |

+---------------------+

↓

+---------------------+ → [ LoggerUtil ]

| UserRepository | → [ BCryptPasswordEncoder ]

+---------------------+

↓

[ MySQL Database ]

+---------------------+

| UserController |

+---------------------+

↓

+---------------------+

| UserService |

+---------------------+

↓

+---------------------+ → [ LoggerUtil ]

| UserRepository | → [ BCryptPasswordEncoder ]

+---------------------+

↓

[ MySQL Database ]

**Product Catalog Service – Architecture Diagram**

+----------------------------+

| ProductCatalogController |

+----------------------------+

↓

+----------------------------+

| ProductCatalogService |

+----------------------------+

↓

+----------------------------+ → [ CategoryFilterUtil ]

| ProductRepository | → [ PriceCalculatorUtil ]

+----------------------------+

↓

[ MySQL (product\_db) ]

Payment Service – Architecture Diagram

+-----------------------+

| PaymentController |

+-----------------------+

↓

+-----------------------+

| PaymentService |

+-----------------------+

↓

+-----------------------+ → Feign → [ CardValidationClient ]

| PaymentRepository |

+-----------------------+

↓

[ MySQL Database ]

**Card Validation Service – Lightweight Diagram**

+--------------------------+

| CardValidationController|

+--------------------------+

↓

+--------------------------+

| CardValidationService |

+--------------------------+

↓

[ No repository layer ]

↓

[ H2 In-Memory DB ]

**Architectural diagram**



