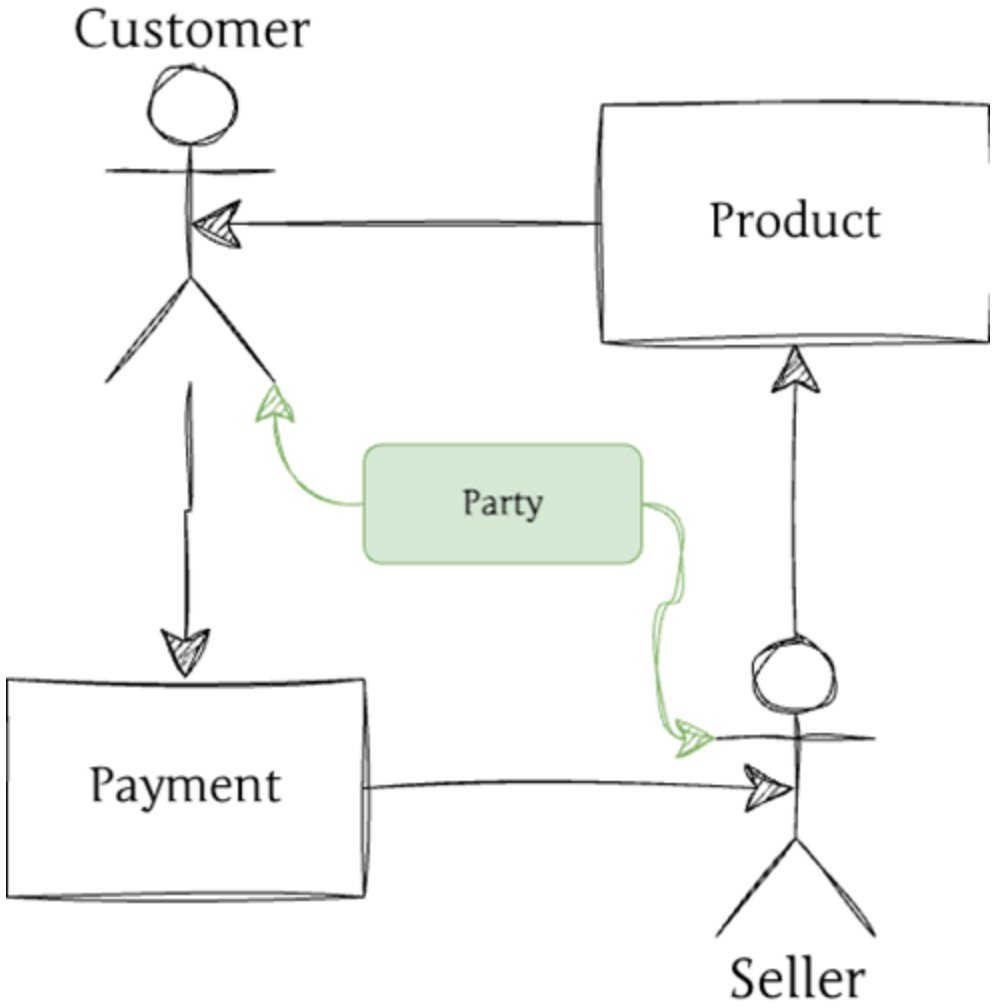

Customer
Product
Party
Payment
Seller

Jakub Ciszak

Senior Software Developer

BurdaMedia Polska

https://www.linkedin.com/in/jakub-ciszak/

developers ŁÓDŹ

Ktoś już to wymyślił

Modelowanie z użyciem archetypów biznesowych.

Plan

1. Co to jest archetyp?
2. Czym są archetypy biznesowe?
3. Kilka problemów do rozwiązania
    a. ceny uzależnione od różnych czynników
        - Money, Price
    b. rozbudowa systemu magazynowego
        - Inventory
    c. zarządzanie rolami
        - Party, PartyRelationship
4. Podsumowanie
5. QA

Co to jest archetyp?

Słownik Języka Polskiego

- pierwotny wzór postaci, obiektu lub zjawiska;
- schemat zachowania i postrzegania świata nieświadomie powielany przez ludność

Co to jest archetyp biznesowy?

Enterprise Patterns and MDA: Building Better Software with Archetype Patterns and UML
Jim Arlow, Ila Neustadt, December 22, 2003

"A business archetype is a primordial thing that occurs consistently and universally in business domains and business software systems."

...

„Archetyp biznesowy to pierwotny element, który występuje konsekwentnie i uniwersalnie w domenach biznesowych i systemach oprogramowania biznesowego."

Co to jest archetypowy wzorzec biznesowy?

Enterprise Patterns and MDA: Building Better Software with Archetype Patterns and UML
Jim Arlow, Ila Neustadt, December 22, 2003

"A business archetype pattern is a collaboration between business archetypes that occurs consistently and universally in business environments and software systems."

...

„Archetypowy wzorzec biznesowy to współpraca między archetypami biznesowymi, która występuje konsekwentnie i uniwersalnie w środowiskach biznesowych i systemach oprogramowania."

Kilka problemów

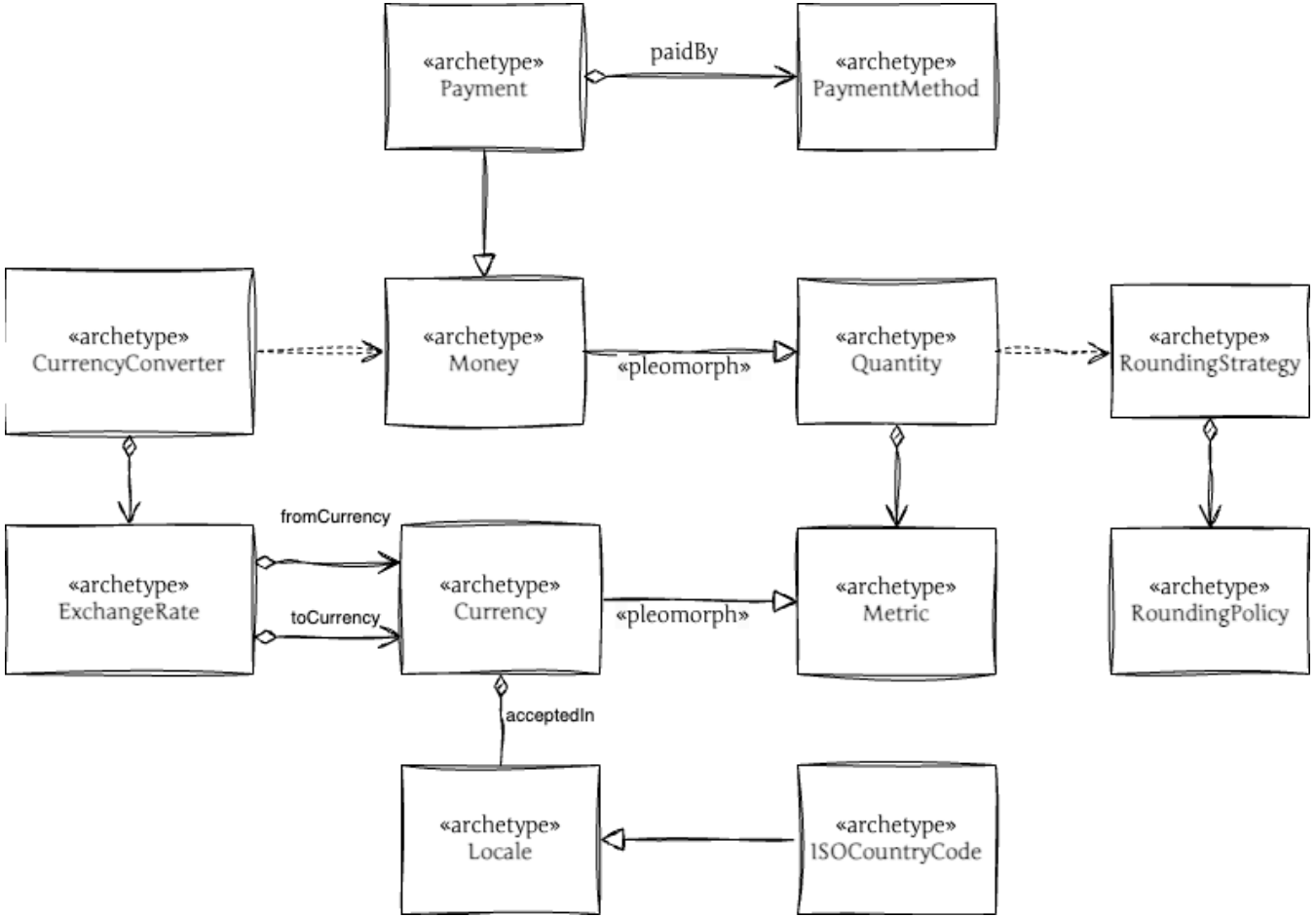
Ceny uzależnione od różnych czynników

Money Price

Ceny uzależnione od różnych czynników

Money Price

- Produkt może posiadać wiele cen
- Wybór odpowiedniej ceny jest uzależniony od różnych **zmiennych** czynników
- Możliwość implementacji przelicznika walut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PaymentMethod
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CurrencyConverter
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Locale
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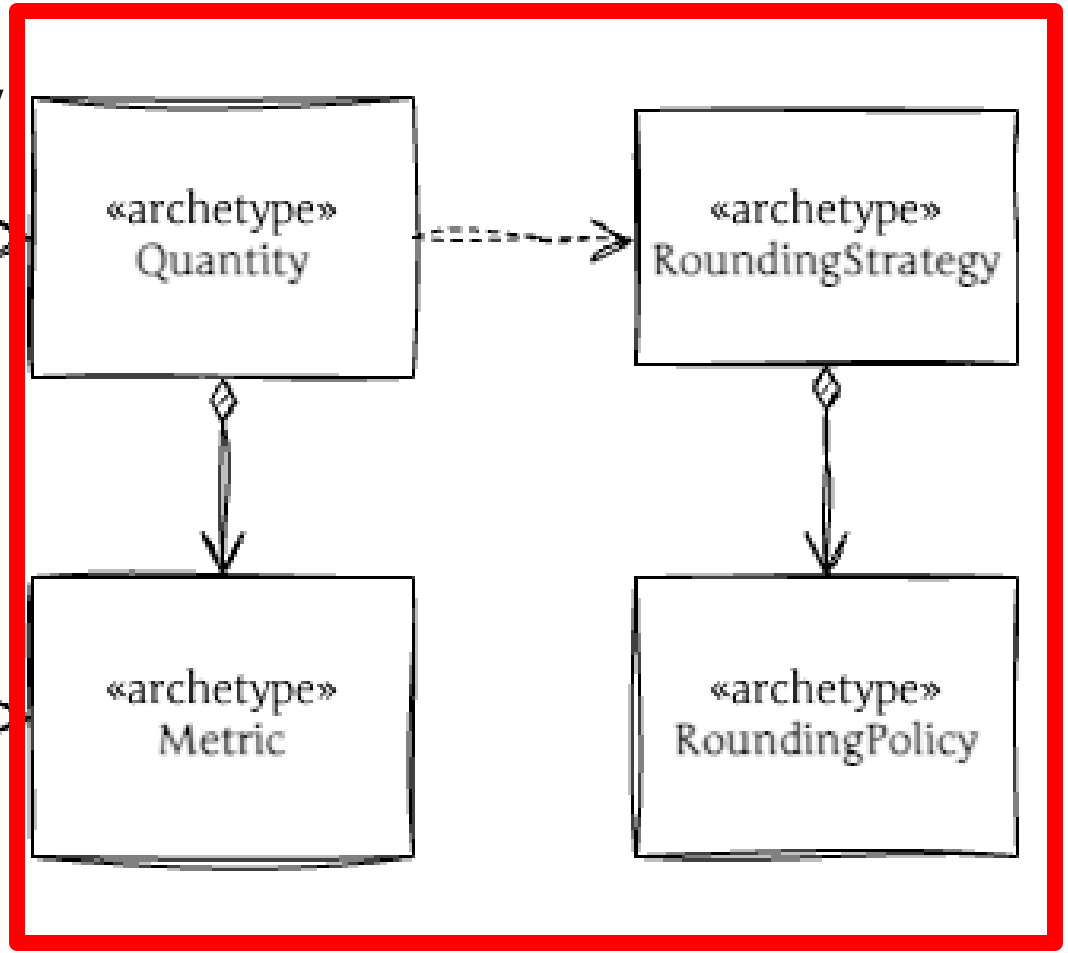
ISOCountryCode

Quantity


«archetype»
Quantity
«archetype»
RoundingStrategy
«archetype»
Metric
«archetype»
RoundingPolicy

```php
readonly class Quantity
{
    public function __construct(
        protected float $amount,
        protected Metric $metric,
        protected RoundingPolicy $roundingPolicy
    ) {
    }

    public function amount(): float
    {
        return $this->amount;
    }

    public function add(Quantity $quantity): static{...}
    public function subtract(Quantity $quantity): static{...}
    public function multiply(float|Quantity $multiplier): static{...}
    public function divide(float|Quantity $divisor): static{...}
    public function isGreaterThan(Quantity $quantity): bool{...}
    public function isLessThan(Quantity $quantity): bool{...}
    public function isEqualTo(Quantity $quantity): bool{...}
    private function checkMetric(Quantity $quantity): void{...}
    private function fromNumber(float $number): static{...}
    public function value(): float
    {
        return $this->roundingPolicy->round($this->amount);
    }

    public function symbol(): string
    {
        return $this->metric->symbol();
    }
}
```

```php
interface Metric
{
    public function name(): string;
    public function symbol(): string;
    public function definition(): string;
    public function equals(Metric $other): bool;
}
```

```php
final readonly class RoundingPolicy
{

    public function __construct(
        public RoundingStrategy $strategy,
        public int $numberOfDigits = 2,
        public int $roundingDigit = 5
    ){
    }

    public function round(float $value): float
    {
        return match ($this->strategy) {
            RoundingStrategy::ROUND_UP => $this->roundUp($value),
            RoundingStrategy::ROUND_DOWN => $this->roundDown($value),
            default => $this->roundDefault($value),
        };

    }

    private function roundUp(float $value): float{...}

    private function roundDown(float $value): float{...}

    private function roundDefault(float $value): float{...}

}
```

```php
public function amount(): float
{
    return $this->amount;
}

public function add(Quantity $quantity): static{...}
public function subtract(Quantity $quantity): static{...}
public function multiply(float|Quantity $multiplier): static{...}
public function divide(float|Quantity $divisor): static{...}
public function isGreaterThan(Quantity $quantity): bool{...}
public function isLessThan(Quantity $quantity): bool{...}
public function isEqualTo(Quantity $quantity): bool{...}
private function checkMetric(Quantity $quantity): void{...}
private function fromNumber(float $number): static{...}
public function value(): float
{
    return $this->roundingPolicy->round($this->amount);
}

public function symbol(): string
{
    return $this->metric->symbol();
```

```php
readonly class Quantity
{
    public function __construct(
        protected float $amount,
        protected Metric $metric,
        protected RoundingPolicy $roundingPolicy
    ) {
    }

    public function
    {
        return $thi
    }

    public function
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    public function
    {
        return $thi
    }

    public function symbol(): string
    {
        return $this->metric->symbol();
    }
}
```

```php
interface Metric
{
    public function name(): string;
    public function symbol(): string;
    public function definition(): string;
    public function equals(Metric $other): bool;
}
```

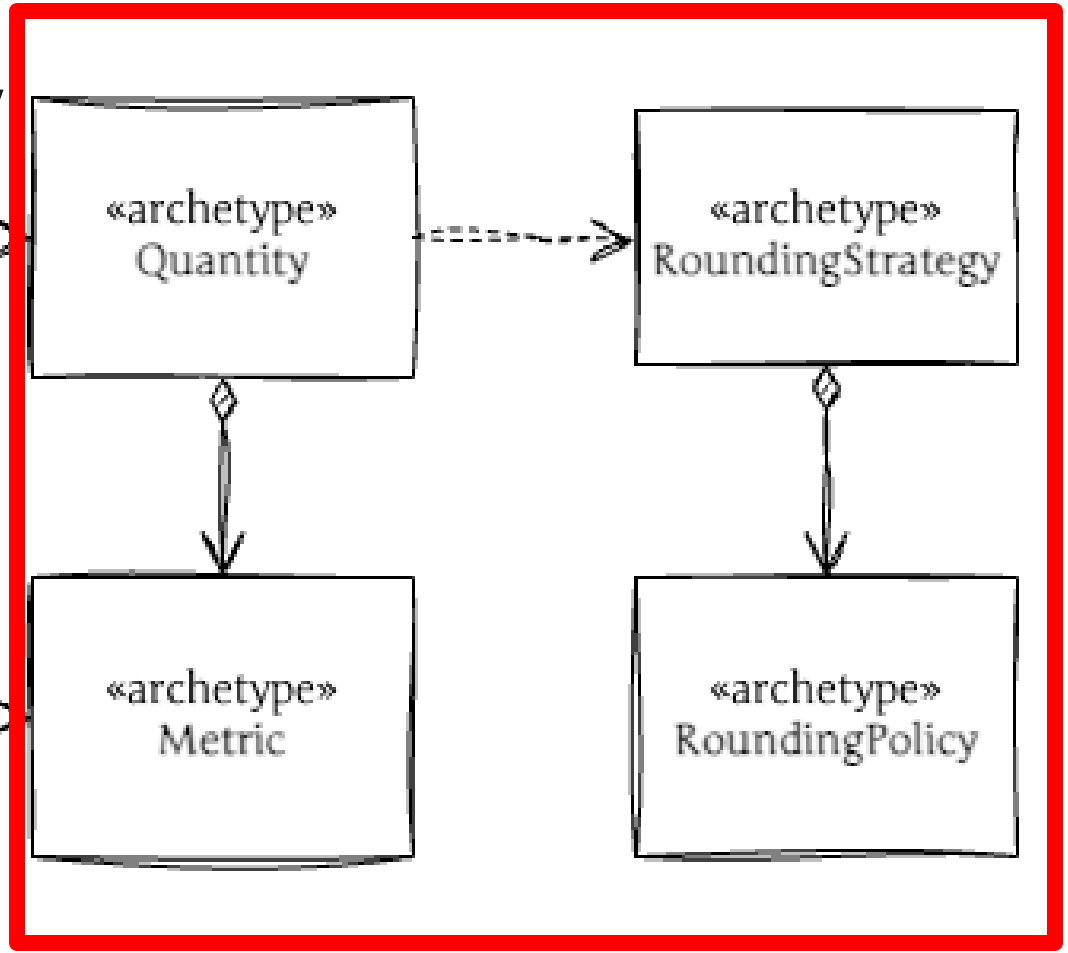
```php
    private function roundDefault(float $value): float{...}
}
```

```php
final readonly class RoundingPolicy
{

    public function __construct(
        public RoundingStrategy $strategy,
        public int $numberOfDigits = 2,
        public int $roundingDigit = 5
    ){
    }

    public function round(float $value): float
    {
        return match ($this->strategy) {
            RoundingStrategy::ROUND_UP => $this->roundUp($value),
            RoundingStrategy::ROUND_DOWN => $this->roundDown($value),
            default => $this->roundDefault($value),
        };

    }

    private function roundUp(float $value): float{...}

    private function roundDown(float $value): float{...}

    private function roundDefault(float $value): float{...}
```

```php
enum RoundingStrategy
{
    case ROUND;
    case ROUND_UP;
    case ROUND_DOWN;
}
```

```php
class QuantityPresentationTest extends TestCase
{
    public function testPresentationWithPointer(): void
    {
        $quantity = QuantityFixtureFactory::get(
            number: 10.12345,
            roundingPolicy: RoundingPolicyFixtureFactory::get(numberOfDigits: 2),
            metric: MetricFixtureFactory::get( name: 'meter', symbol: 'm', ));
        $this->assertEquals( expected: 10.12, $quantity->value());
        $this->assertEquals( expected: 'm', $quantity->symbol());
    }

    public function testPresentationInt(): void
    {
        $quantity = QuantityFixtureFactory::get(
            number: 10.5653,
            roundingPolicy: RoundingPolicyFixtureFactory::get(numberOfDigits: 0),
            metric: MetricFixtureFactory::get( name: 'meter', symbol: 'm', ));
        $this->assertEquals( expected: 11.00, $quantity->value());
        $this->assertEquals( expected: 'm', $quantity->symbol());
    }
}
```

Quantity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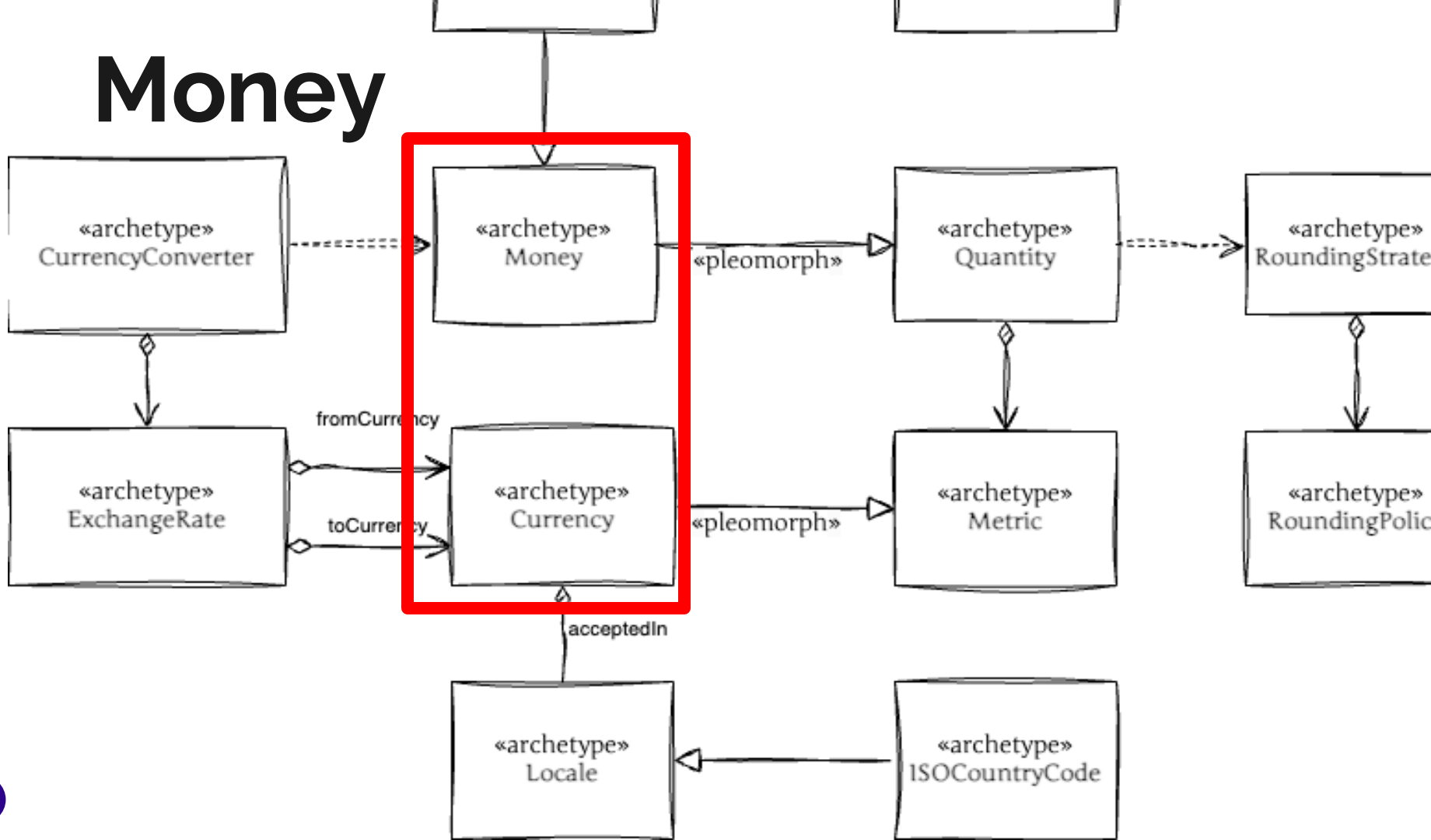
Money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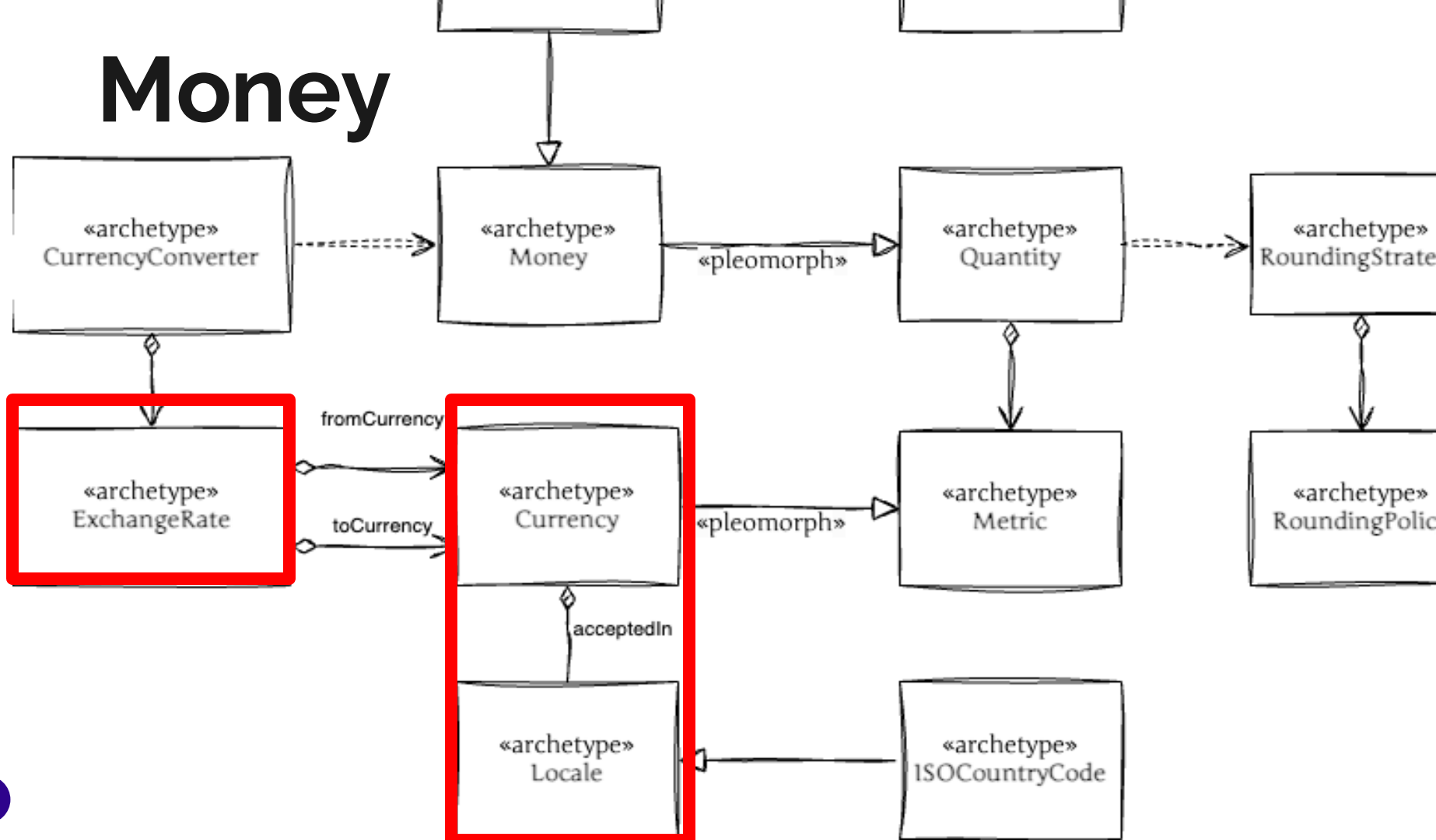
Money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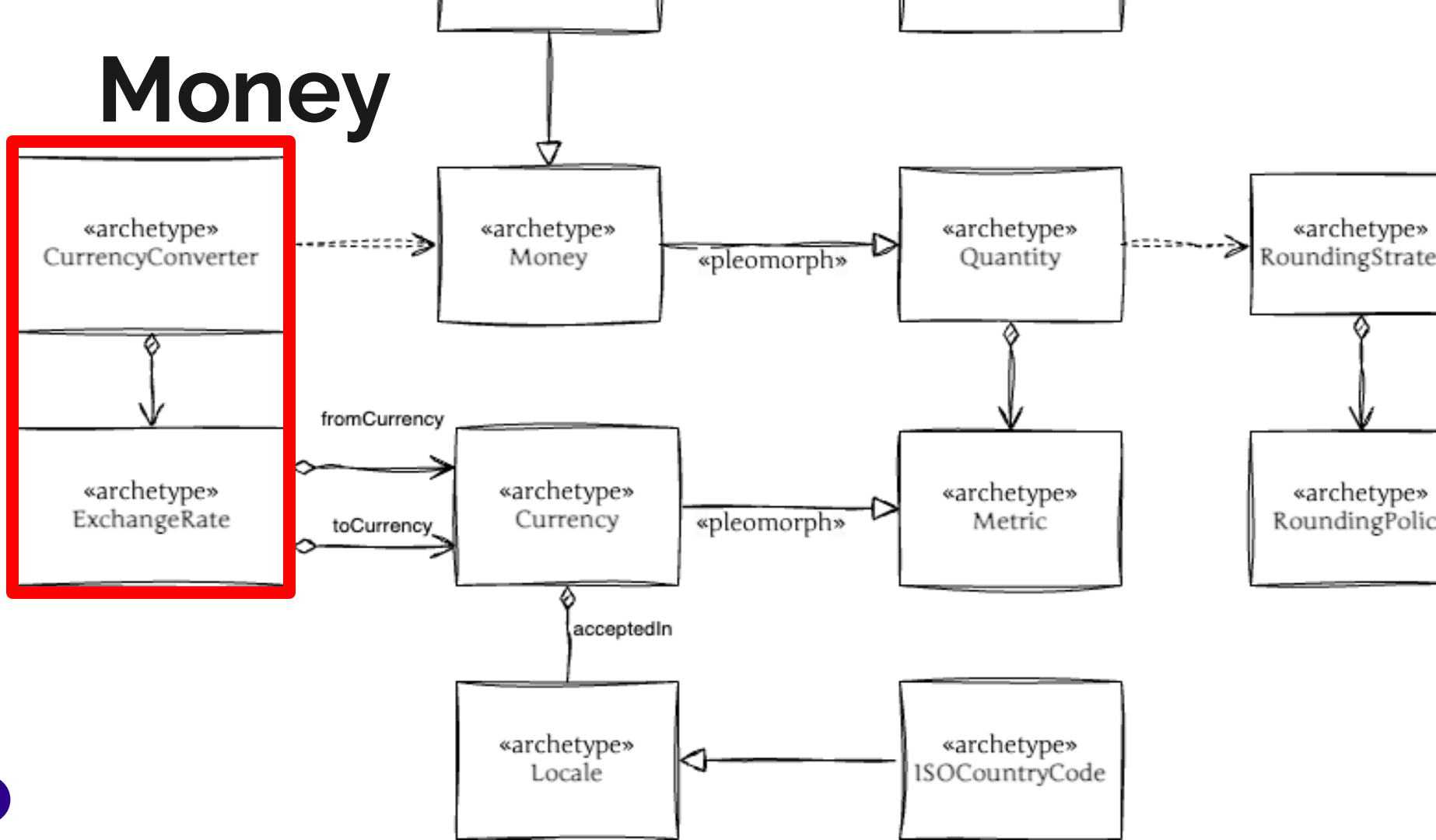
Money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«archetype»
ISOCountryCode

```php
public function testExchange(): void
{
    $converter = new CurrencyConverter();
    $exchangeRate1 = ExchangeRateFixtureFactory::getPLNtoEUR(
        rate: 0.3,
        validFrom: '2024-08-01',
        validTo: '2024-08-02'
    );

    $exchangeRate2 = ExchangeRateFixtureFactory::getPLNtoEUR(
        rate: 0.5,
        validFrom: '2024-08-02',
        validTo: '2024-08-03'
    );
    $converter->addExchangeRate($exchangeRate1)->addExchangeRate($exchangeRate2);
    $rate = $converter->getExchangeRateForDate(
        CurrencyFixtureFactory::getPLN(),
        CurrencyFixtureFactory::getEUR(),
        new DateTimeImmutable( datetime: '2024-08-02'),
    );

    $money = MoneyFixtureFactory::get( amount: 50, CurrencyFixtureFactory::getPLN());

    $convertedMoney = $converter->exchange($money, CurrencyFixtureFactory::getEUR(), $rate);


    $this->assertEquals( expected: 25, $convertedMoney->amount());
    $this->assertEquals( expected: 'EUR', $convertedMoney->currency()->alphaCode());
}
```

```php
public function testExchange(): void
{
    $converter = new CurrencyConverter();
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        rate: 0.3,
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    );

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        rate: 0.5,
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        validTo: '2024-08-03'
    );
    $this->assertEquals( expected: 'EUR', $convertedMoney->currency()->alphaCode());
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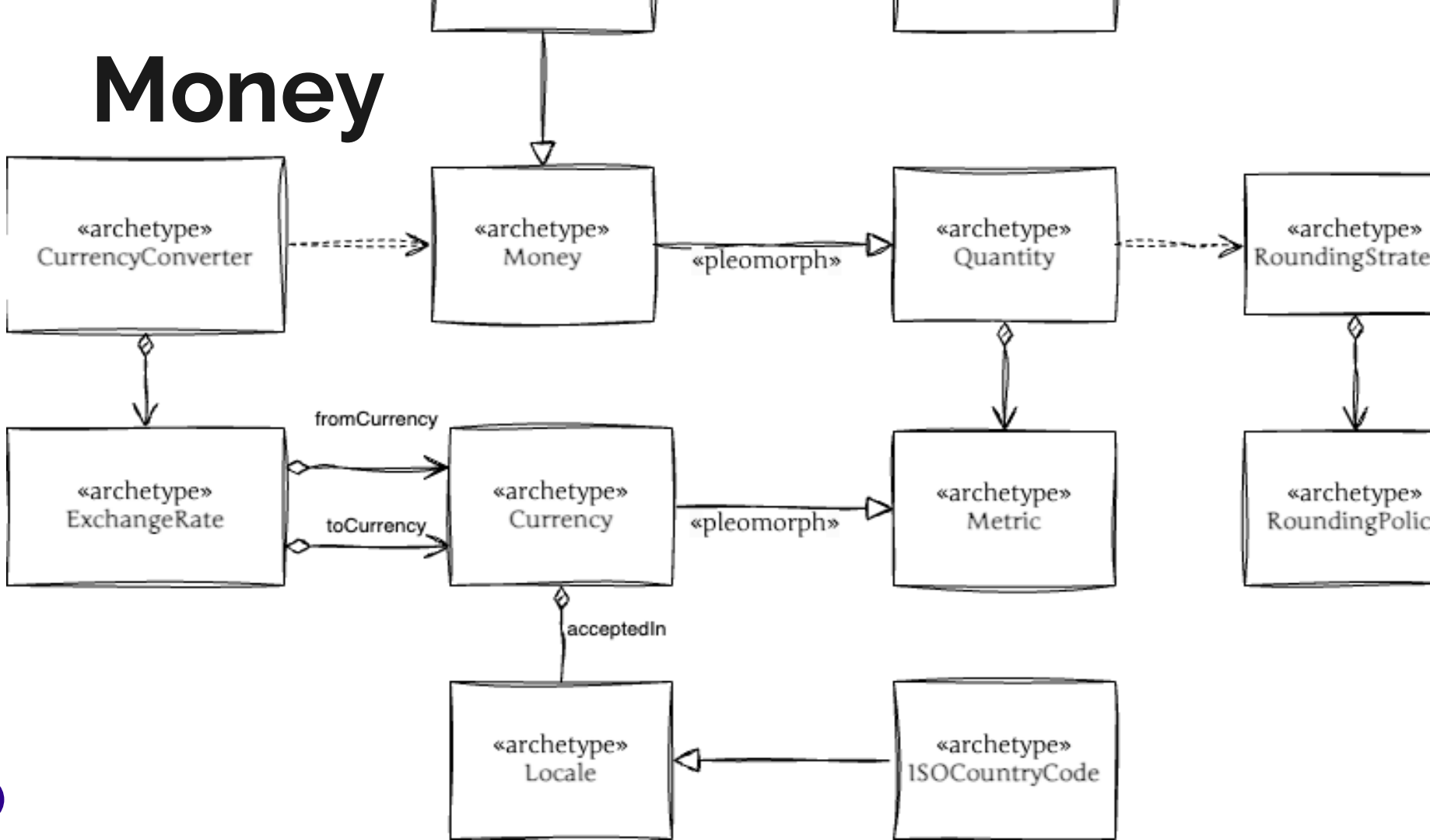
Money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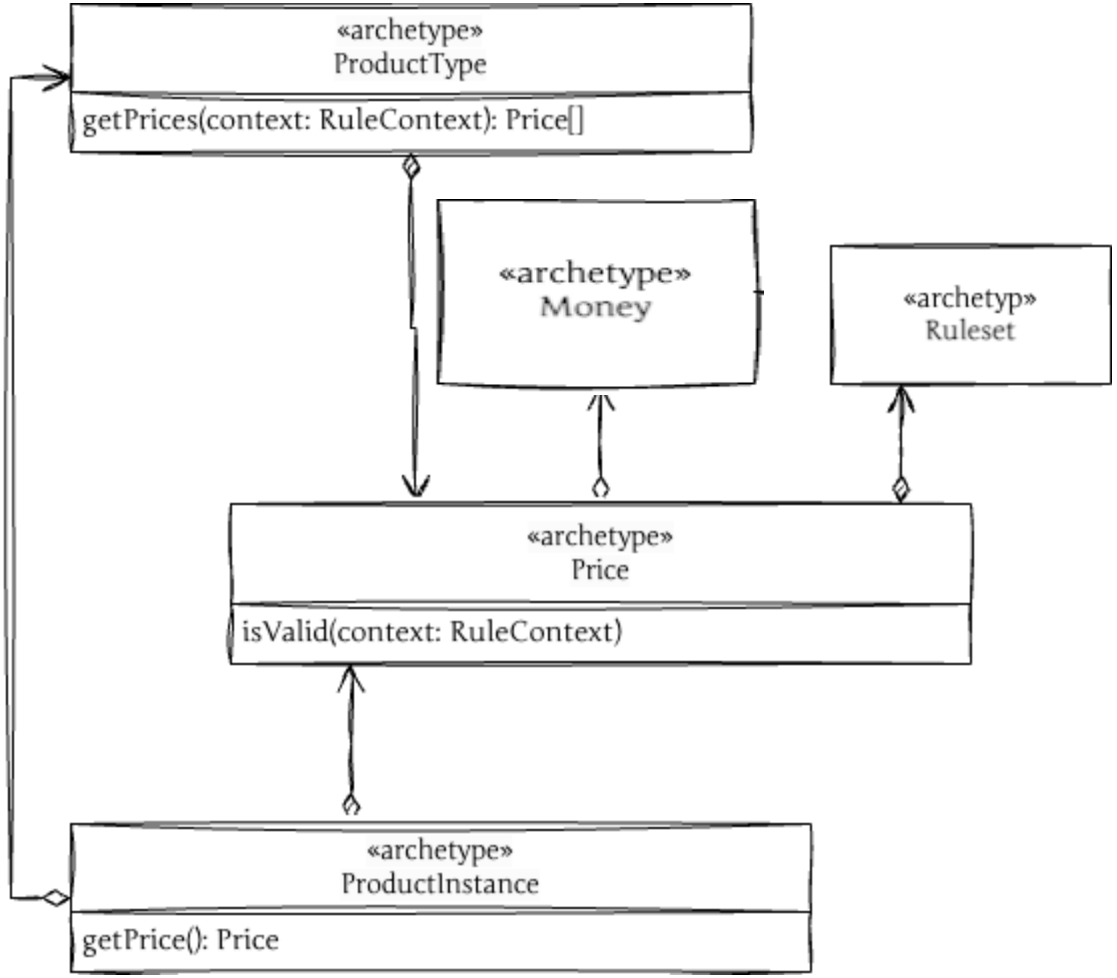
Price


«archetype»
ProductType
getPrices(context: RuleContext): Price[]
«archetype»
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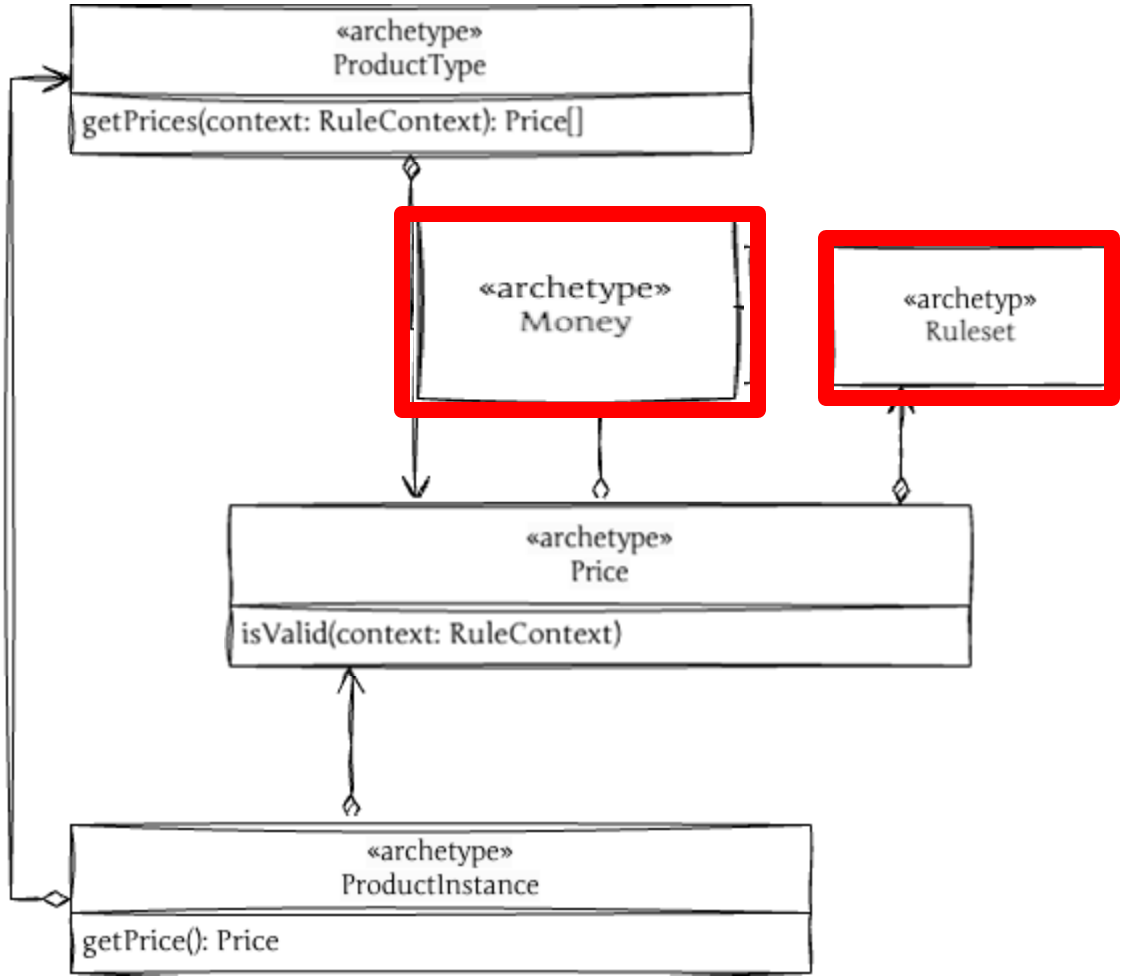
isValid(context: RuleContext)
«archetype»
ProductInstance
getPrice(): Price

Price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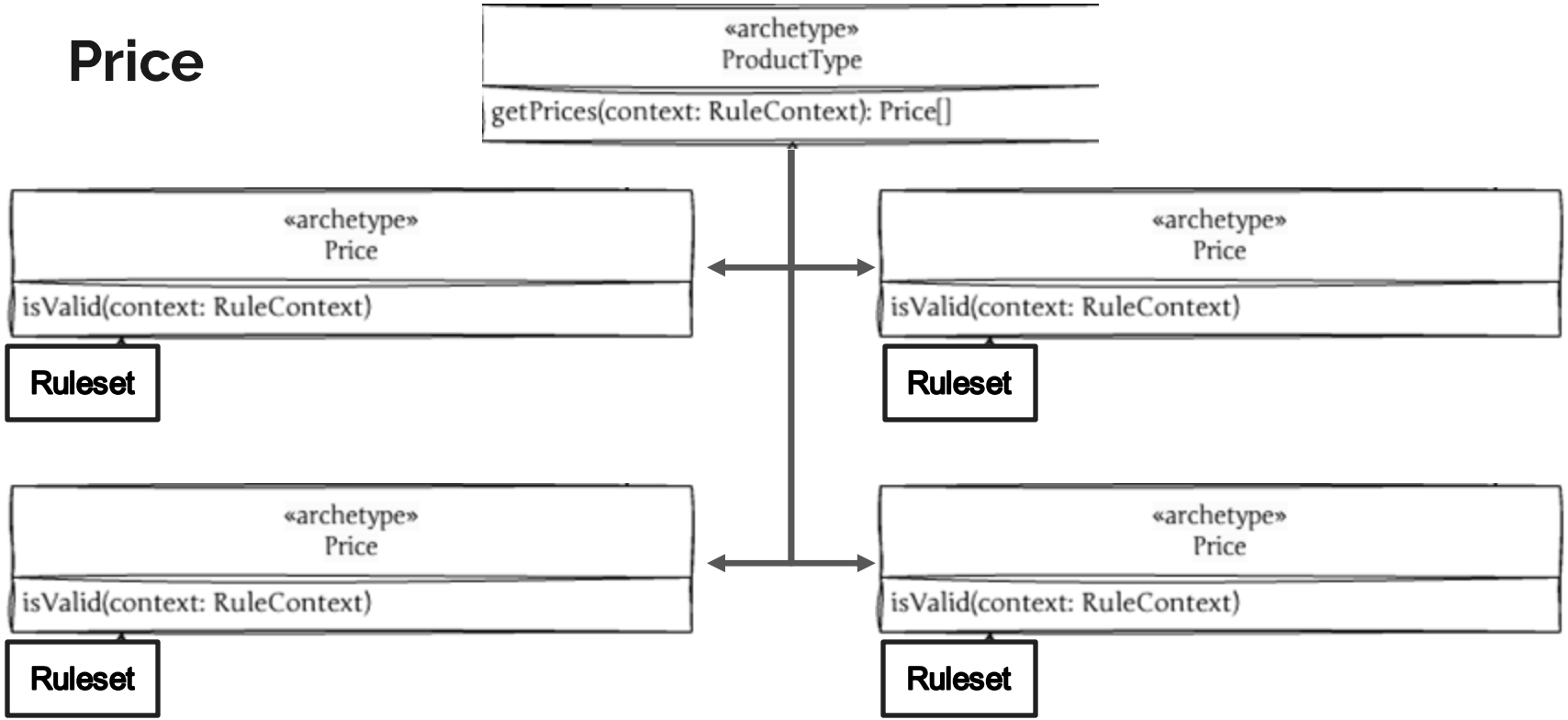
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Ruleset
«archetype»
Price
isValid(context: RuleContext)
Ruleset

```php
readonly class Price
{
    1 usage
    private Ruleset $ruleset;

    no usages   new *
    public function isApplicable(RuleContext $ruleContext): bool
    {
        return $this->ruleset->apply($ruleContext);
    }
}
```

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    {
        return $this->ruleset->apply($ruleContext);
    }
}
```

```php
class Product
{
    /** @var GenericList<Price> */
    private GenericList $prices;

    public function getPrice(RuleContext $context): Price
    {
        return $this->prices->filter(
            fn (Price $price) => $price->isApplicable($context)
        )->findFirst()->getOrElseThrow(
            new PriceNotFoundException( string: 'Can not find valid price.')
        );
    }
}
```

```php
class PurchaseOrder
{
    no usages   new *
    public function addItem(
        Product $product,
        UnsignedQuantity $quantity,
        \DateTimeImmutable $requestedAt
    ): void
    {
        $this->items->add(
            new OrderLineItem($product, $product->getPrice(
                Pricing::createRuleContext($product, $quantity, $this->location)), $quantity
            )
        );
    }
}
```

```php
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{
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    public function addItem(
        Product $product,
        UnsignedQuantity $quantity,
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    {
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    ): void
    {
        $this->items->add(
            new OrderLineItem($product, $product->getPrice(
                Pricing::createRuleContext($product, $quantity, $this->location)), $quantity
            )
        );
    }
}
```

```php
class Pricing
{
    2 usages  new *
    public static function createRuleContext(
        Product $product,
        UnsignedQuantity $quantity,
        CountryCode $location
    ): RuleContext {
        $elements = [
            new Variable('productCategory', $product->getCategory()),
            new Variable('quantity', $quantity->getValue()),
            new Variable('location', $location),
            new Proposition('seasonalPromotion', fn() => self::isSeasonalPromotionActive())
        ];

        return new RuleContext($elements);
    }
}
```

Ceny uzależnione od różnych czynników

Money & Price

Produkt może posiadać wiele cen

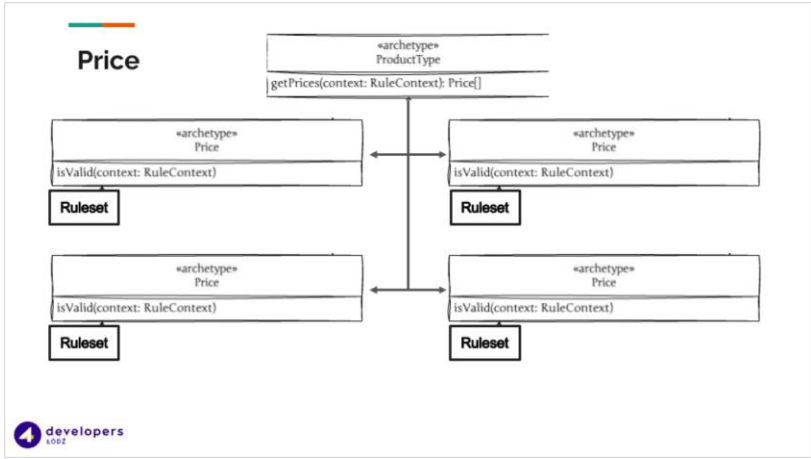
Wybór odpowiedniej ceny jest uzależniony od różnych **zmiennych** czynników

Możliwość implementacji przelicznika walut

Ceny uzależnione od różnych czynników

Money & Price

Produkt może posiadać wiele cen




```php
class Product
{
    /** @var GenericList<Price> */
    private GenericList $prices;

    public function getPrice(RuleContext $context): Price
    {
        return $this->prices->filter(
            fn (Price $price) => $price->isApplicable($context)
        )->findFirst()->getOrElseThrow(
            new PriceNotFoundException( string: 'Can not find valid price.')
        );
    }
}
```

developers ŁÓDŹ

Wybór odpowiedniej ceny jest uzależniony od różnych **zmiennych** czynników

Możliwość implementacji przelicznika walut

Ceny uzależnione od różnych czynników

Money & Price

Wybór odpowiedniej ceny jest uzależniony od różnych **zmiennych** czynników

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readonly class Price
{
    1 usage
    private Ruleset $ruleset;

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    public function isApplicable(RuleContext $ruleContext): bool
    {
        return $this->ruleset->apply($ruleContext);
    }
}
```

developers ŁÓDŹ

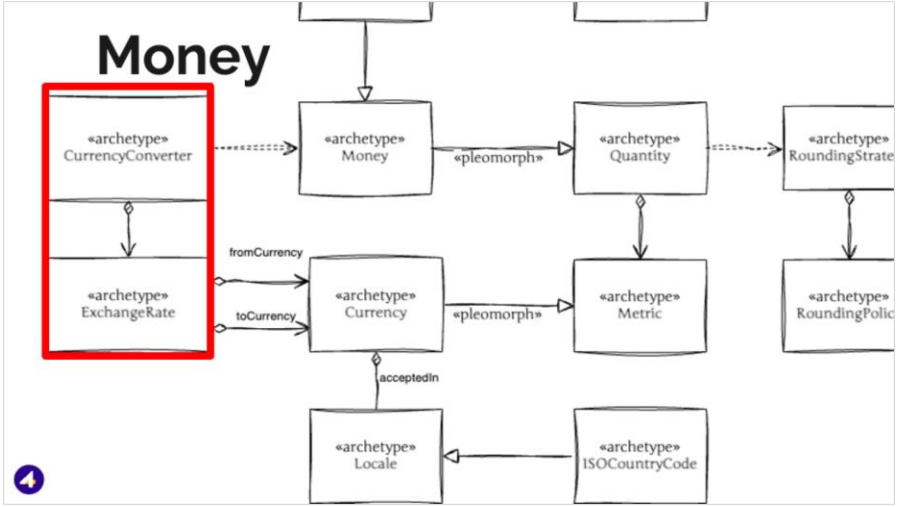
Produkt może posiadać wiele cen

Możliwość implementacji przelicznika walut

Ceny uzależnione od różnych czynników

Money & Price

Możliwość implementacji przelicznika walut



Produkt może posiadać wiele cen

Wybór odpowiedniej ceny jest uzależniony od różnych **zmiennych** czynników

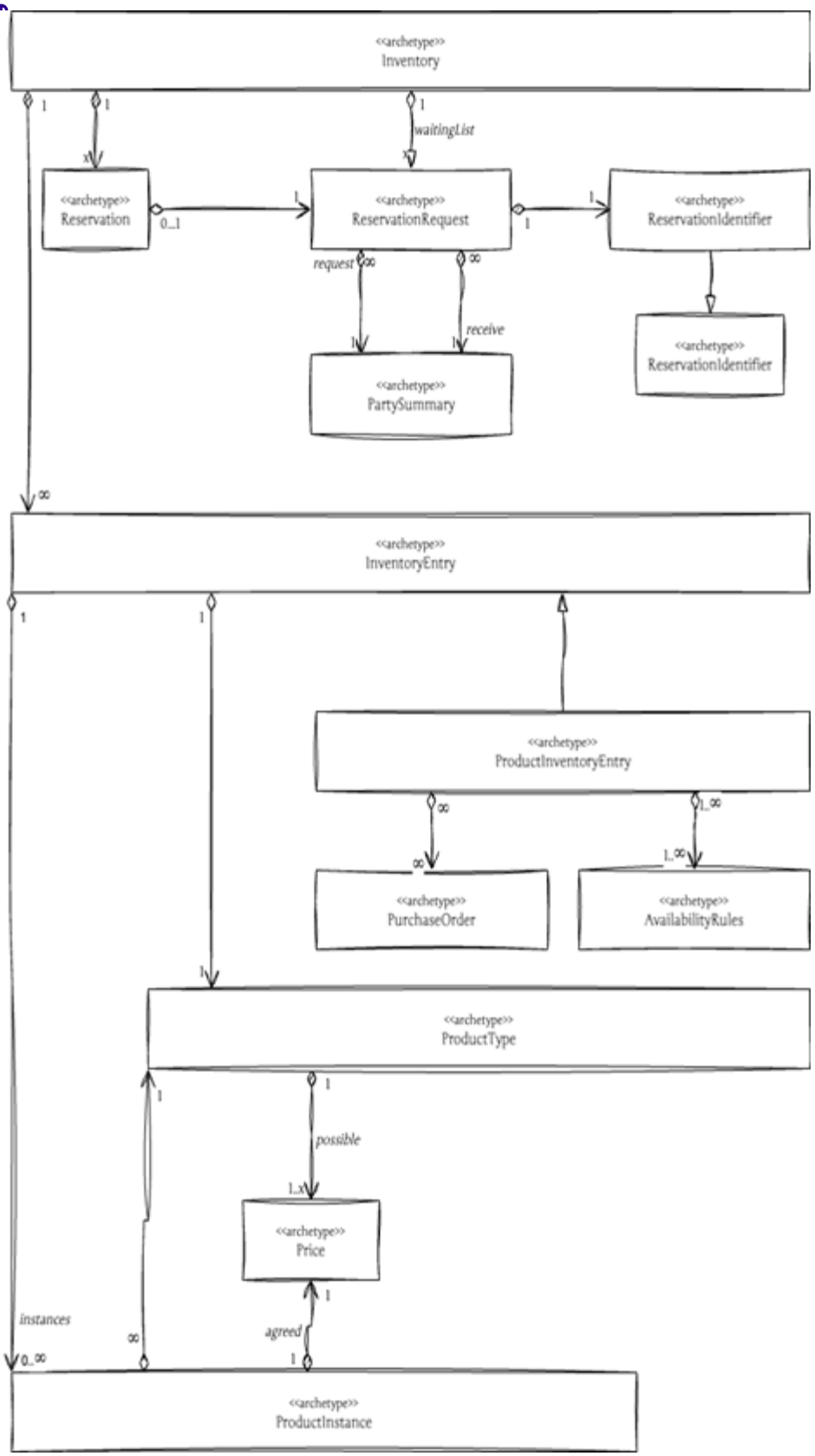
Rozbudowa systemu magazynowego

Inventory
Inventory*

Rozbudowa systemu magazynowego

Inventory
Inventory*

- Dostępność produktu zależy od różnych czynników
- Możliwość śledzenia historii inwentarzu
- Jeden typ produktu może być przechowywany w różnych magazynach.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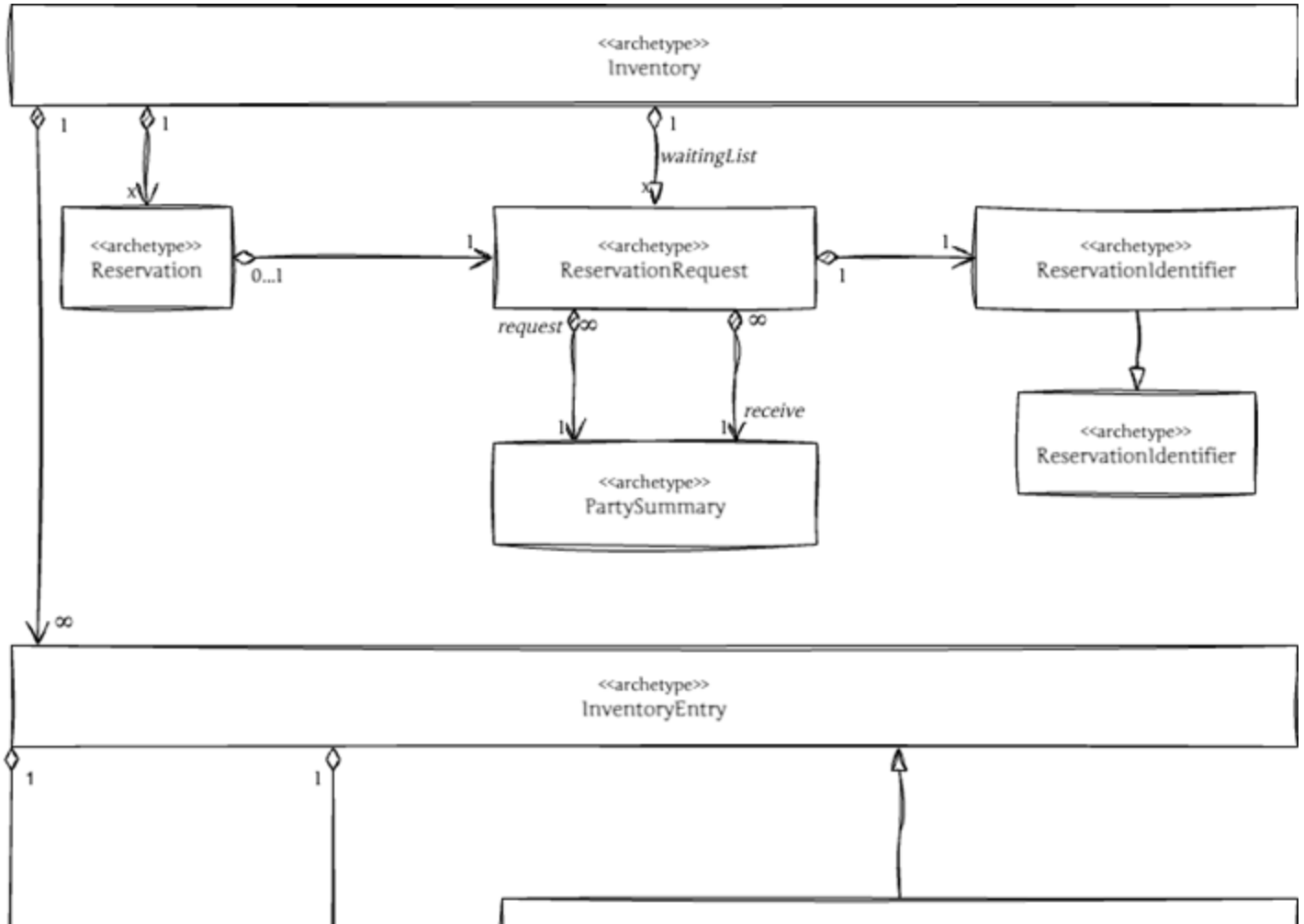

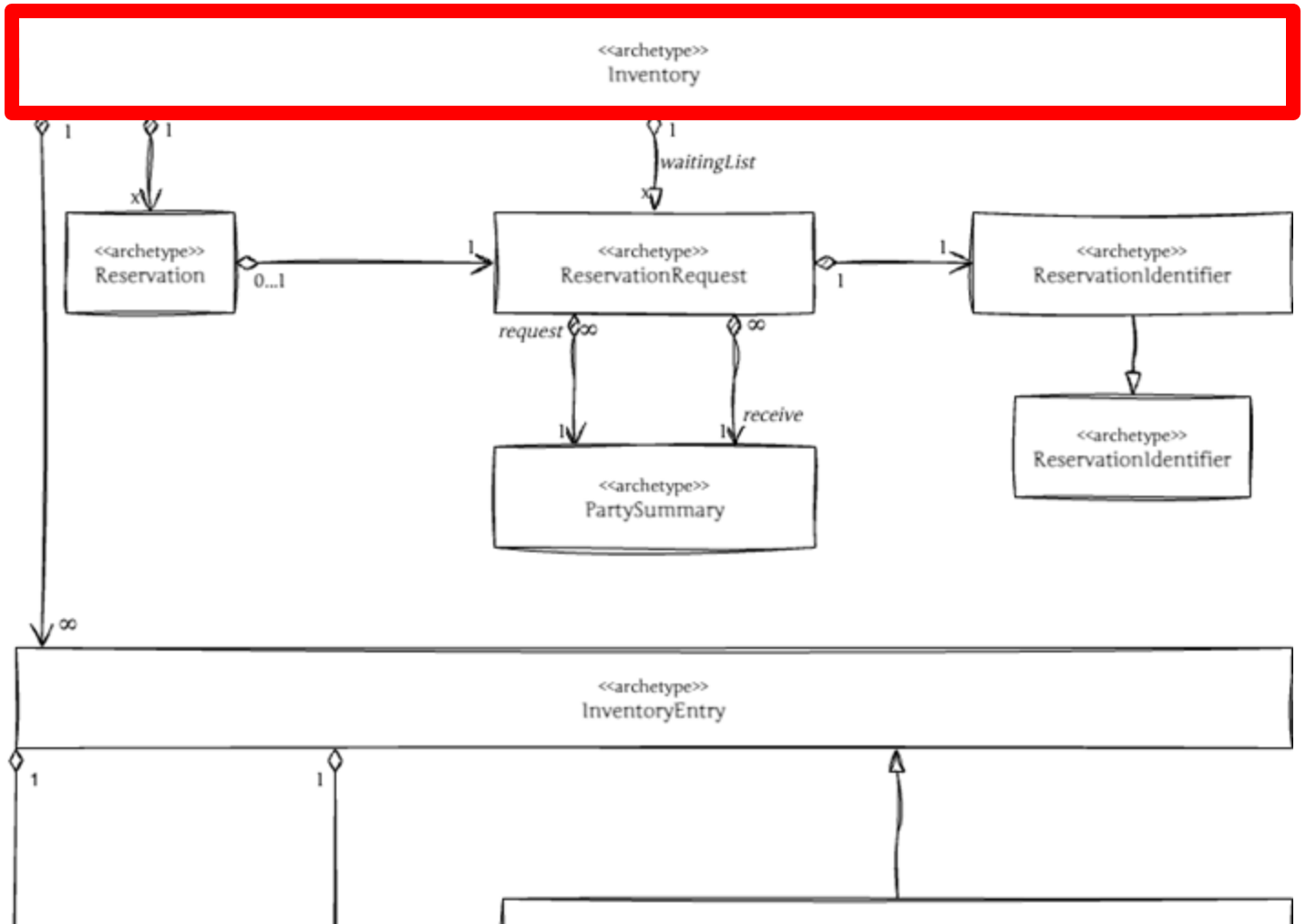
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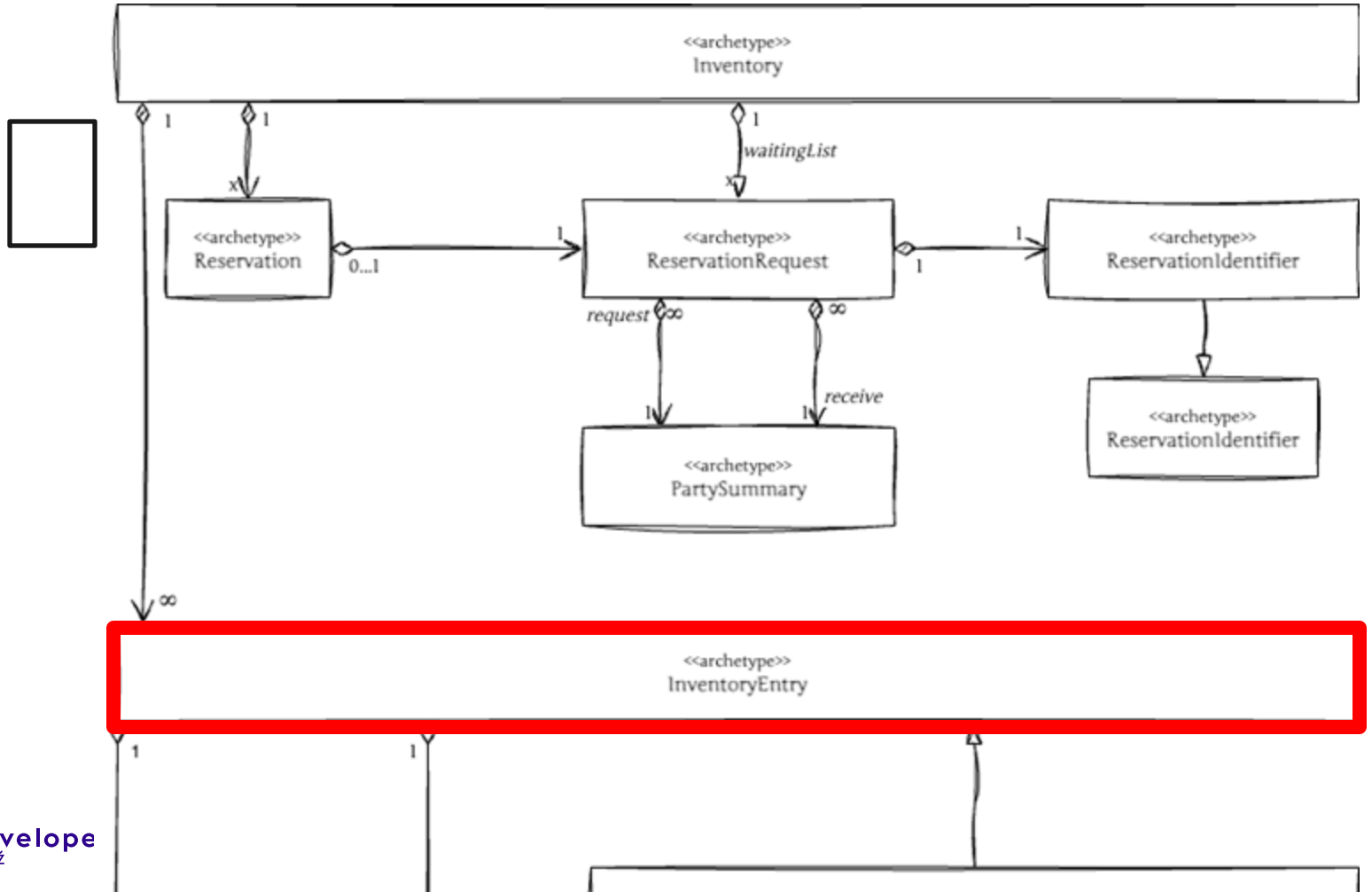
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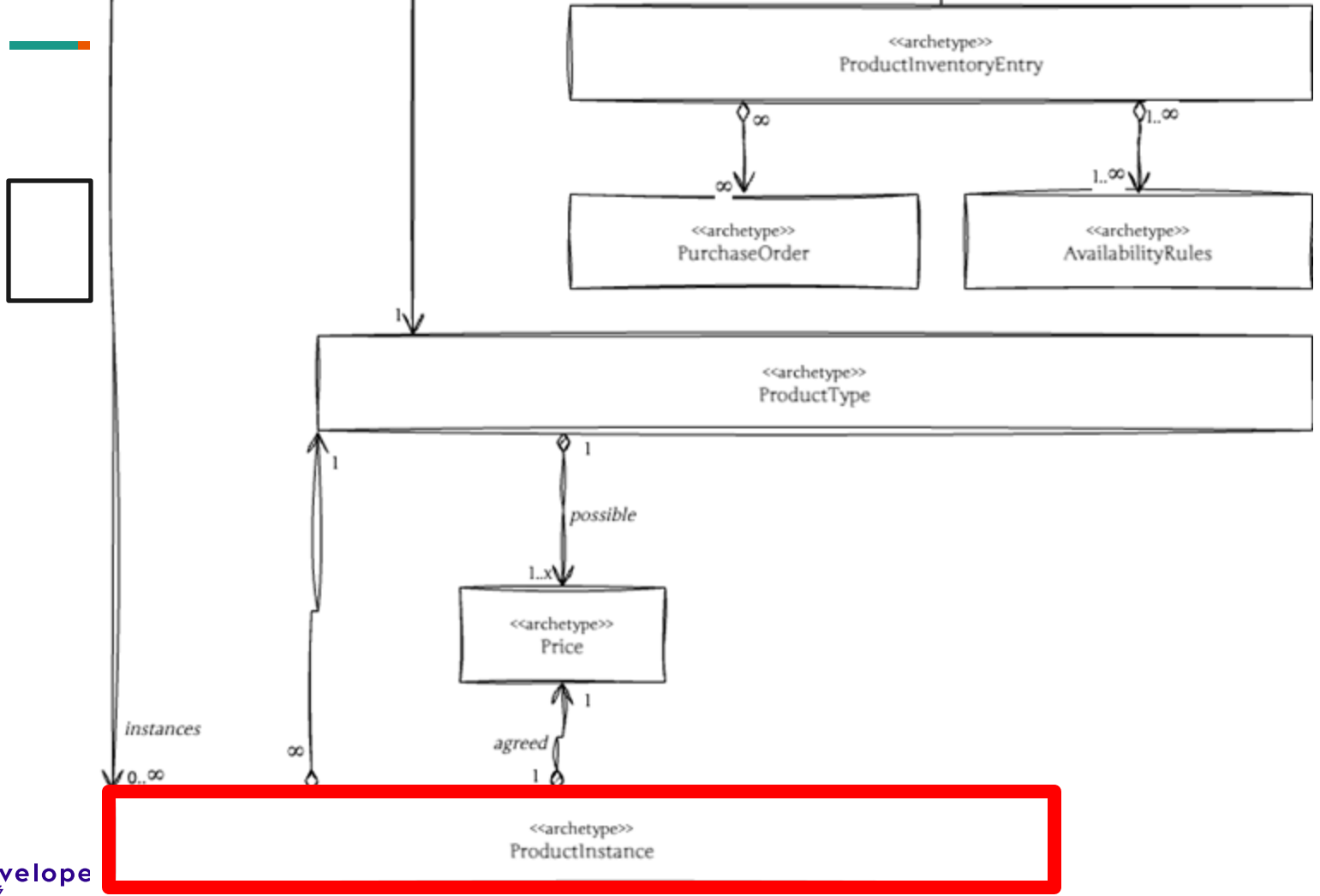
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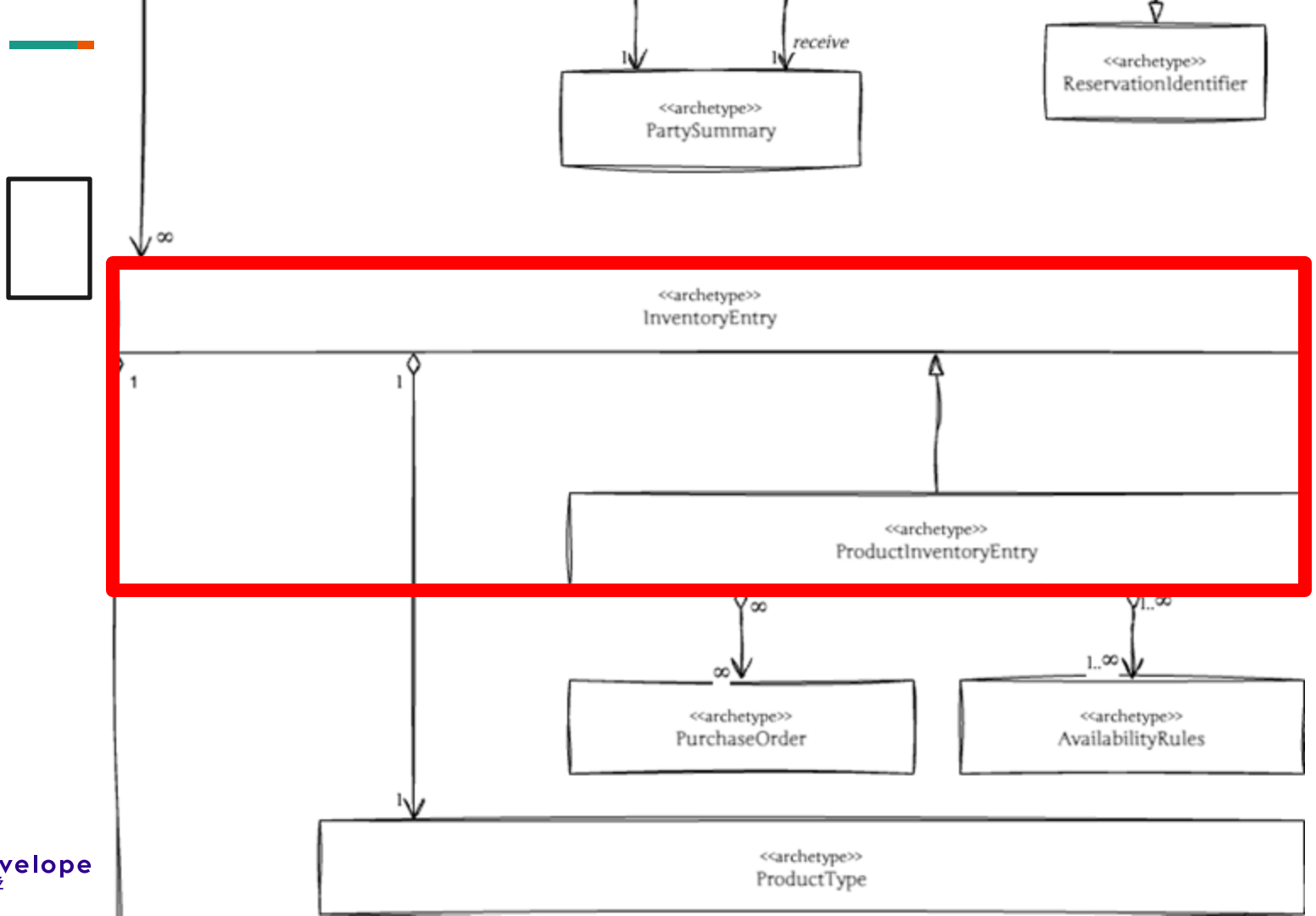

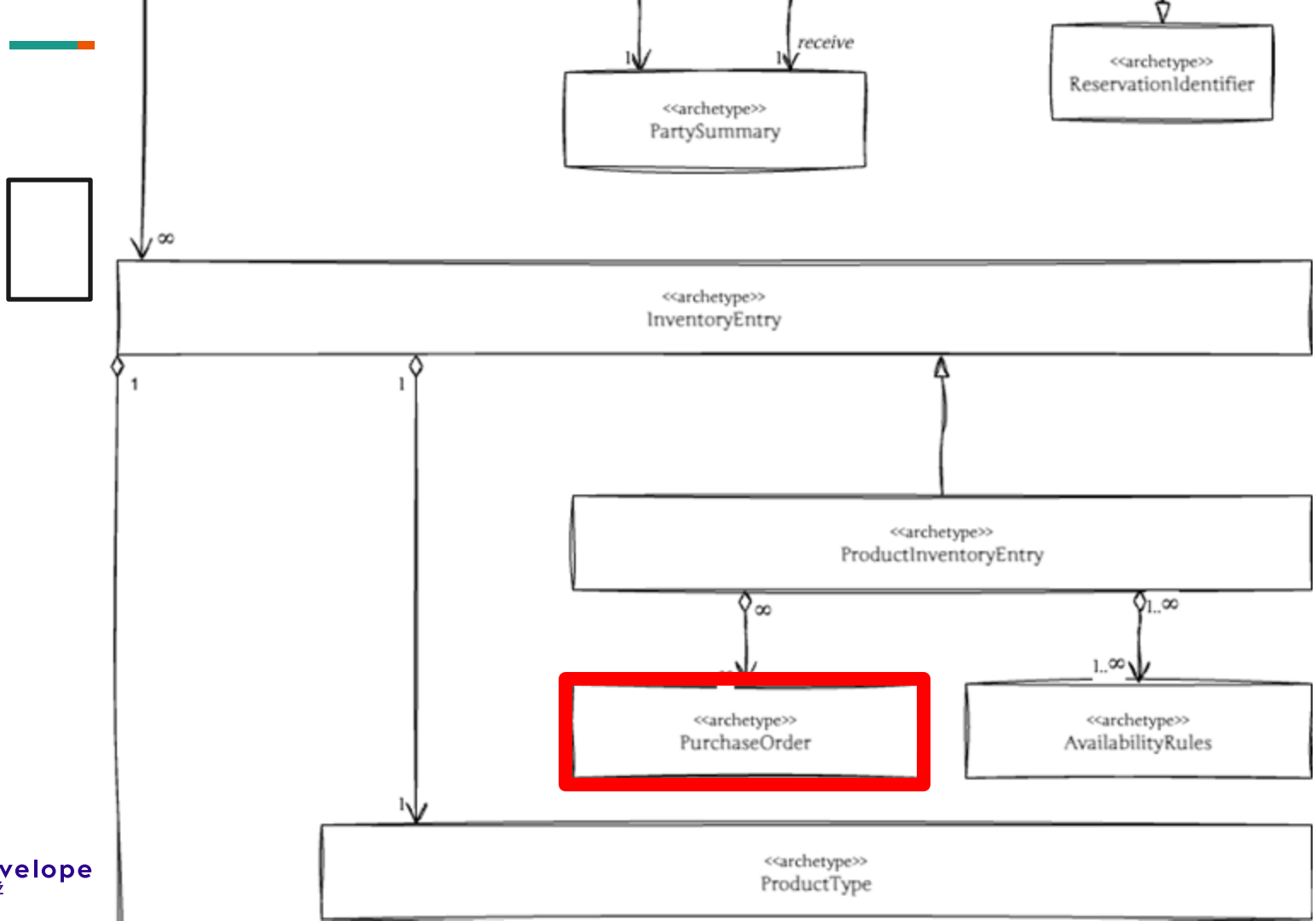

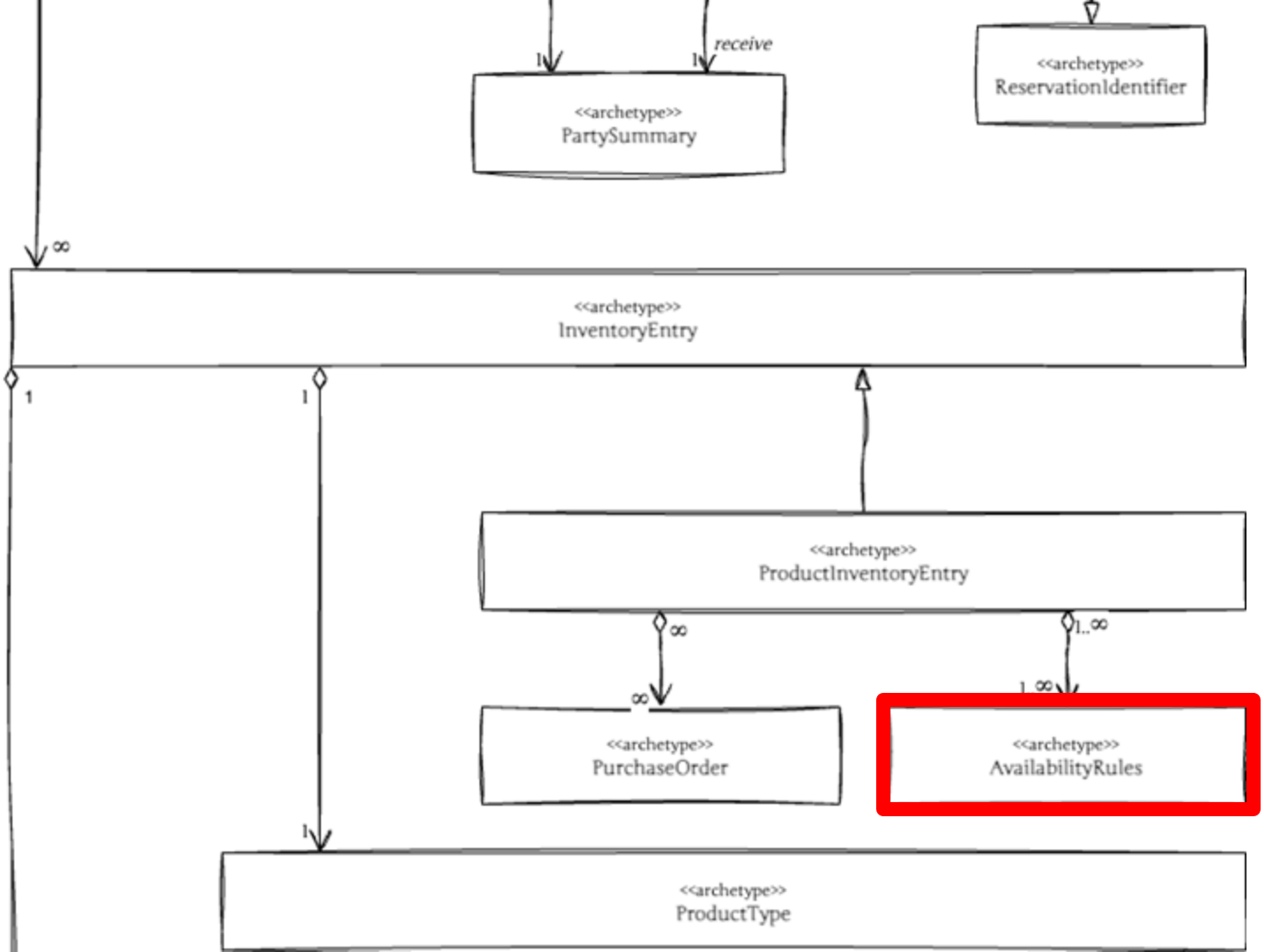

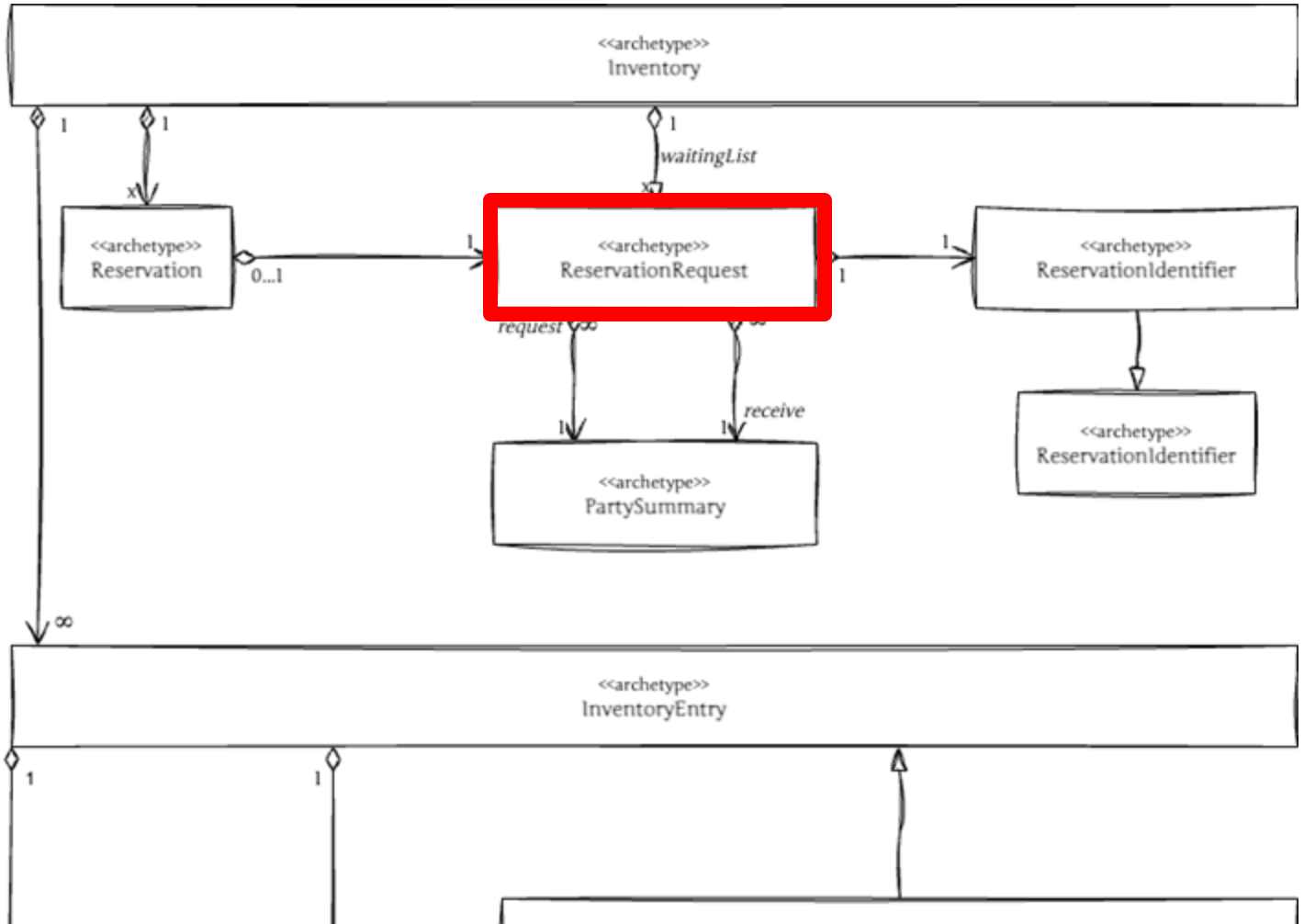
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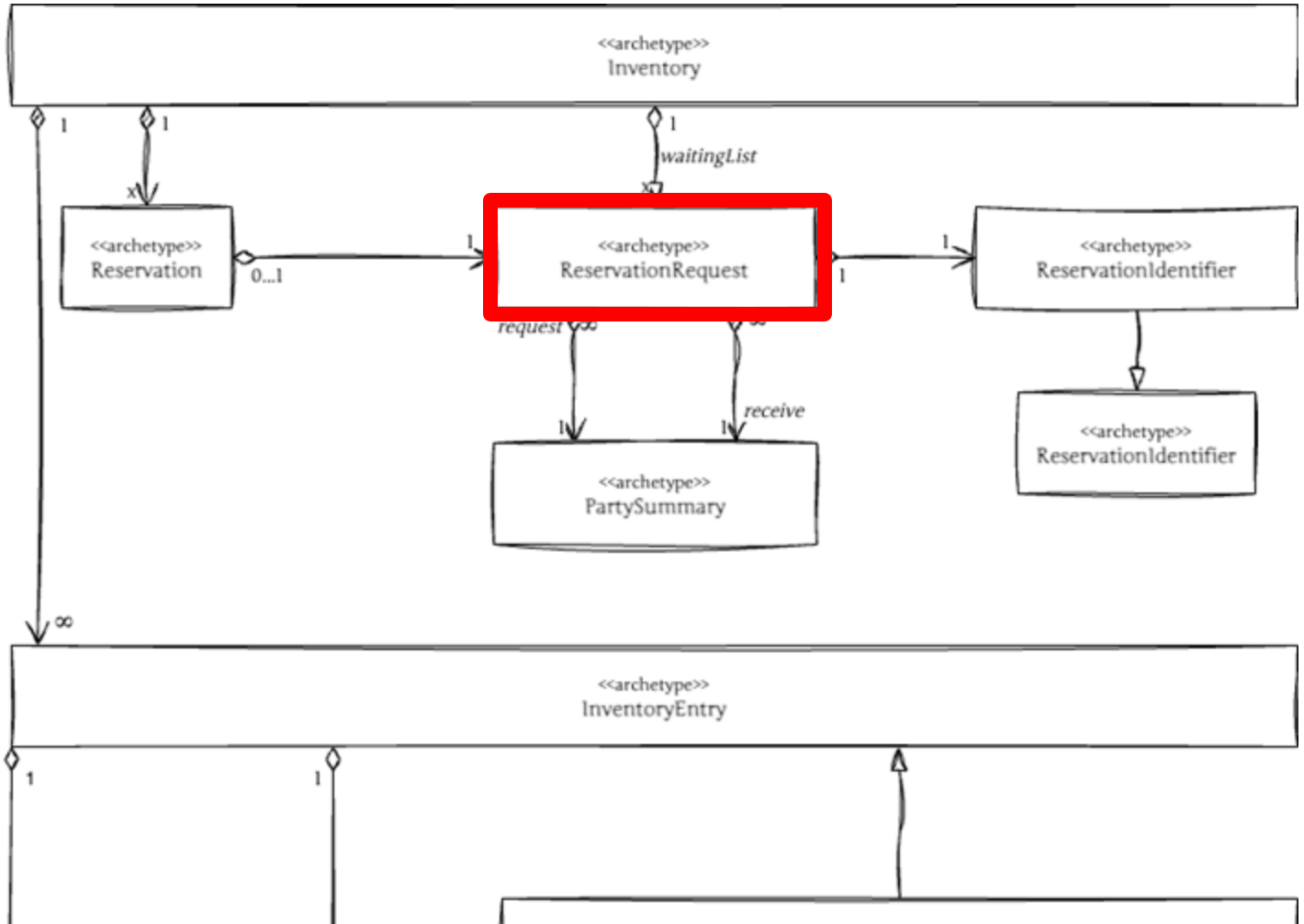
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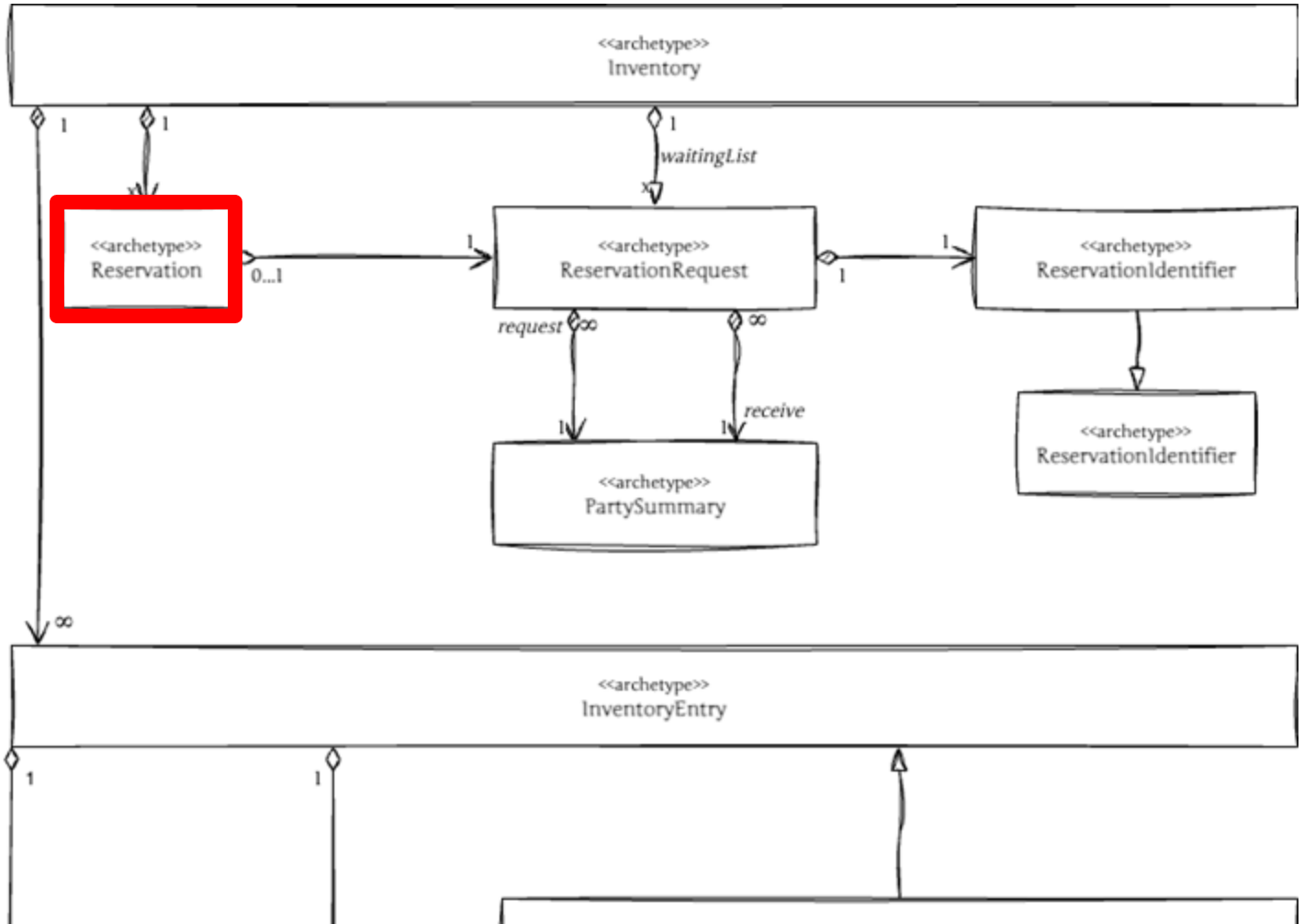


Rozbudowa systemu magazynowego

Inventory

Dostępność produktu zależy od różnych czynników.

Możliwość śledzenia historii inwentarzu

Jeden typ produktu może być przechowywany w różnych magazynach.

Rozbudowa systemu magazynowego

Inventory

Dostępność produktu zależy od różnych czynników.

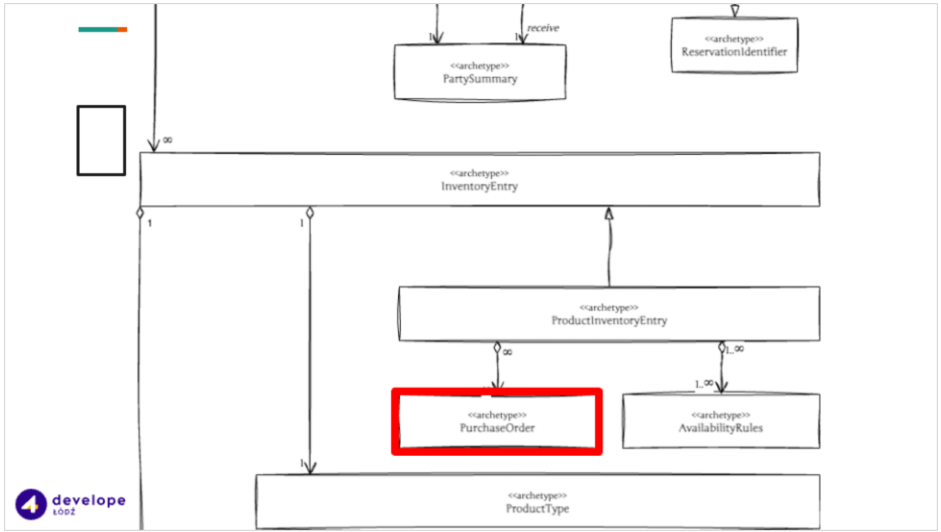
Możliwość śledzenia historii inwentarzu

Jeden typ produktu może być przechowywany w różnych magazynach.

Rozbudowa systemu magazynowego

Inventory

Możliwość śledzenia historii inwentarzu



Jeden typ produktu może być przechowywany w różnych magazynach.

Dostępność produktu zależy od różnych czynników.

developers
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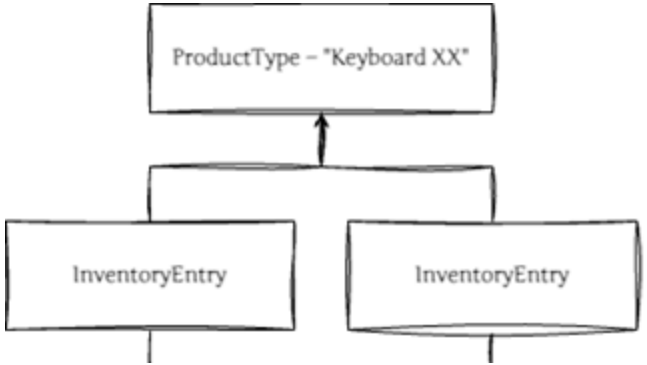
Rozbudowa systemu magazynowego

Inventory

Jeden typ produktu może być przechowywany w różnych magazynach.

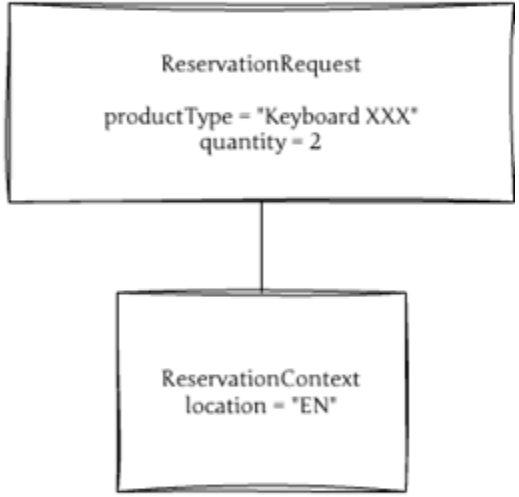
Dostępność produktu zależy od różnych czynników.

Możliwość śledzenia historii inwentarzu


ProductType – "Keyboard XX"
InventoryEntry
InventoryEntry


ReservationRequest


ProductType – "Keyboard XX"
InventoryEntry
InventoryEntry
AvailabilityRules
stock > 0
location = "PL"
AvailabilityRules
stock > 0
location = "EN"
InventoryEntry
InventoryEntry
ProductType – "Mouse XX"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ReservationContext
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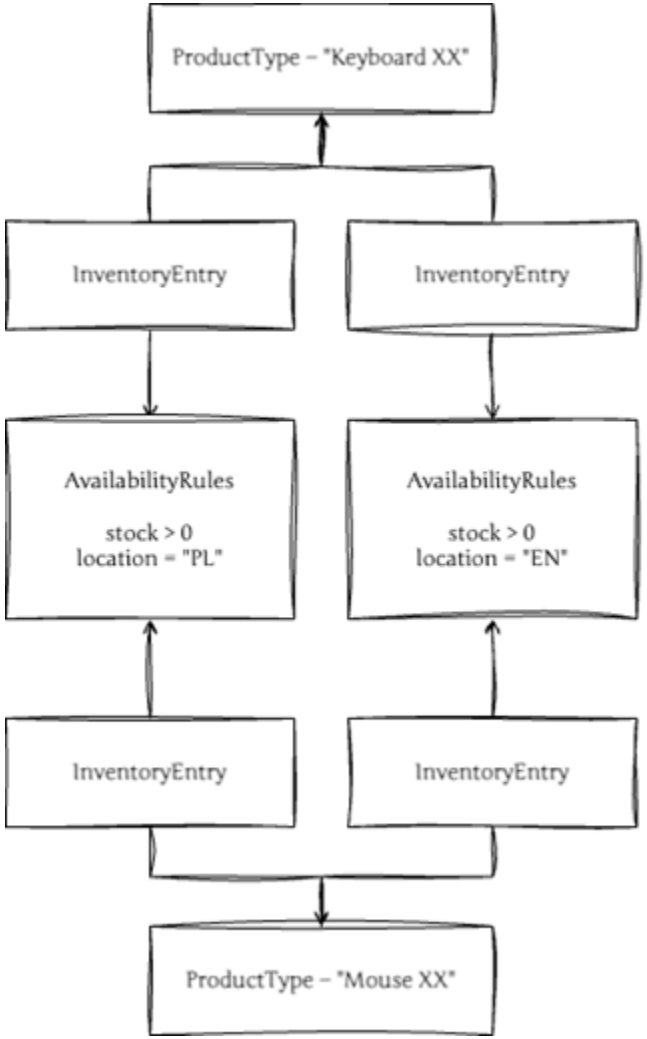
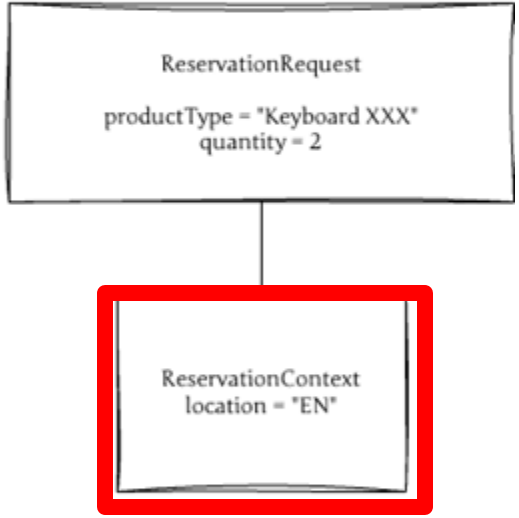

ProductType – "Keyboard XX"
InventoryEntry
InventoryEntry
AvailabilityRules
stock > 0
location = "PL"
AvailabilityRules
stock > 0
location = "EN"
InventoryEntry
InventoryEntry
ProductType – "Mouse XX"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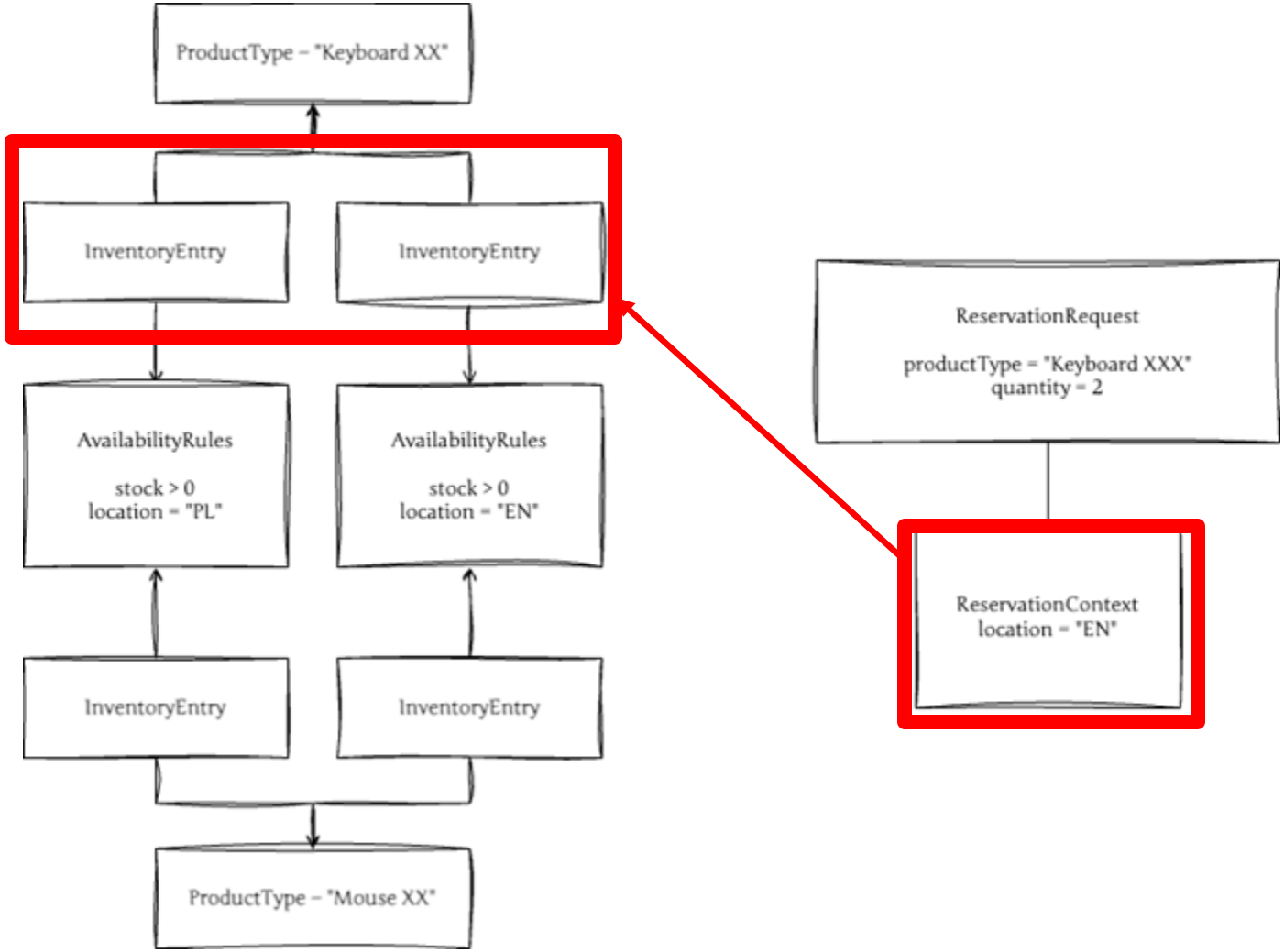
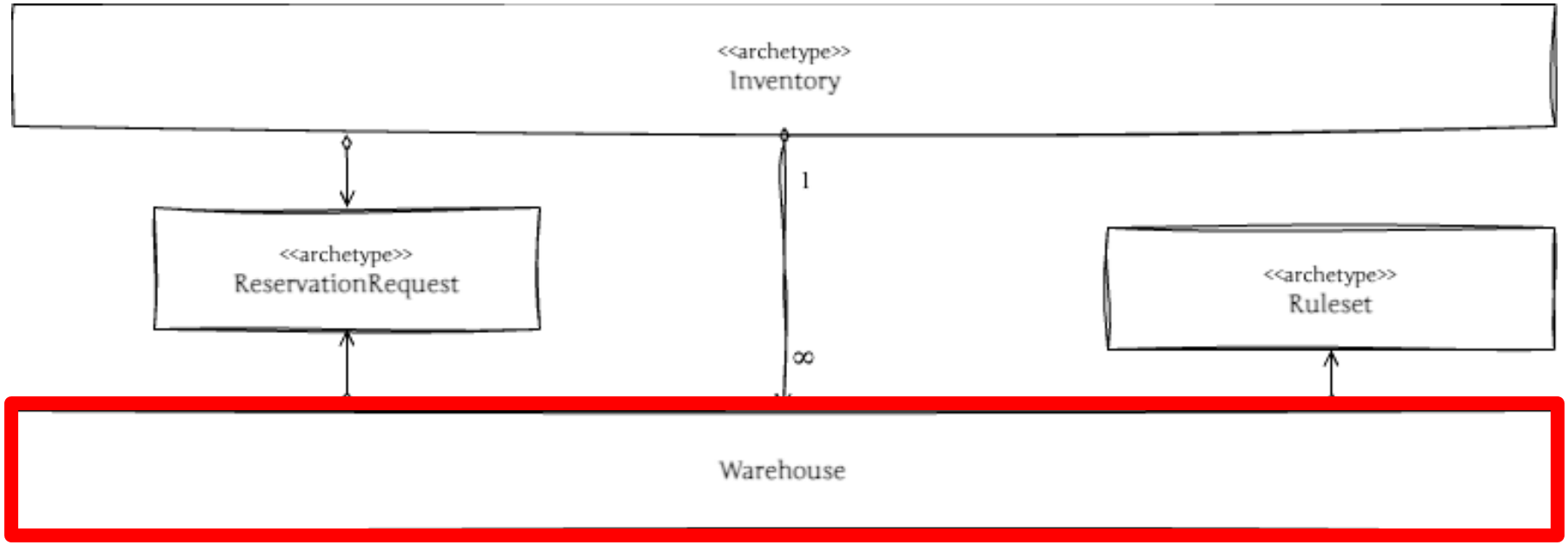
productType = "Keyboard XXX"
quantity = 2
ReservationContext
location = "EN"


ProductType – "Keyboard XX"
InventoryEntry
InventoryEntry
AvailabilityRules
stock > 0
location = "PL"
AvailabilityRules
stock > 0
location = "EN"
InventoryEntry
InventoryEntry
ProductType – "Mouse XX"
ReservationRequest
productType = "Keyboard XXX"
quantity = 2
ReservationContext
location = "EN"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ReservationRequest
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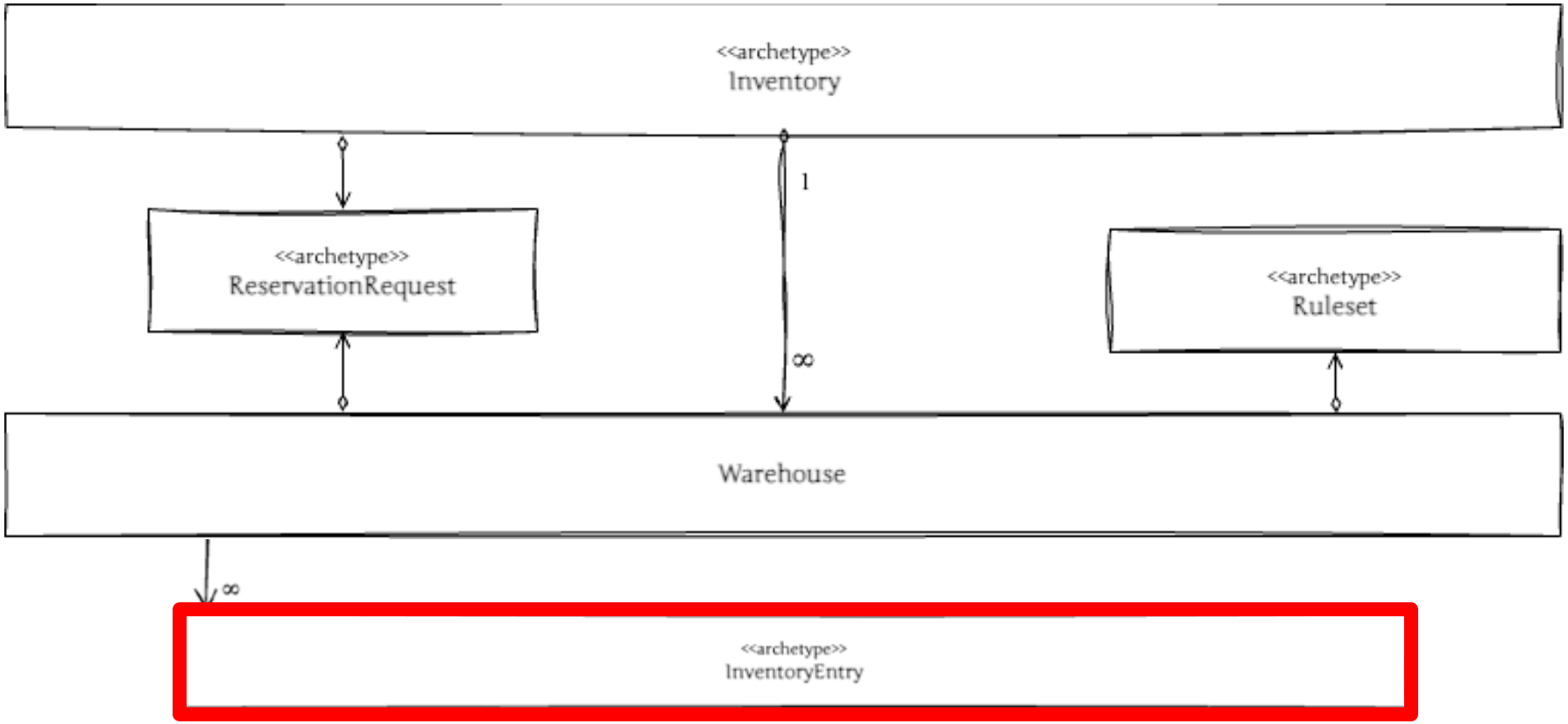
Ruleset
Warehouse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Warehouse
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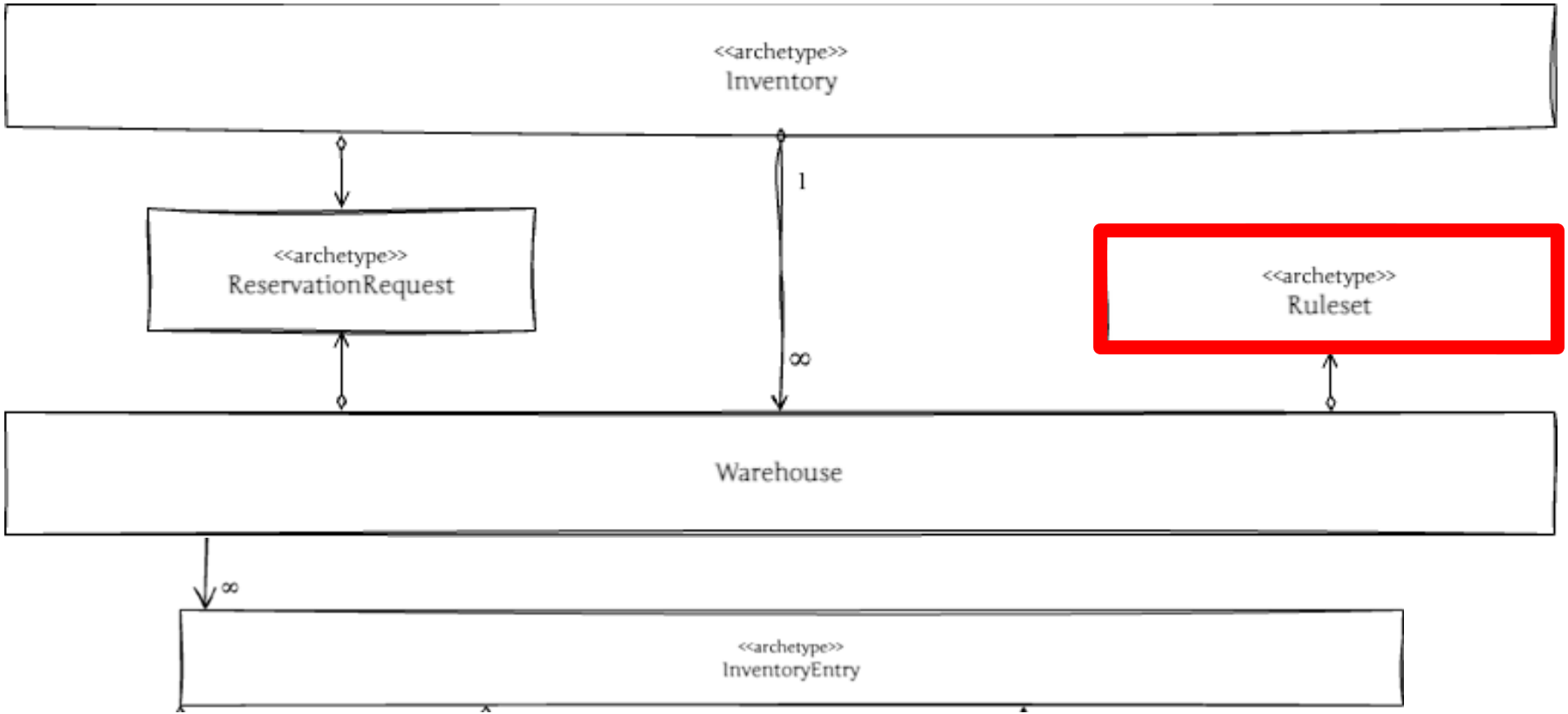
InventoryEntry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ReservationRequest
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Ruleset
∞
Warehouse
∞
<<archetype>>
InventoryEntry

```php
readonly class Inventory
{
    new *
    public function __construct(private GenericList $warehouses)
    {
    }

    /**
     * @return Either<ReservationRejected, ReservationAccepted>
     */
    4 usages  new *
    public function makeReservation(ReservationRequest $request): Either
    {
        $warehouseOption = $this->warehouses->find(fn(Warehouse $warehouse) => $warehouse->canHandleRequest($request));

        return $warehouseOption->map(fn(Warehouse $warehouse) => $warehouse->makeReservation($request))
            ->getOrElse(Either::left(new ReservationRejected( reason: 'No warehouse can handle the request')));
    }
}
```

```php
readonly class Inventory
{
    new *
    public function __construct(private GenericList $warehouses)
    {
    }

    /**
     * @return Either<ReservationRejected, ReservationAccepted>
     */
    4 usages  new *
    public function makeReservation(ReservationRequest $request): Either
    {
        $warehouseOption = $this->warehouses->find(fn(Warehouse $warehouse) => $warehouse->canHandleRequest($request));

        return $warehouseOption->map(fn(Warehouse $warehouse) => $warehouse->makeReservation($request))
            ->getOrElse(Either::left(new ReservationRejected( reason: 'No warehouse can handle the request')));
    }
}
```

```php
class Warehouse
{
    /**
     * @param GenericList<InventoryEntry> $entries
     */
    5 usages  new *
    public function __construct(
        private readonly GenericList $entries,
        private Ruleset $handlingRules
    ) {}

    1 usage  new *
    public function canHandleRequest(ReservationRequest $request): bool
    {
        return $this->handlingRules->evaluate($request->reservationContext())->getValue();

    }

    2 usages  new *
    public function makeReservation(ReservationRequest $request): Either
    {
        return $this->entries->fold(
            Either::left(new ReservationRejected( reason: 'No products available')),
            fn(Either $either, InventoryEntry $entry) => $either->map(fn() => $either)->getOrElse($entry->makeReservation($request))

        );
    }
}
```

```php
class Warehouse
{
    /**
     * @param GenericList<InventoryEntry> $entries
     */
    5 usages  new *
    public function __construct(
        private readonly GenericList $entries,
        private Ruleset $handlingRules
    ) {}

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    public function canHandleRequest(ReservationRequest $request): bool
    {
        return $this->handlingRules->evaluate($request->reservationContext())->getValue();

    }

    2 usages  new *
    public function makeReservation(ReservationRequest $request): Either
    {
        return $this->entries->fold(
            Either::left(new ReservationRejected( reason: 'No products available')),
            fn(Either $either, InventoryEntry $entry) => $either->map(fn() => $either)->getOrElse($entry->makeReservation($request))

        );
    }
}
```
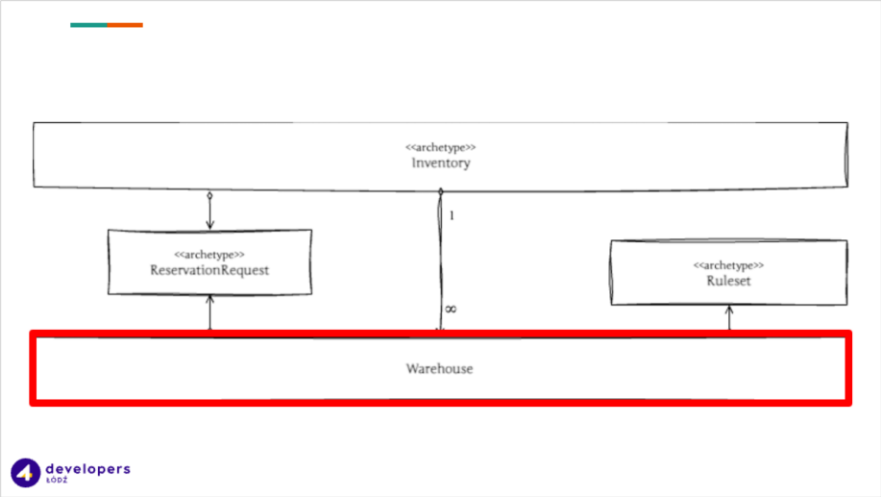

Rozbudowa systemu magazynowego

Inventory

Jeden typ produktu może być przechowywany w różnych magazynach.

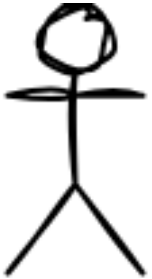


Dostępność produktu zależy od różnych czynników.

Możliwość śledzenia historii inwentarzu

Zarządzanie rolami

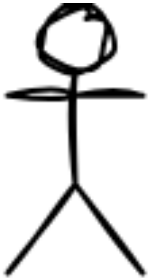
Party
PartyRelationship



Researcher

Reviever

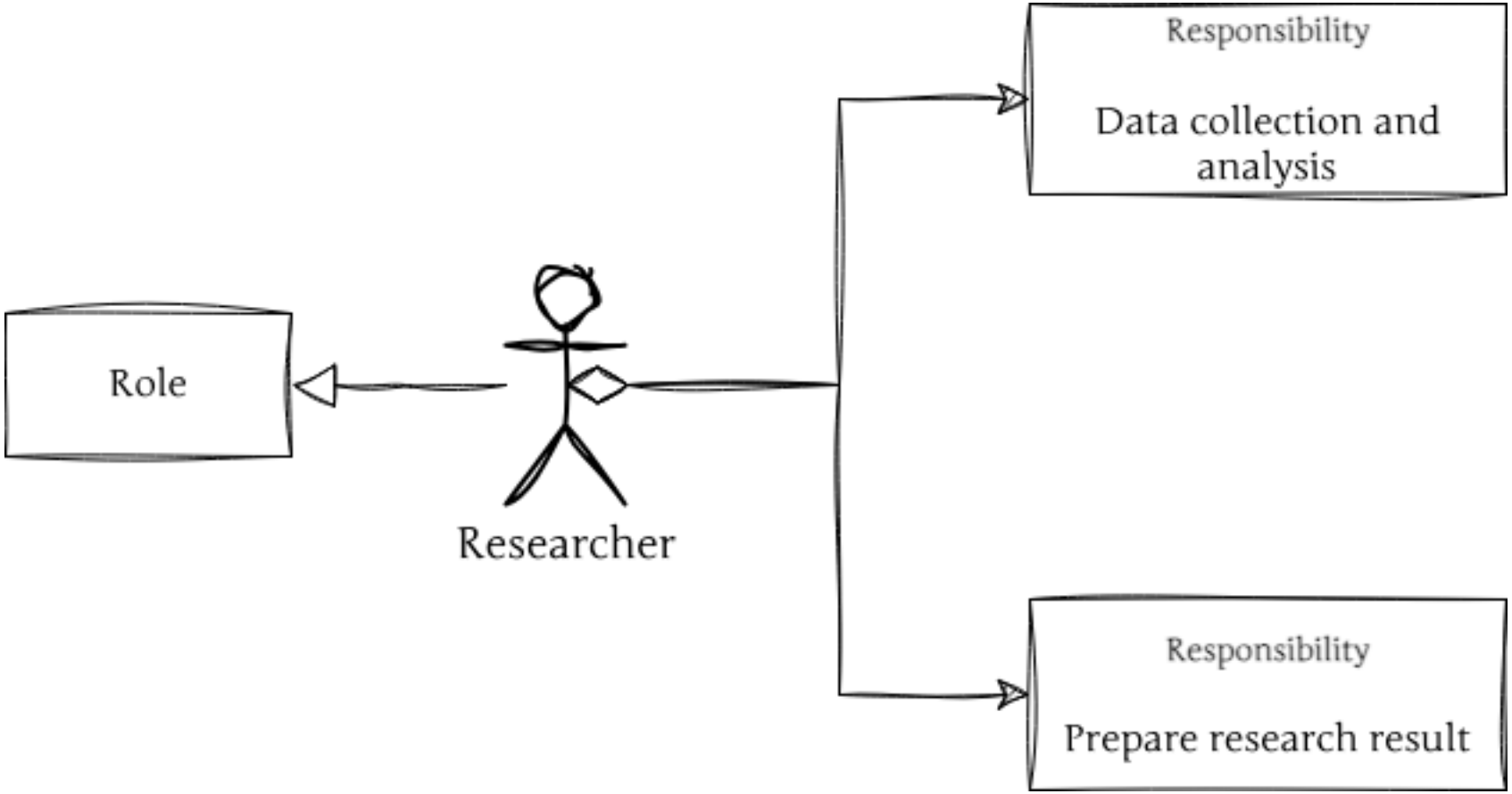
Badacz – osoba odpowiedzialna za prowadzenie badań naukowych zgodnie z planem projektu.

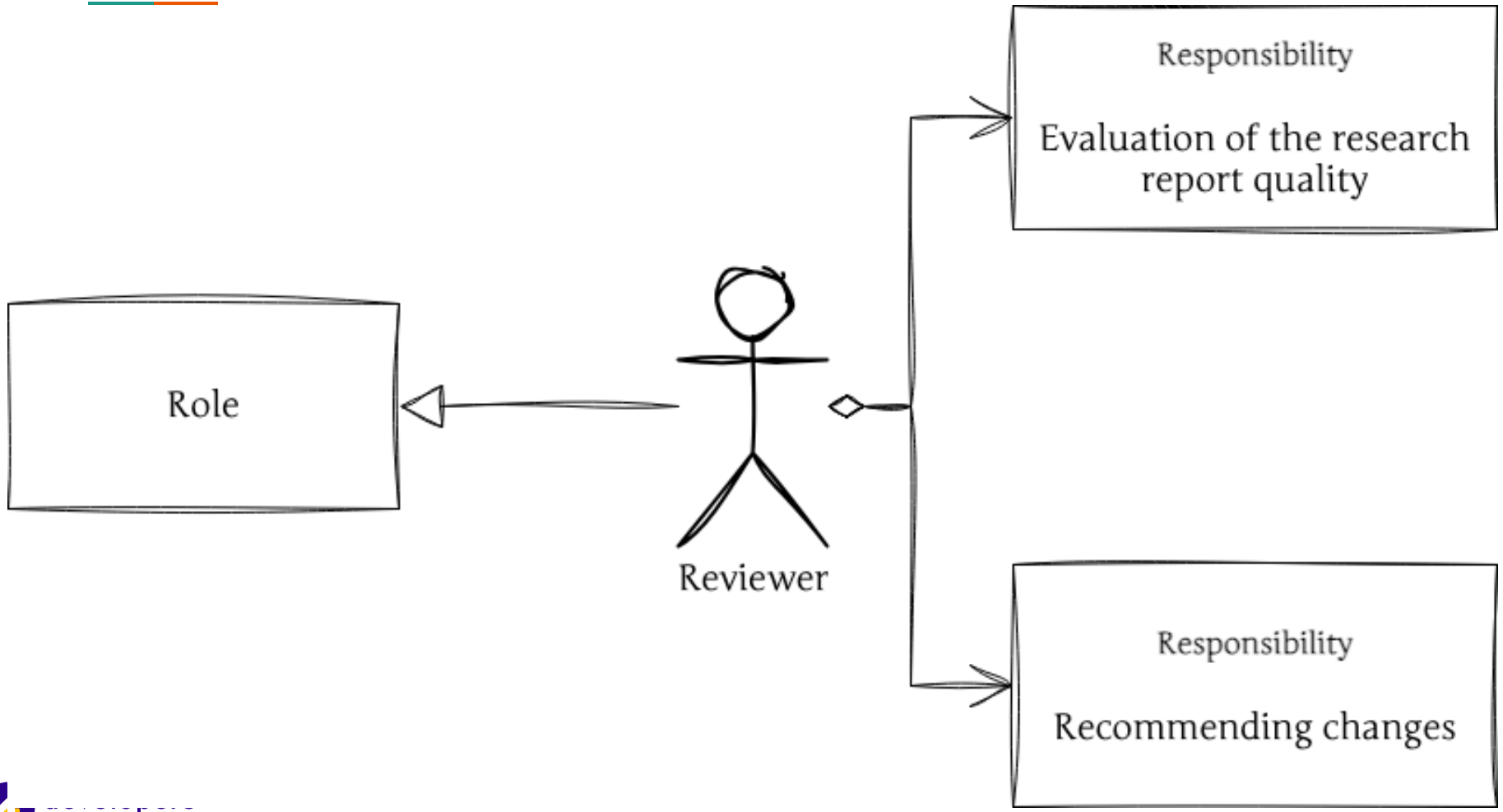


Researcher

Reviever

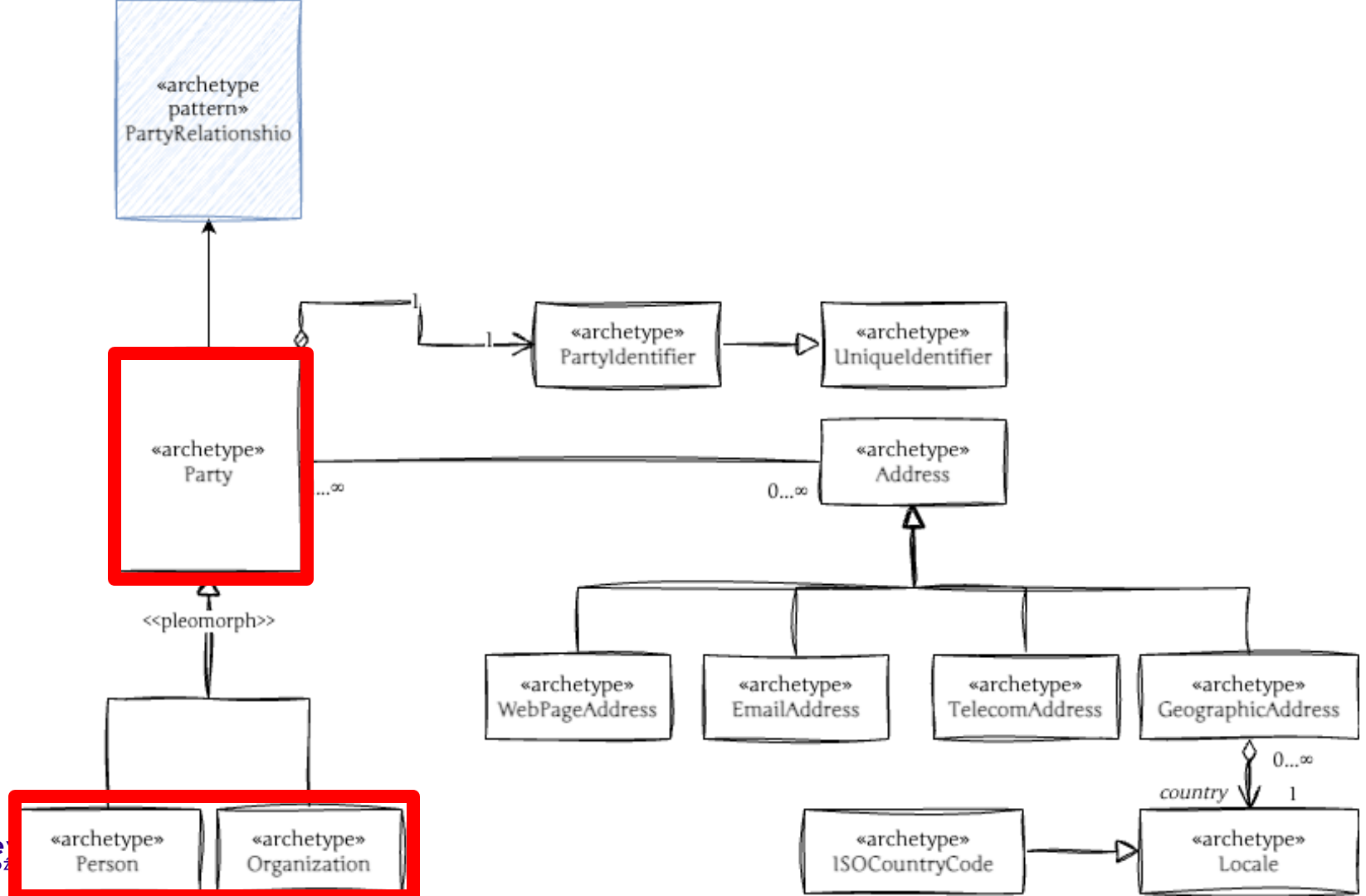
Recenzent – ekspert zewnętrzny odpowiedzialny za ocenę jakości pracy i zgodności wyników z założeniami projektu.


Responsibility
Data collection and analysis
Role
Researcher
Responsibility
Prepare research result


Responsibility
Evaluation of the research report quality
Role
Reviewer
Responsibility
Recommending changes

Zarządzanie rolami

Party
PartyRelationship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«archetype» Organization
«archetype» WebPageAddress
«archetype» EmailAddress
«archetype» TelecomAddress
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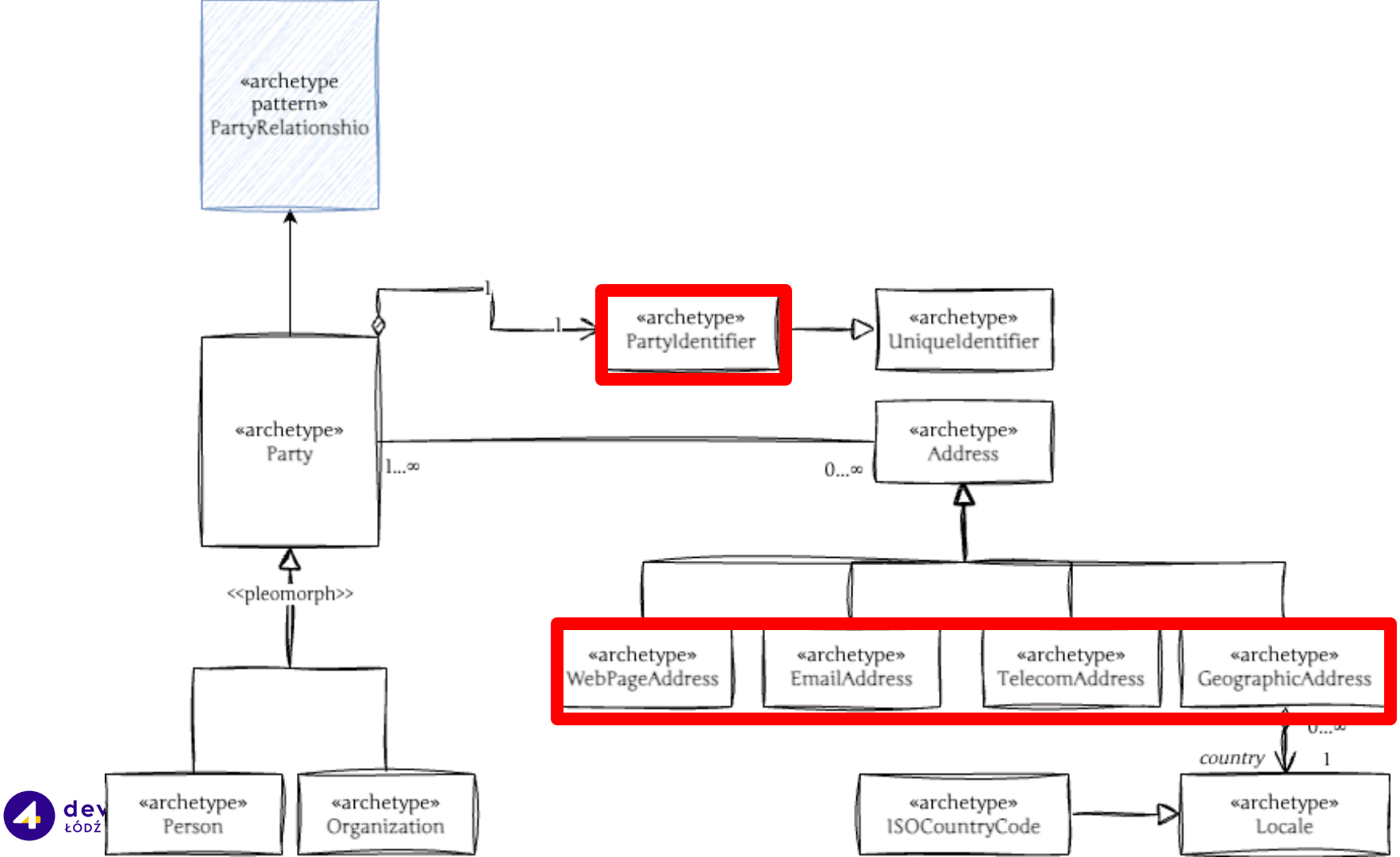
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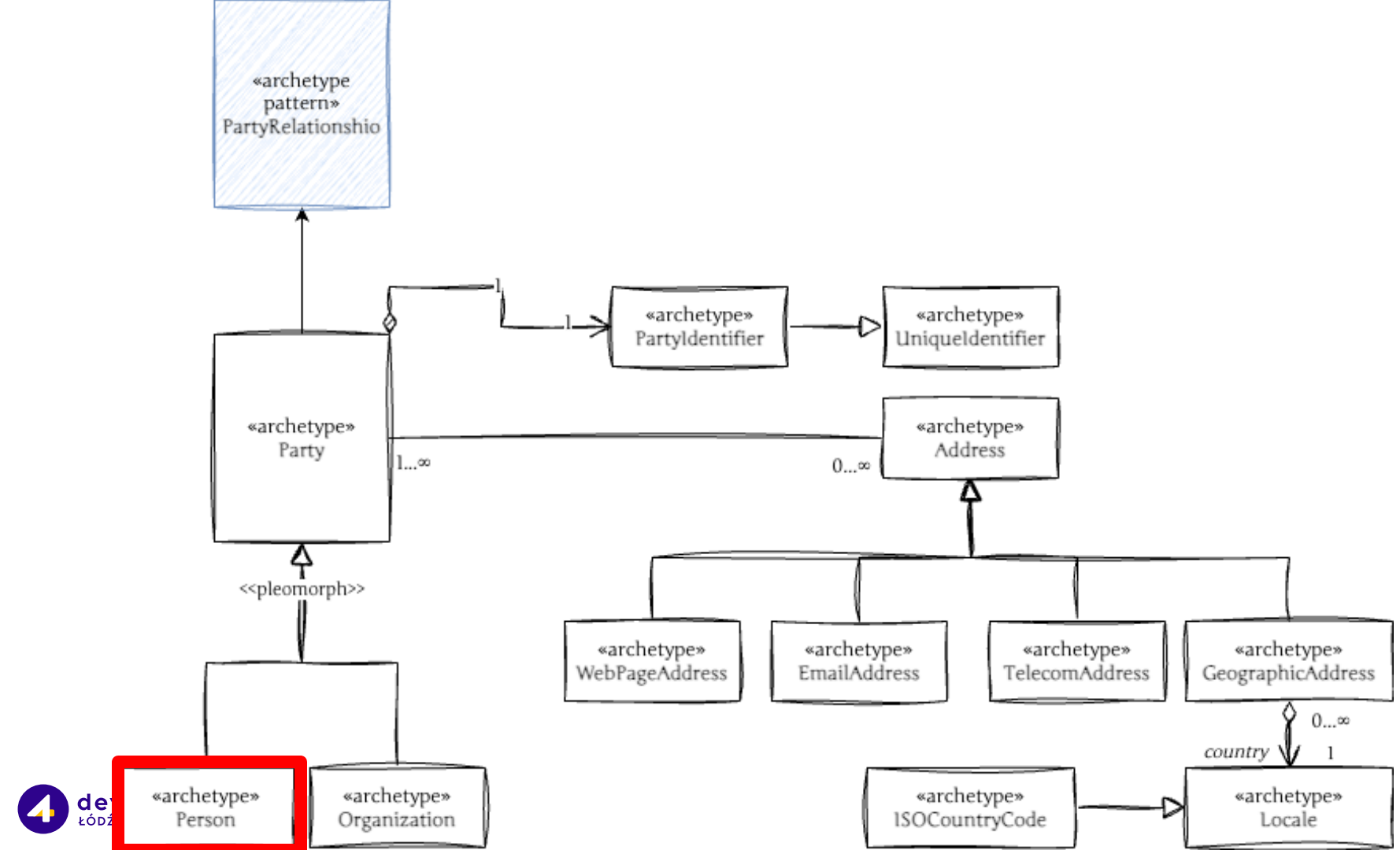
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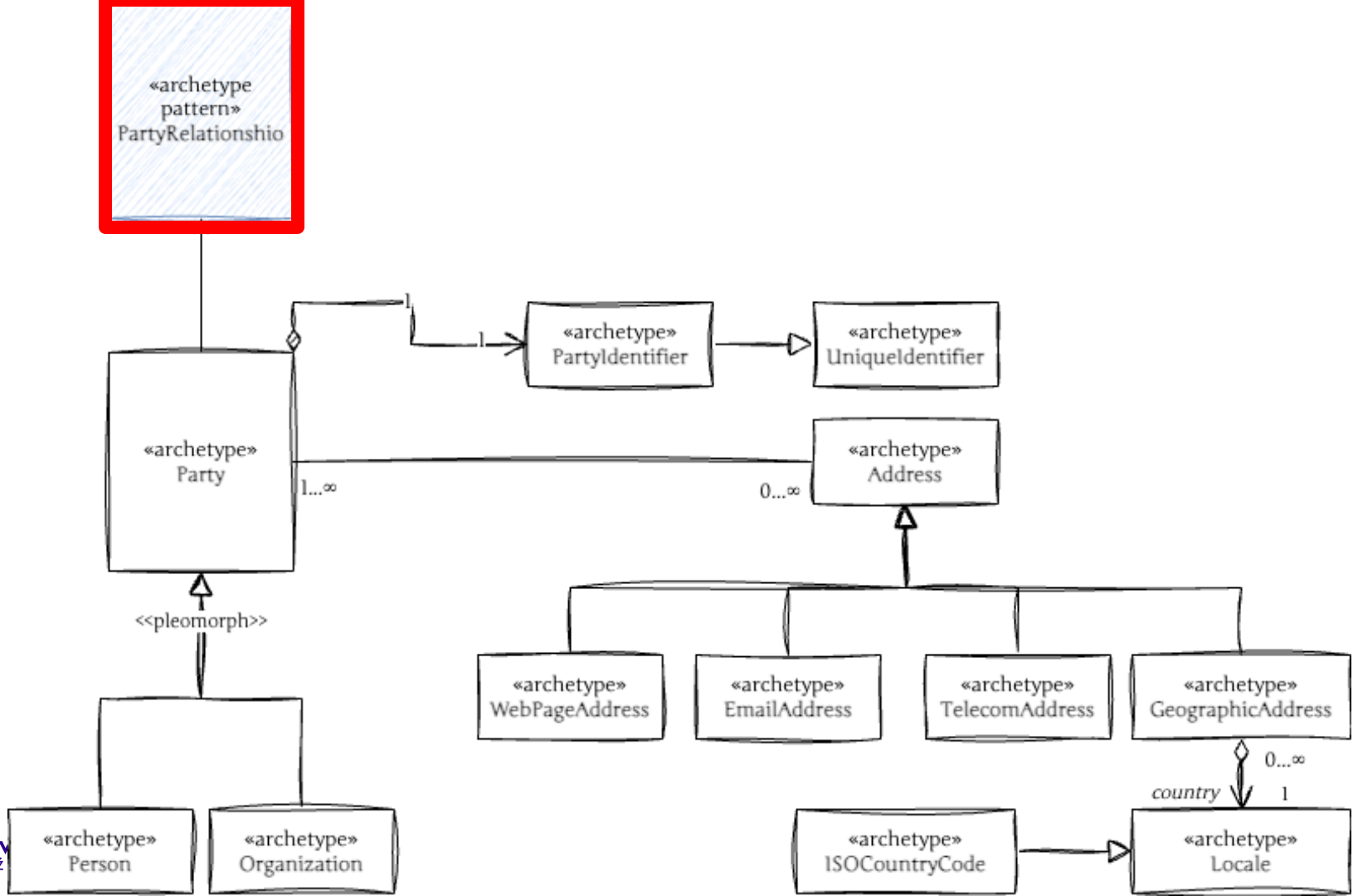
Locale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UniqueIdentifier
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GeographicAddress
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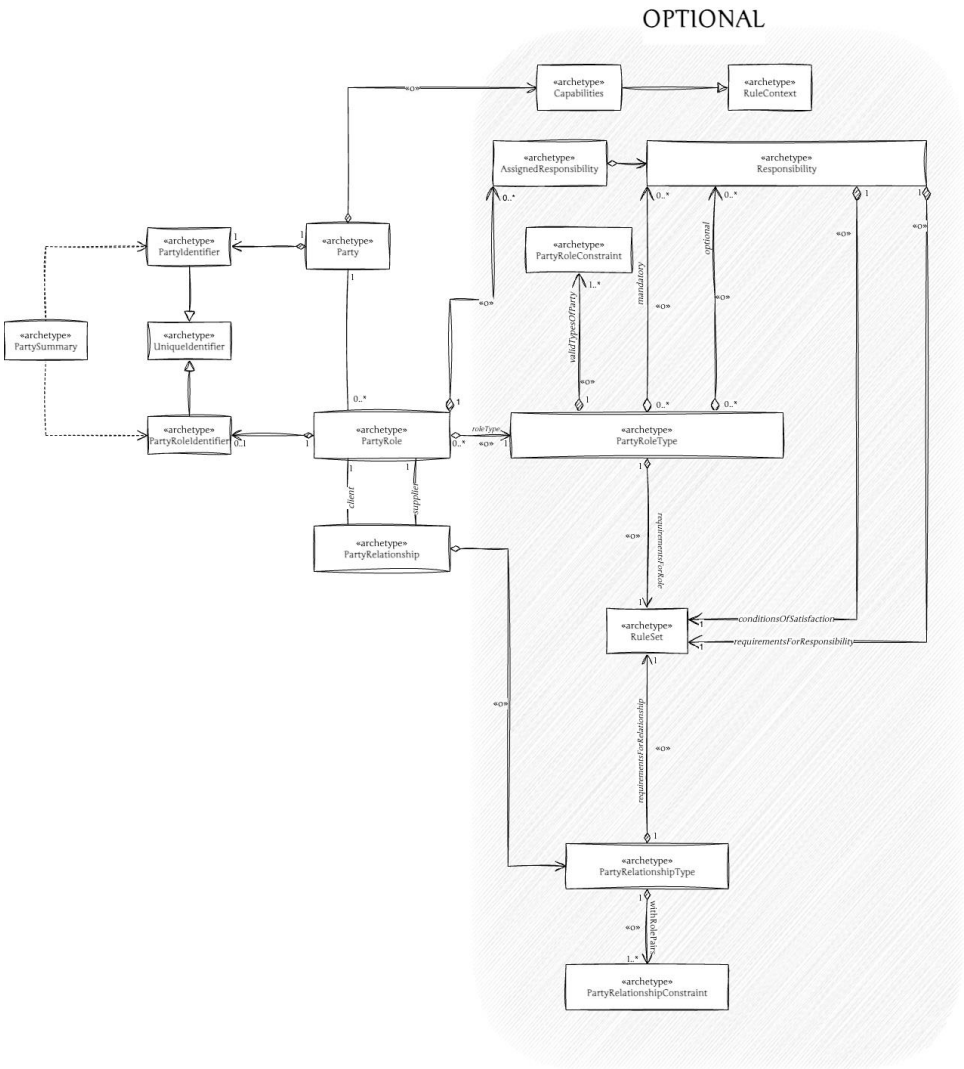
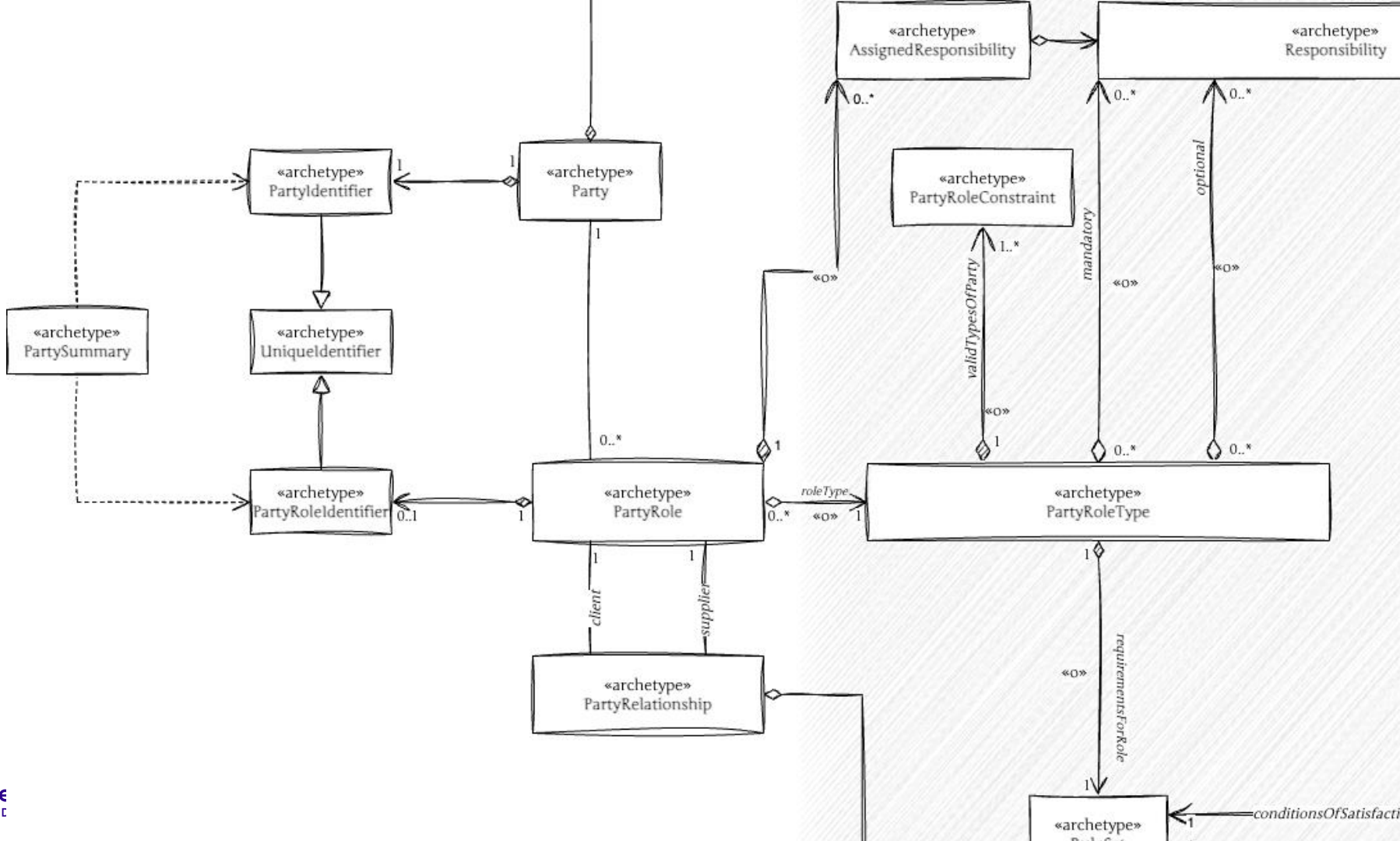


developers ŁÓDŹ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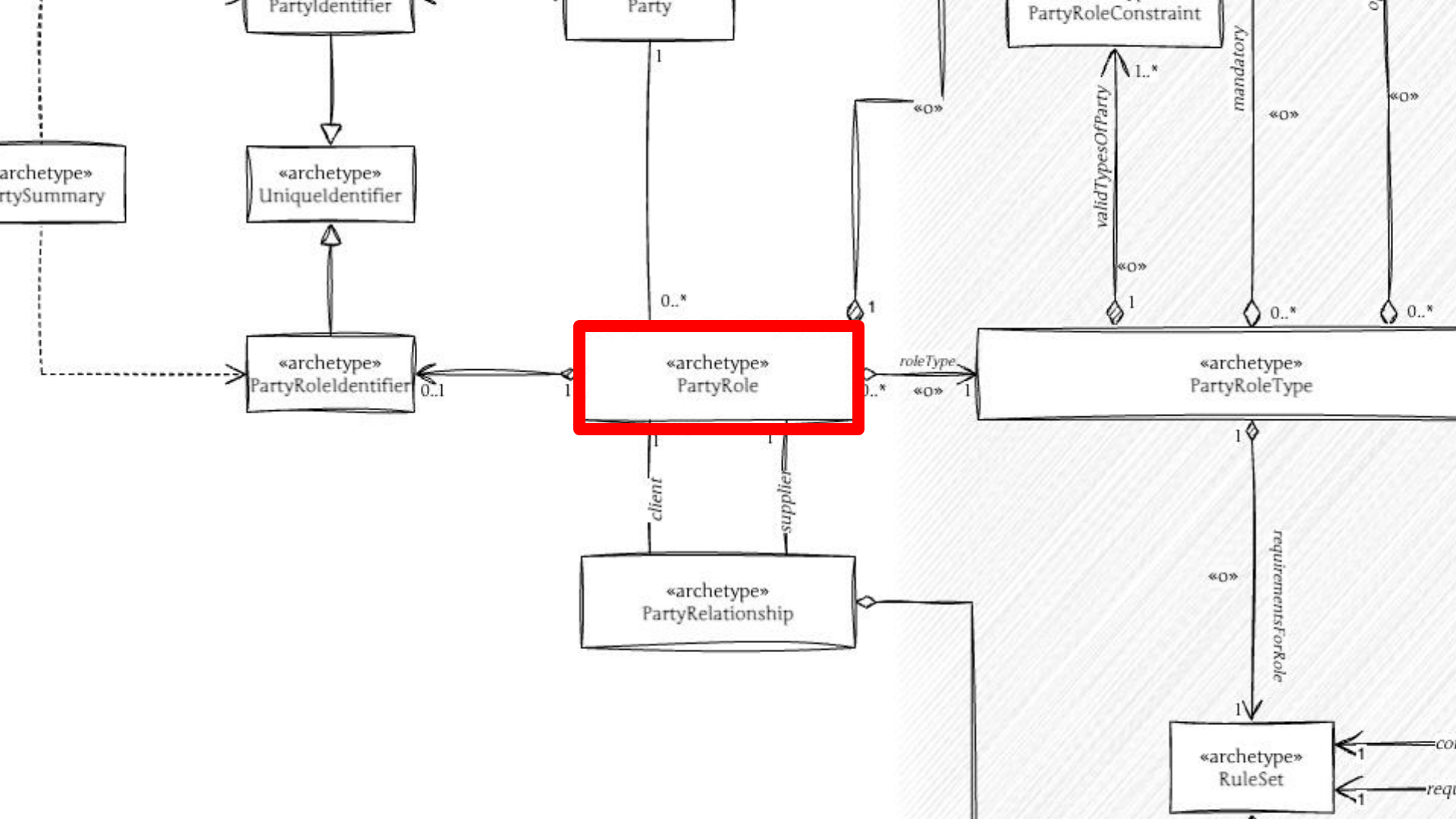
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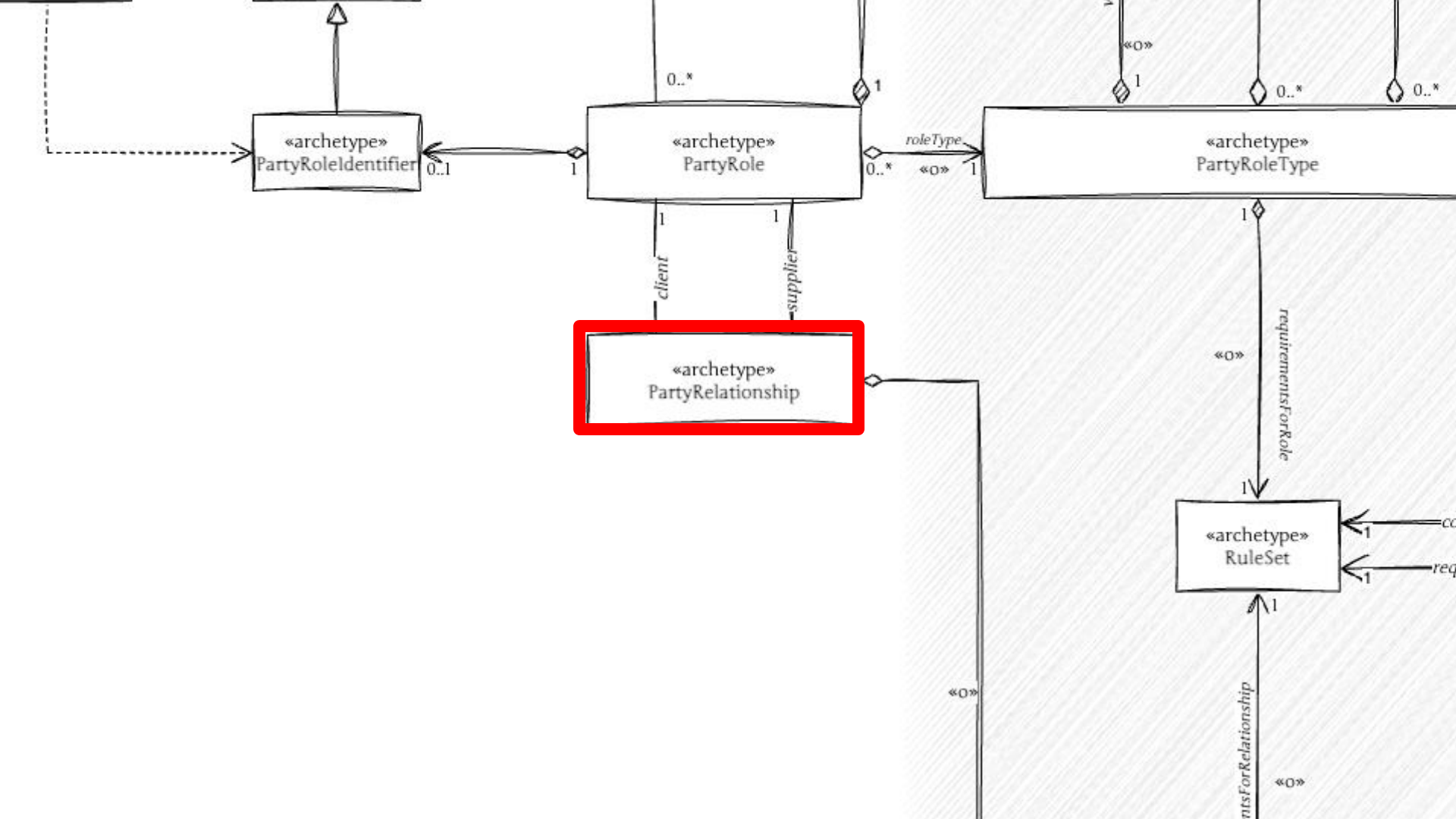
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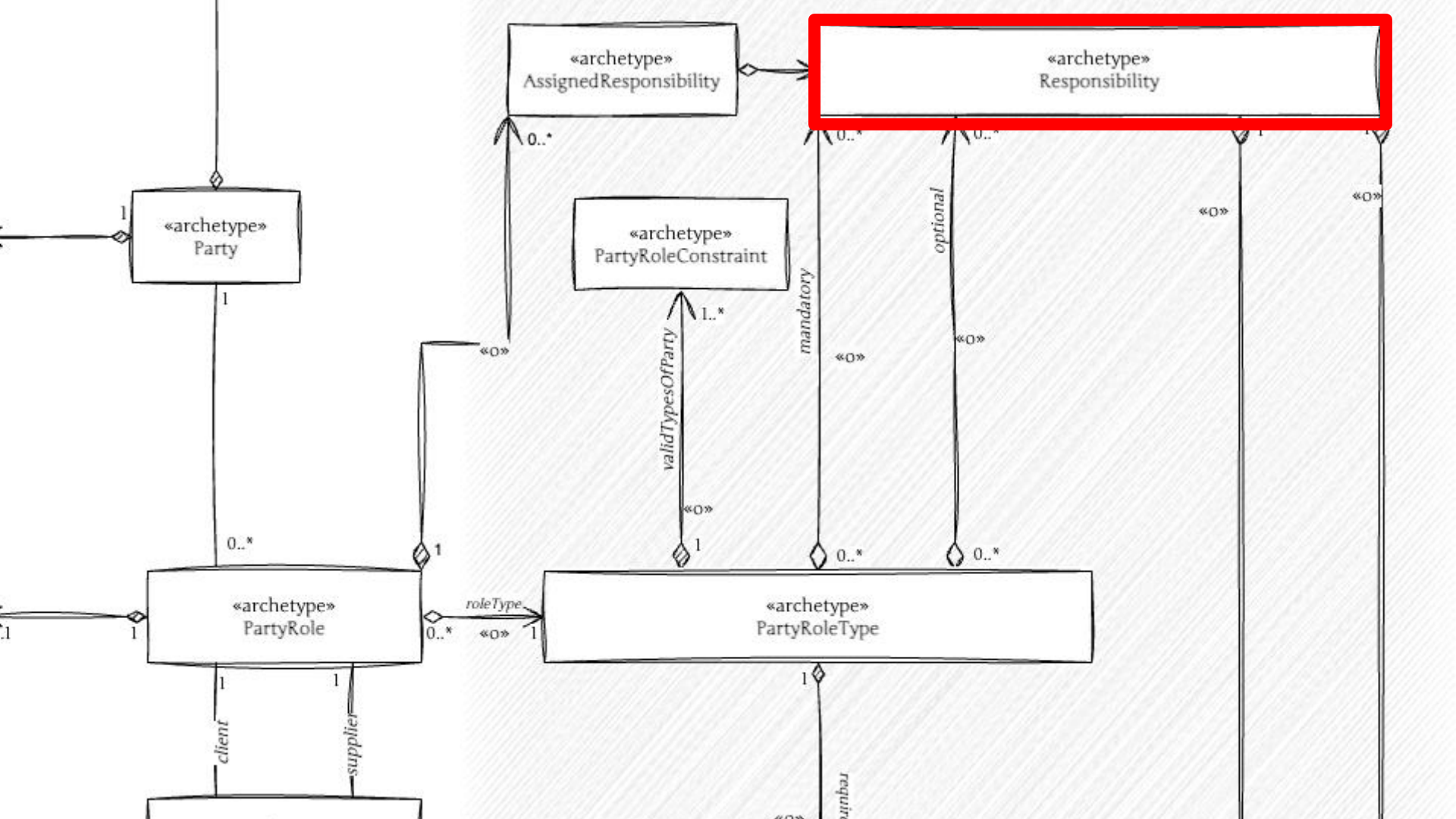
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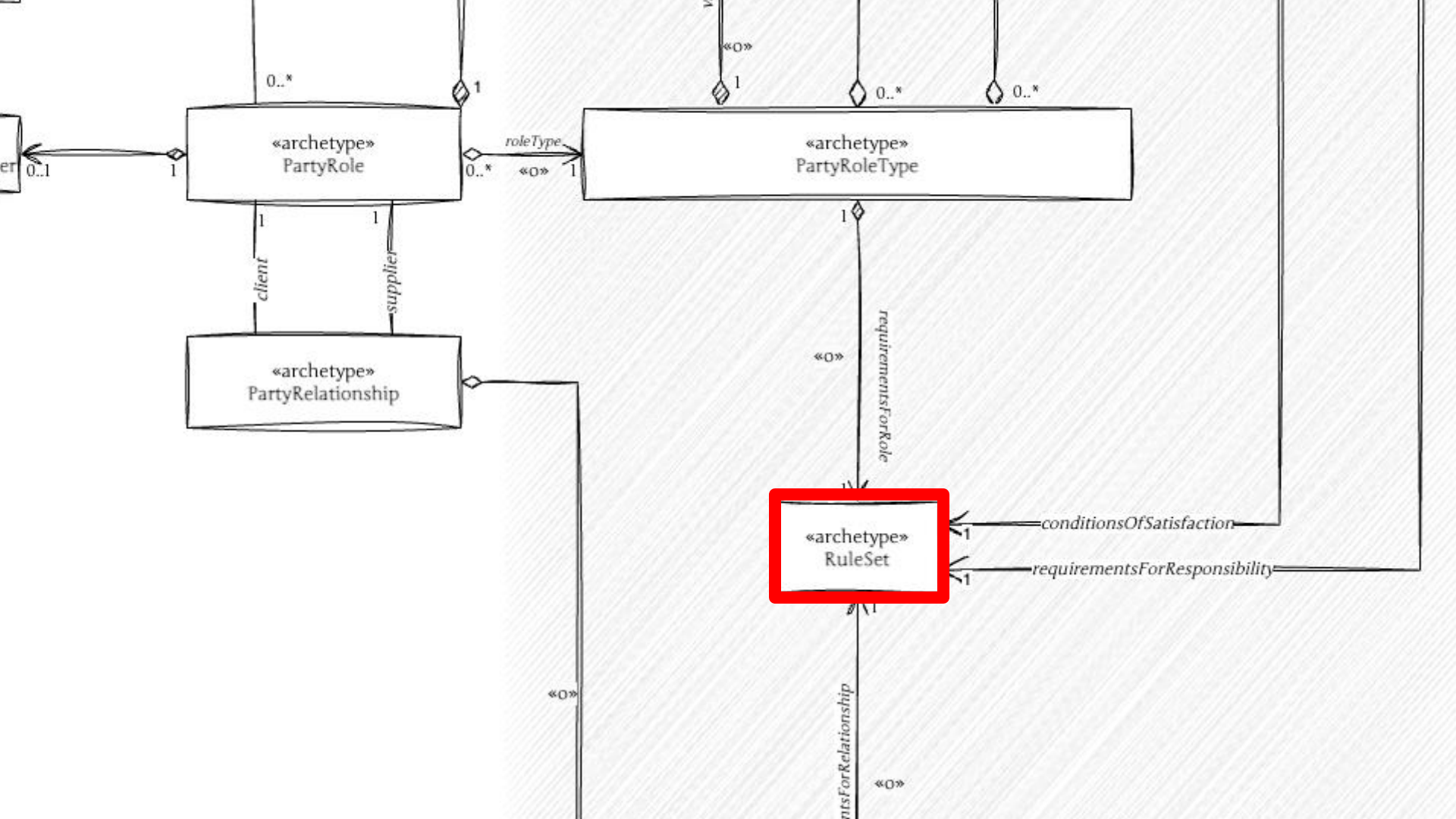
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client
supplier
requirementsForRole
conditionsOfSatisfaction
requirementsForResponsibility
«o»
0..*
1
0..1

```php
abstract class Party
{
    /**
     * Lista ról przypisanych do strony.
     * @var GenericList<Role>
     */
    private GenericList $roles;

    public function __construct()
    {
        $this->roles = GenericList::empty();
    }

    public function getRoles(): GenericList
    {
        return $this->roles;
    }

    public function addRole(Role $role): void
    {
        $this->roles = $this->roles->append($role);
    }
}
```

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     * @var GenericList<Role>
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        return $this->roles;
    }

    public function addRole(Role $role): void
    {
        $this->roles = $this->roles->append($role);
    }
}
```

```php
abstract class Role
{
    /**
     * Lista odpowiedzialności przypisanych do roli.
     * @var GenericList<Responsibility>
     */
    private array $responsibilities;

    public function getResponsibilities(): array
    {
        return $this->responsibilities;
    }

    public function addResponsibility(Responsibility $responsibility): self
    {
        $this->responsibilities = $this->responsibilities->append($responsibility);
    }

    public function executeResponsibilities(RuleContext $context): void
    {
        $this->responsibilities
            ->filter(fn(Responsibility $responsibility) => $responsibility->canAssign($context))
            ->forEach(fn(Responsibility $responsibility) => $responsibility->execute());
    }
}
```

```php
abstract class Role
{
    /**
     * Lista odpowiedzialności przypisanych do roli
     * @var GenericList<Responsibility>
     */
    private array $responsibilities;

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    {
        $this->responsibilities
            ->filter(fn(Responsibility $responsibility) => $responsibility->canAssign($context))
            ->forEach(fn(Responsibility $responsibility) => $responsibility->execute());
    }
}
```

```
class ScienceEmployee extends Party
{
}
```

```
class ScienceEmployee extends Party
{
}

class RoleOfScientist extends Role
{
}
```

```php
readonly class Responsibility
{
    public function __construct(
        public string $description,
        public bool $isMandatory,
        private Ruleset $conditionsOfSatisfaction,
        private Ruleset $conditionsForResponsibility,
        private ?\Closure $executionLogic = null
    ) {}

    /**
     * Sprawdza, czy warunki przypisania odpowiedzialności są spełnione.
     */
    public function canAssign(RuleContext $context): bool
    {
        return $this->conditionsForResponsibility === null
            || $this->conditionsForResponsibility->evaluate($context);
    }

    /**
     * Wykonuje logikę odpowiedzialności.
     */
    public function execute(): void
    {
        if ($this->executionLogic === null) {
            throw new Exception('No execution logic defined for this responsibility.');
        }

        $this->executionLogic($this->conditionsOfSatisfaction);
    }
}
```

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readonly class Responsibility
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        public string $description,
        public bool $isMandatory,
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     */
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    {
        return $this->conditionsForResponsibility === null
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     */
    public function canAssign(RuleContext $context): bool
    {
        return $this->conditionsForResponsibility === null
```

```php
$analyzeDataResponsibility = new Responsibility(
    description: 'Analyze research data',
    isMandatory: true,
    // Ruleset określający warunki satysfakcji odpowiedzialności
    conditionsOfSatisfaction: $analyzeDataConditionsOfSatisfaction,
    // Ruleset określający warunki przypisania odpowiedzialności
    conditionsForResponsibility: $analyzeDataConditionsForResponsibility,
    // Tutaj logika analizy danych
    executionLogic: fn(Ruleset $conditionsOfSatisfaction) => 1+1
);

$prepareReportResponsibility = new Responsibility(
    description: 'Prepare research report',
    isMandatory: true,
    conditionsOfSatisfaction: $prepareReportConditionsOfSatisfaction,
    conditionsForResponsibility: $prepareReportConditionsForResponsibility,
    // Tutaj logika przygotowania raportu
    executionLogic:  fn(Ruleset $conditionsOfSatisfaction) => 2+2
);
```

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$analyzeDataResponsibility = new Responsibility(
    description: 'Analyze research data',
    isMandatory: true,
    // Ruleset określający warunki satysfakcji odpowiedzialności
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    // Ruleset określający warunki przypisania odpowiedzialności
    conditionsForResponsibility: $analyzeDataConditionsForResponsibility,
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    // Tutaj logika przygotowania raportu
    executionLogic:  fn(Ruleset $conditionsOfSatisfaction) => 2+2
);
```

```php
$researcherRole = new RoleOfScientist();
$researcherRole->addResponsibility($analyzeDataResponsibility);
$researcherRole->addResponsibility($prepareReportResponsibility);
$concreteResearcherEmployee = new ScienceEmployee();
$concreteResearcherEmployee->addRole($researcherRole);

// Tworzenie nowego badania, z czapy faktorką,
// ale nie zmieścimy się w slajdzie inaczej
$research = Research::create();

$researchResult = $concreteResearcherEmployee->getRoles()
    ->executeResponsibilities($research->getContext());
```

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$research = Research::create();

$researchResult = $concreteResearcherEmployee->getRoles()
    ->executeResponsibilities($research->getContext());
```

```php
$validRole = new Rule( name: 'validResponsibilityRule');
$validRole
    ->variable( name: 'role')
    ->variable( name: 'expected role', value: RoleOfScientist::class)
    ->equalTo();

$ownershipRule = new Rule( name: 'ownershipRule');
$ownershipRule
    ->variable( name: 'owner')
    ->variable( name: 'employee')
    ->notEqualTo();

$conditionsForResponsibility = new Ruleset($validRole, $ownershipRule);
$analyzeDataResponsibility = new Responsibility(
    // reszta
    conditionsForResponsibility: $conditionsForResponsibility,
);
```

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$validRole = new Rule(name: 'validResponsibilityRule');
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    ->variable(name: 'role')
    ->variable(name: 'expected role', value: RoleOfScientist::class)
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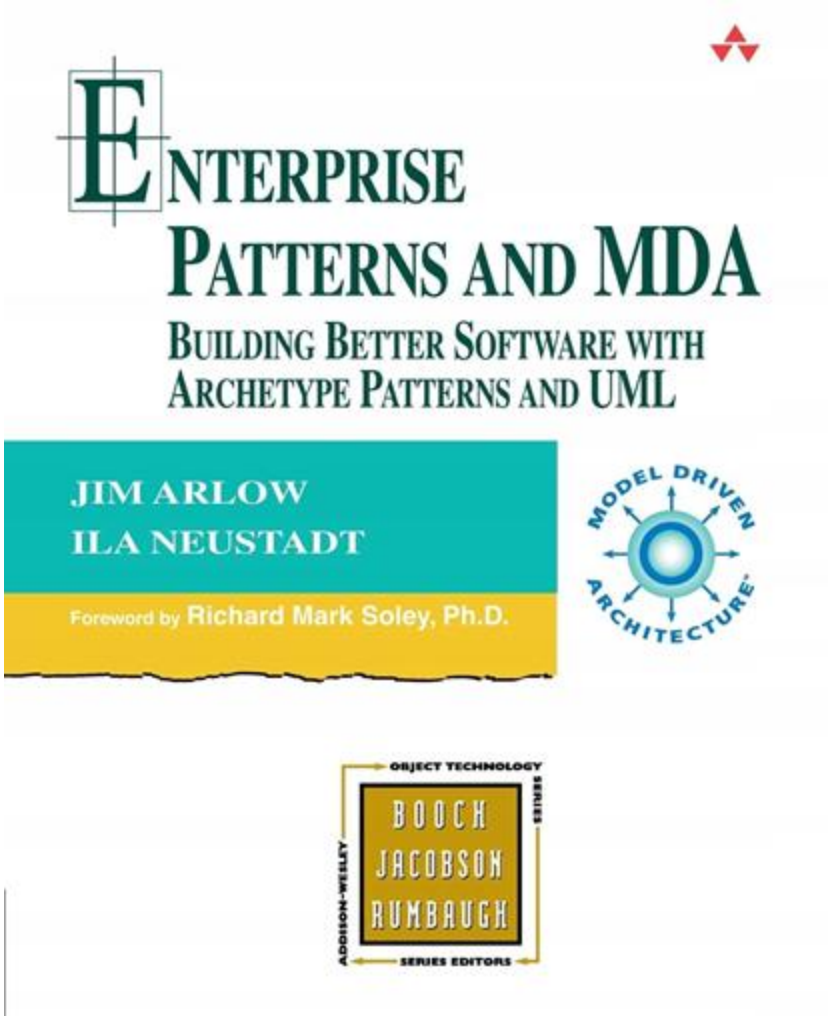
```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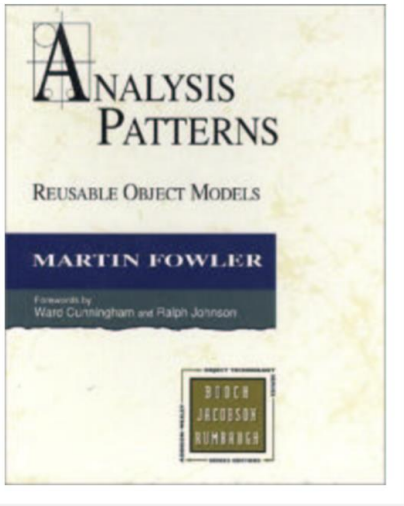
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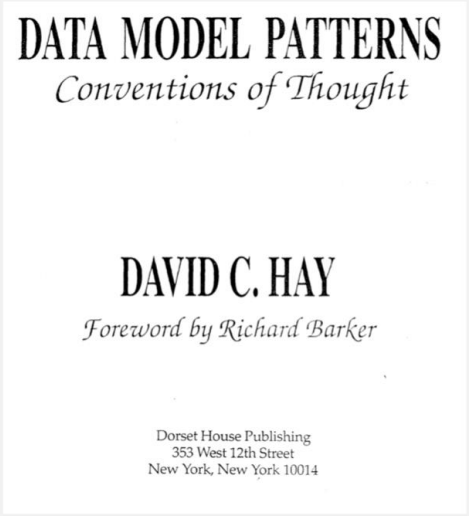
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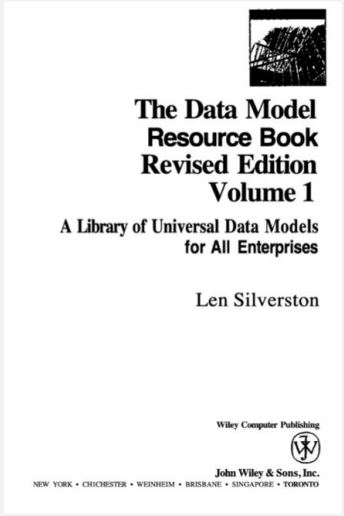
New York, New York 10014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John Wiley & Sons, Inc.
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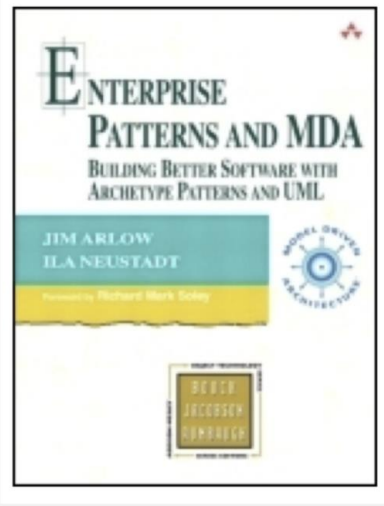
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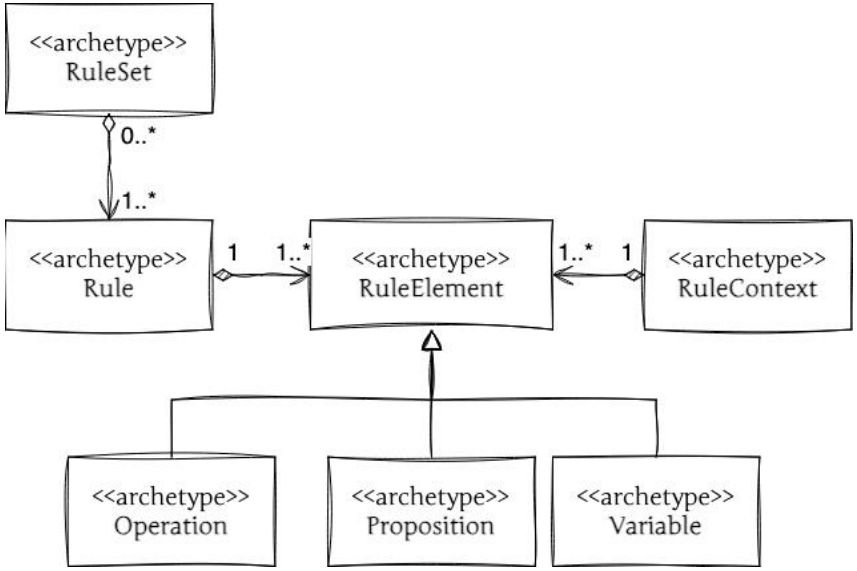
RUMBAUGH

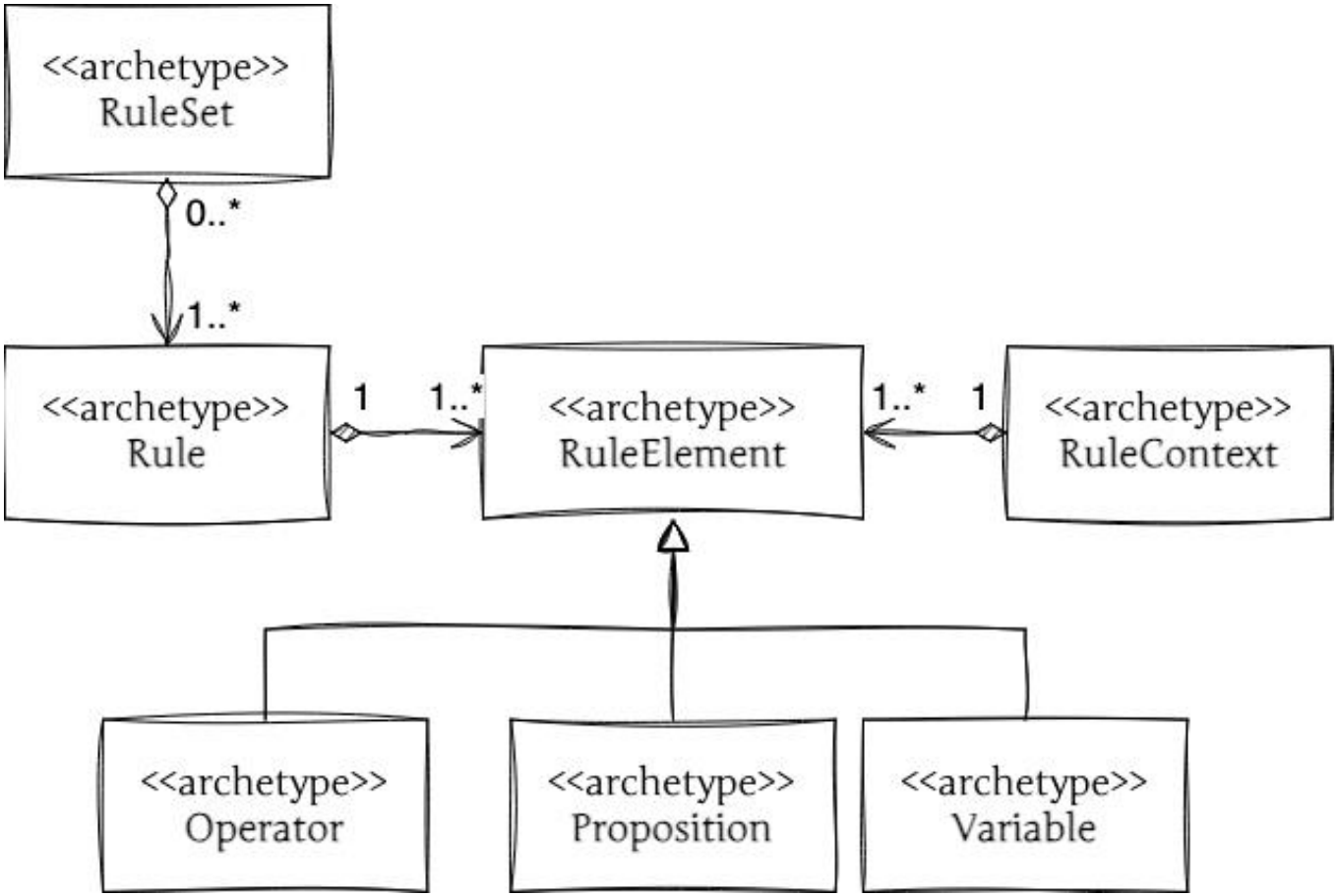
https://softwarearchetypes.com/

Zarządzanie regułami

Rule

Zarządzanie regułami

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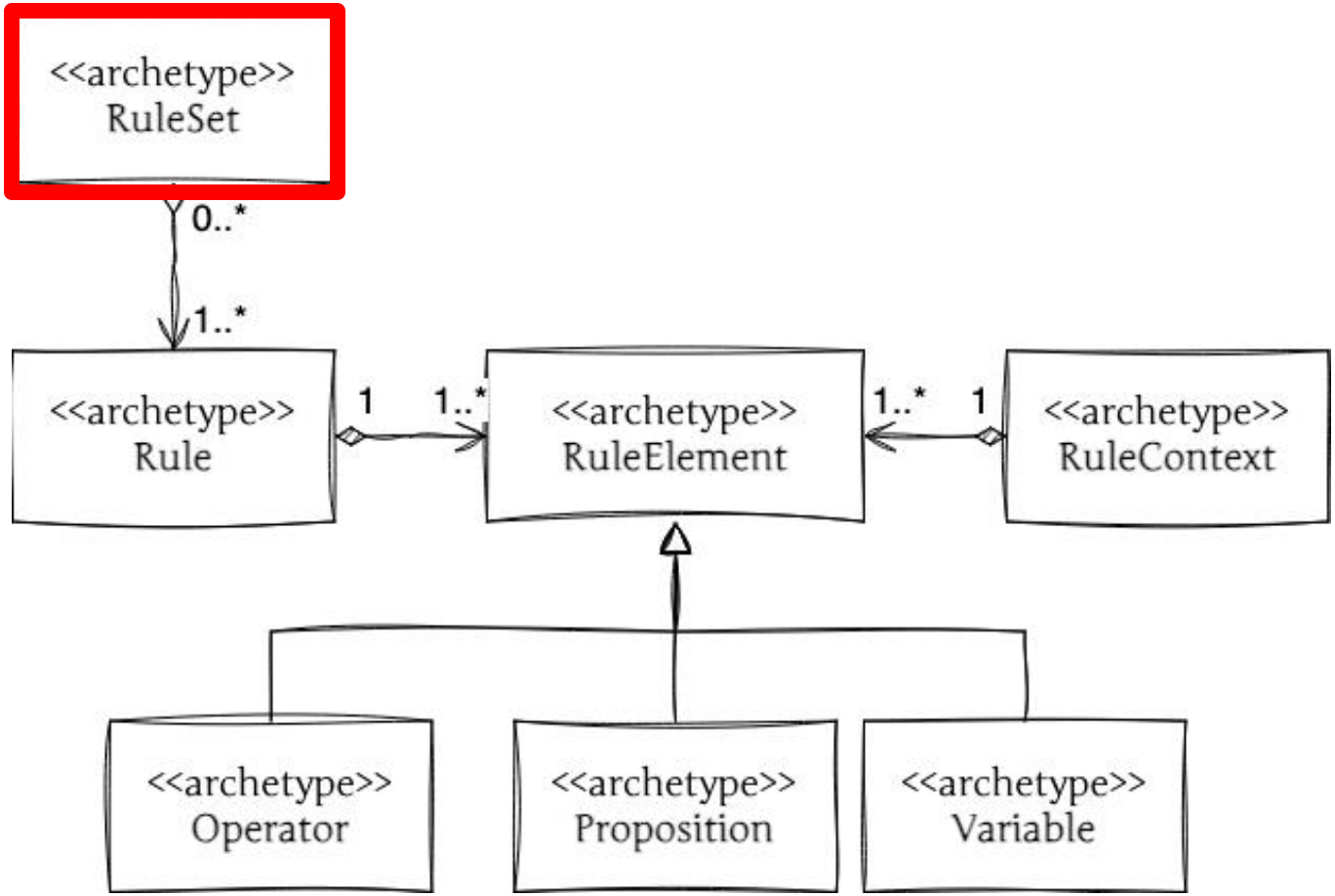
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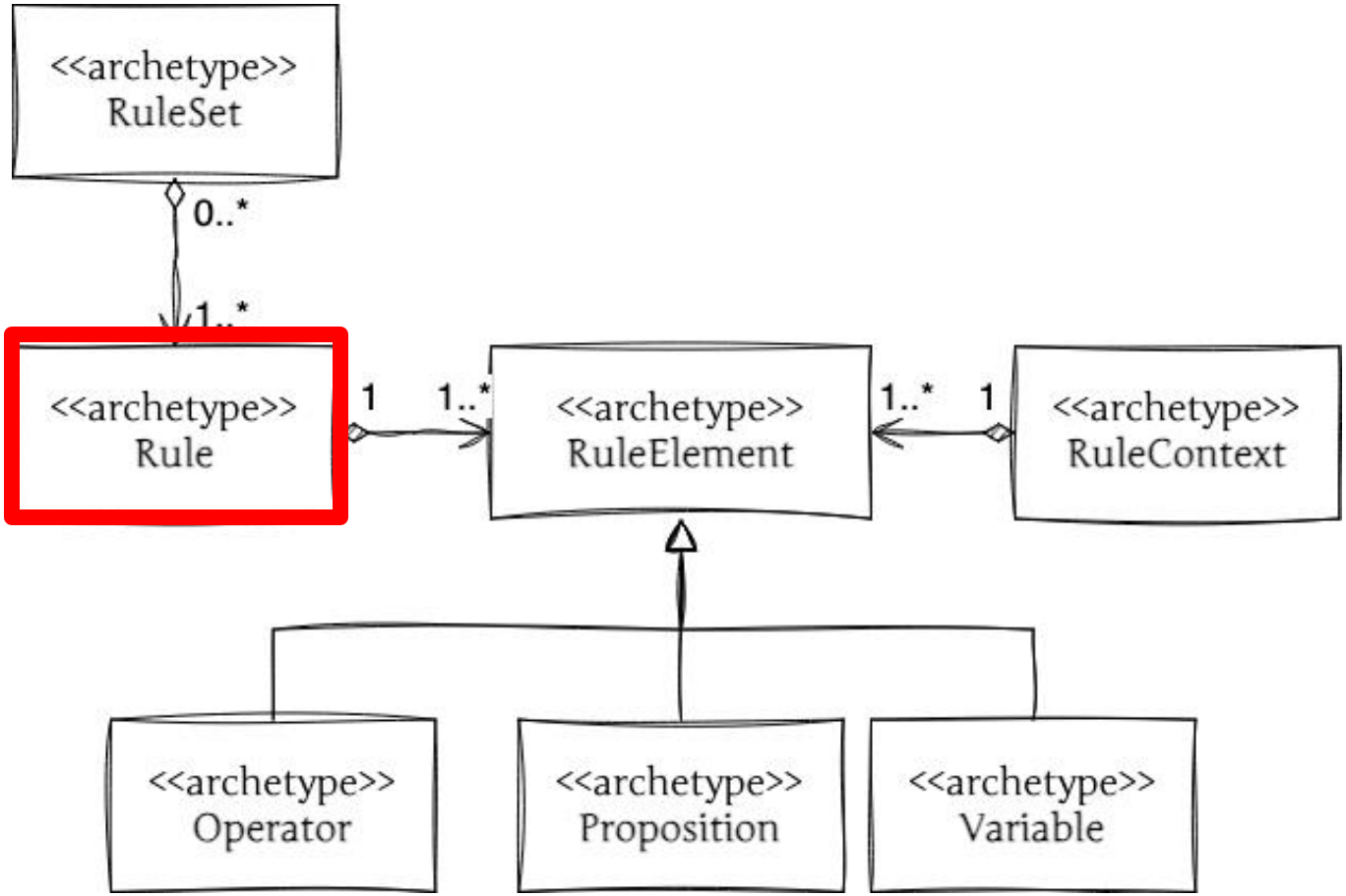
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$validRole
    ->variable( name: 'role')
    ->variable( name: 'expected role',  value: RoleOfScientist::class)
    ->equalTo();
```

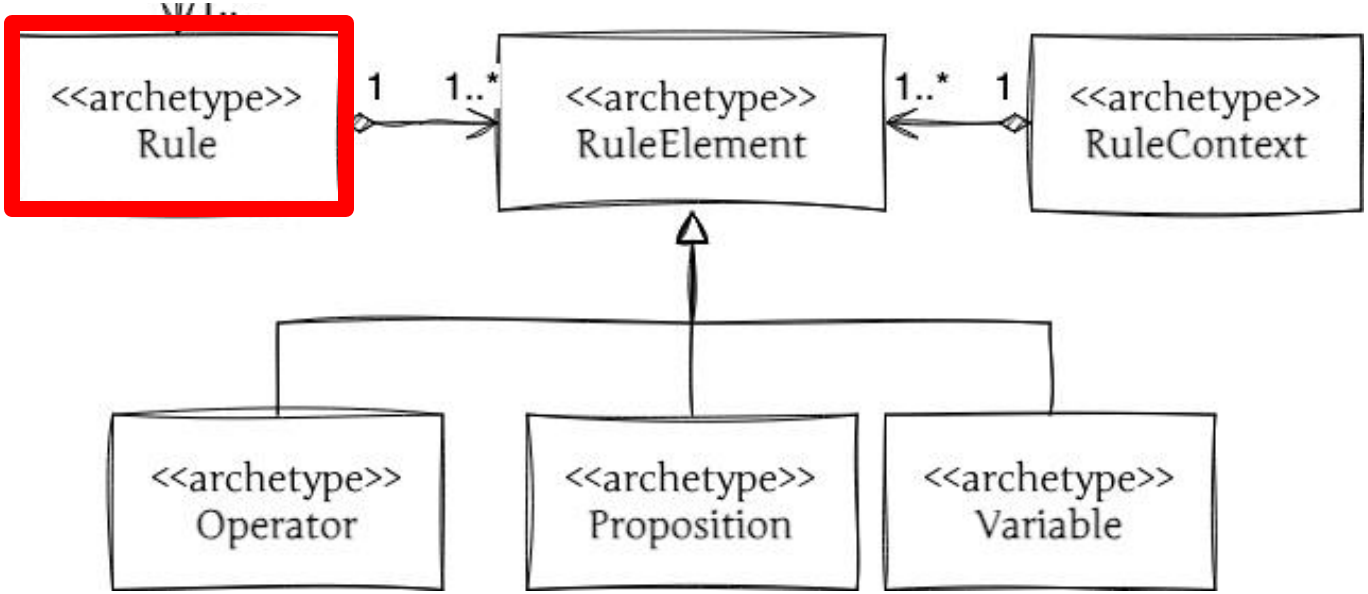

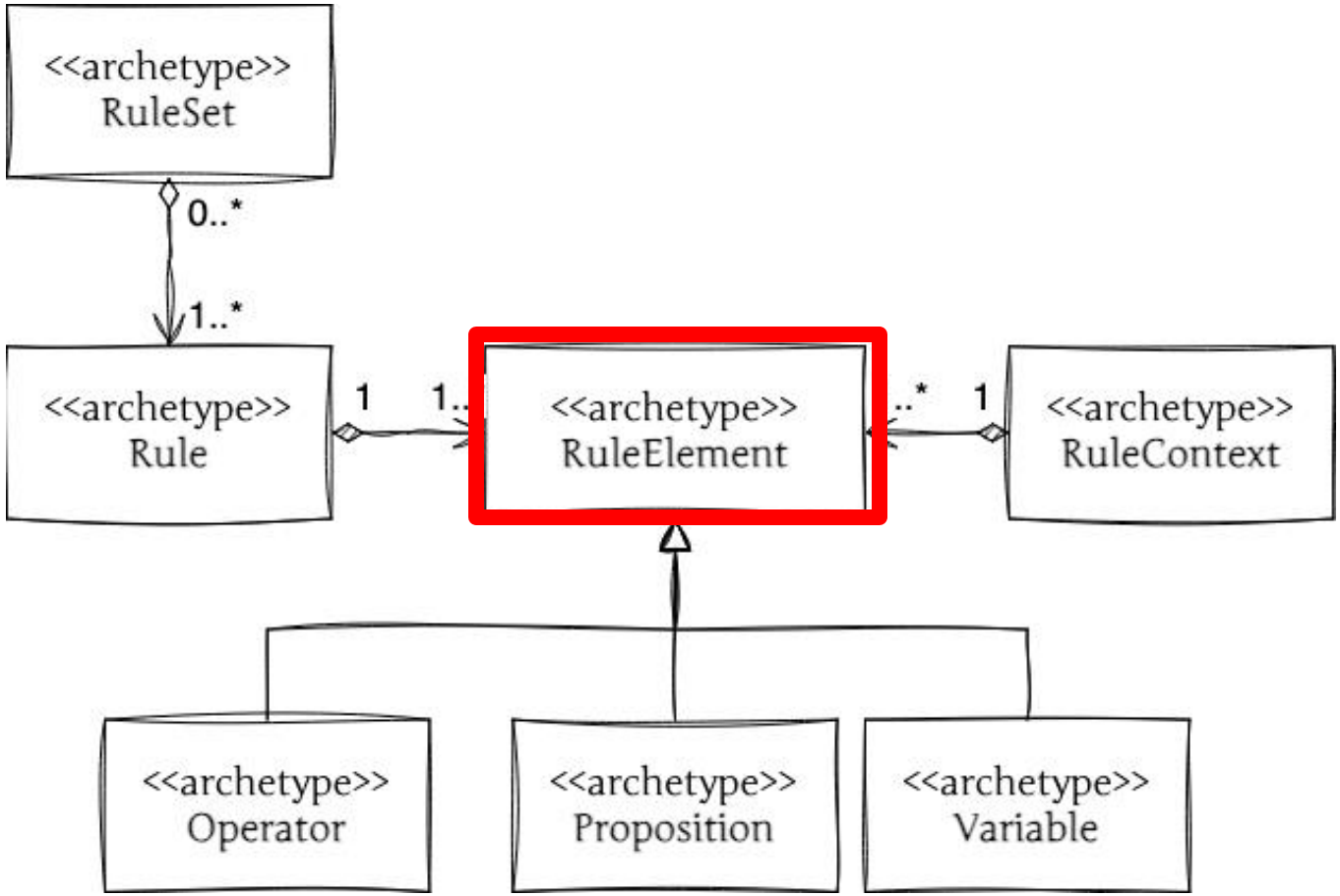
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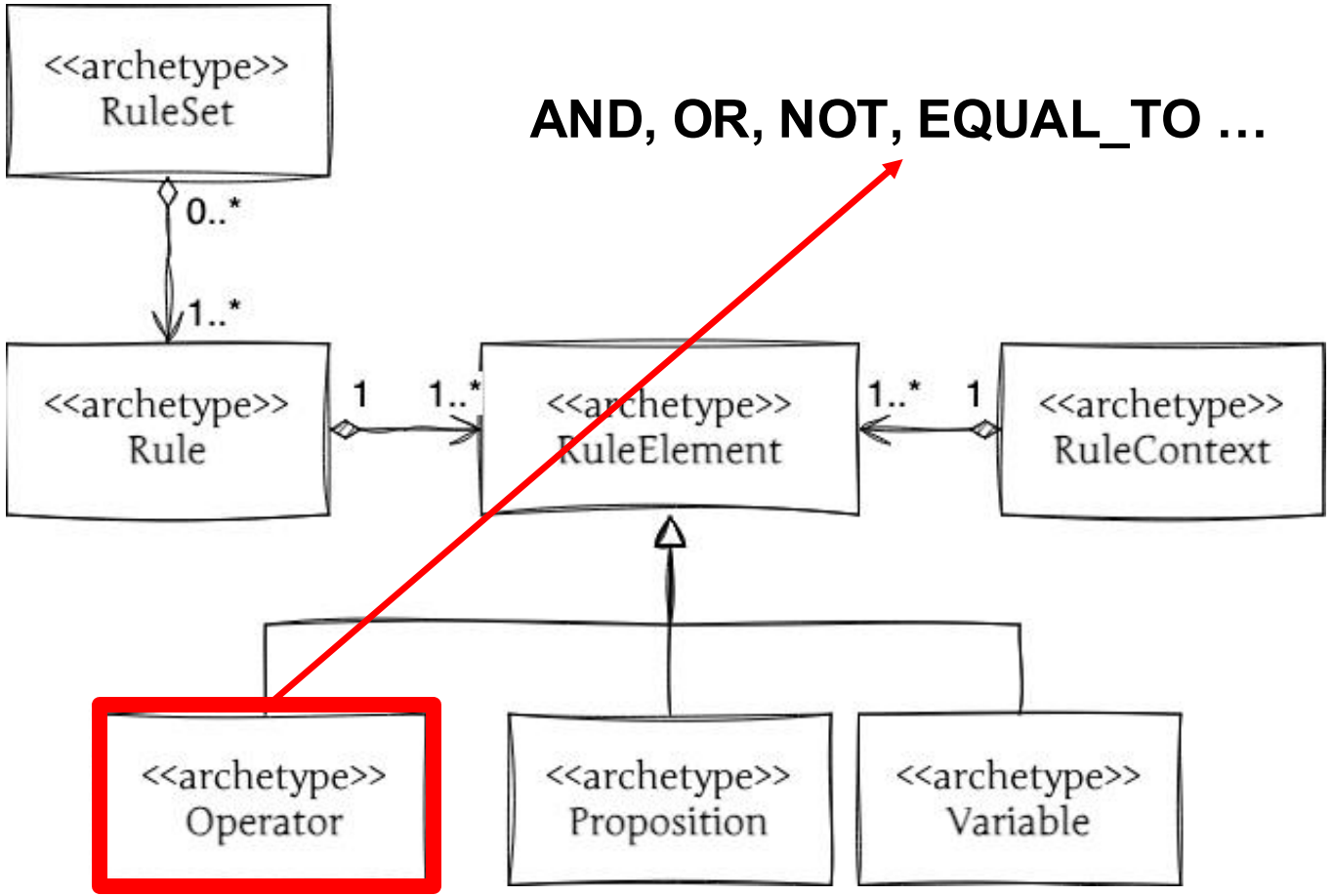
AND, OR, NOT, EQUAL_TO …
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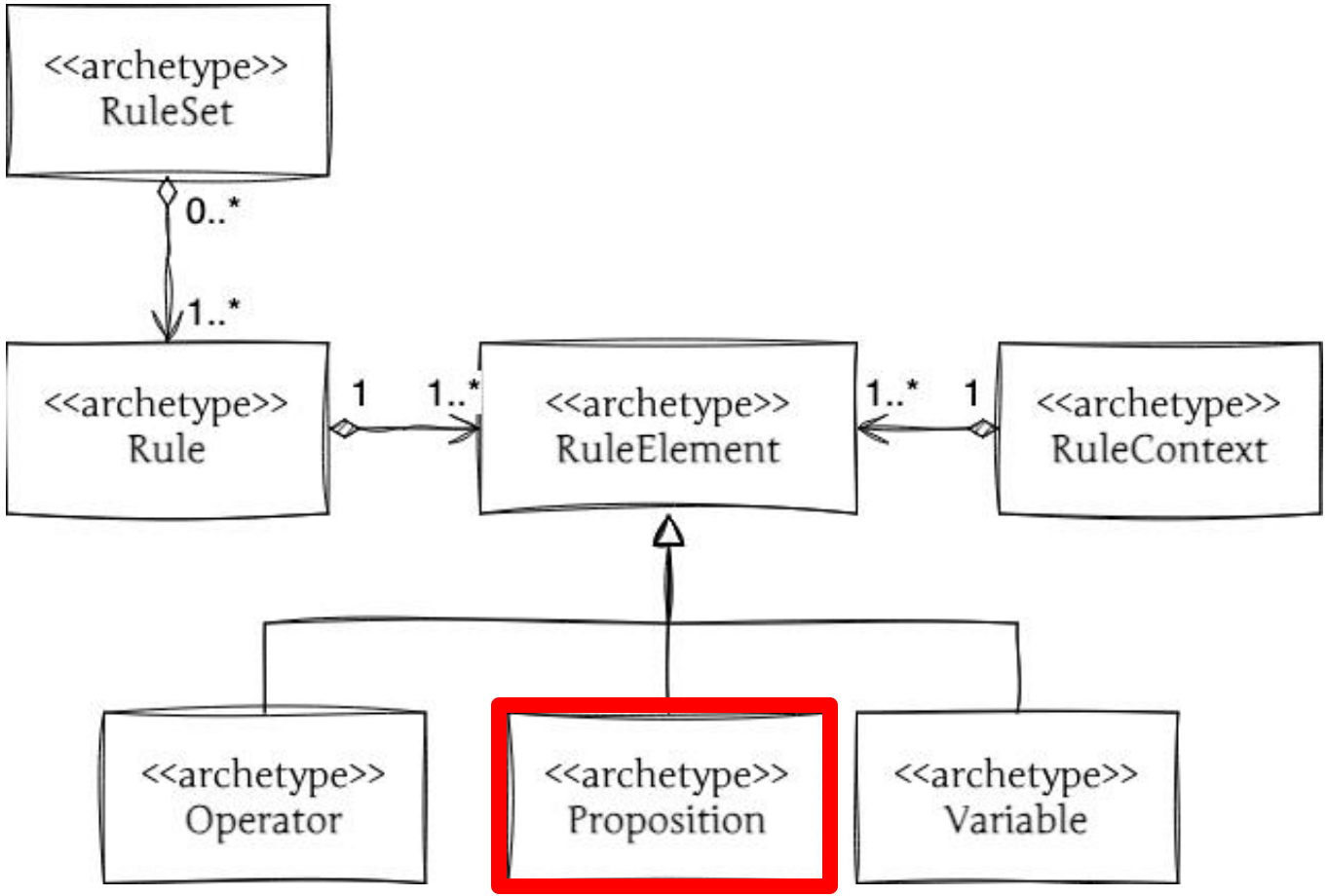
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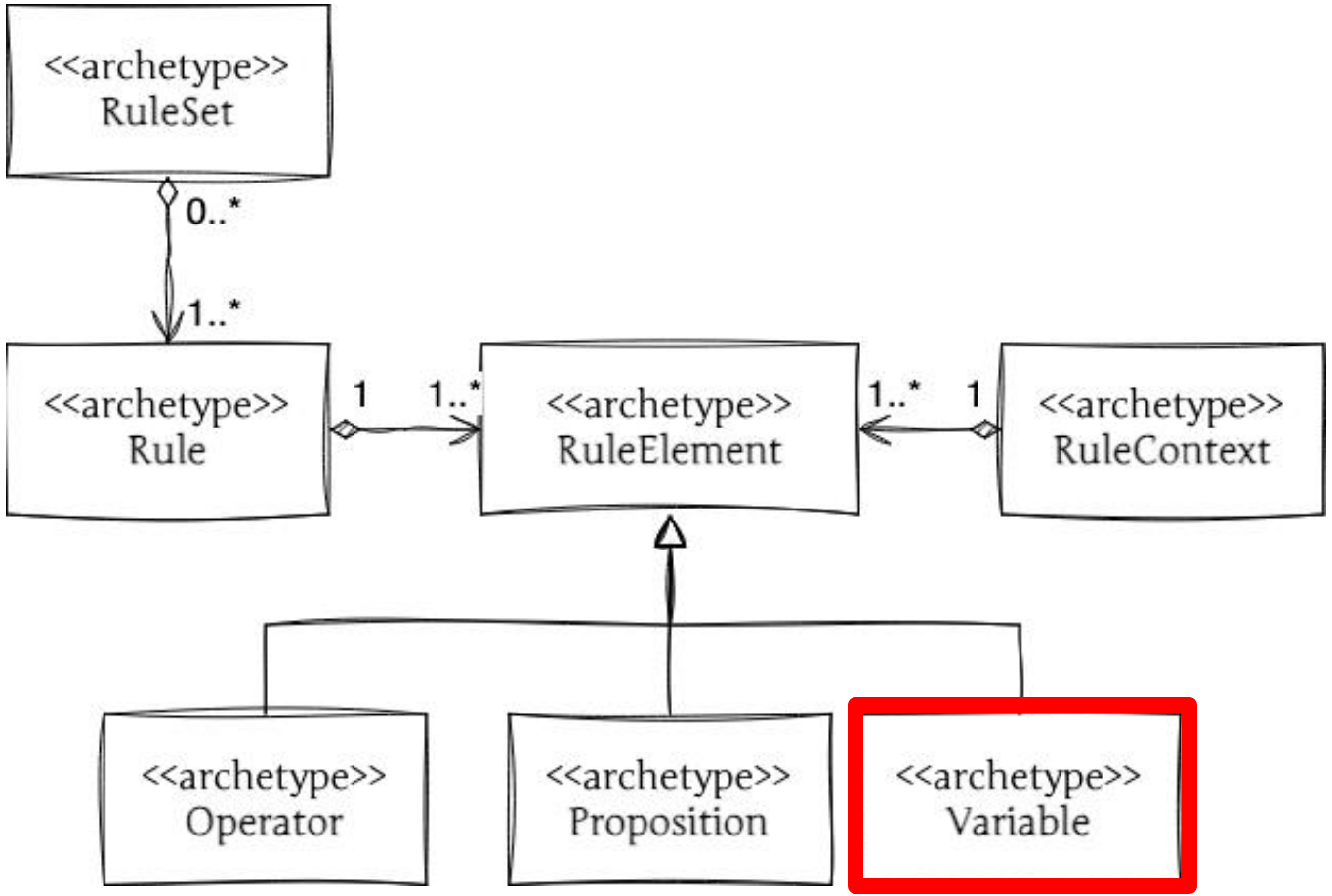
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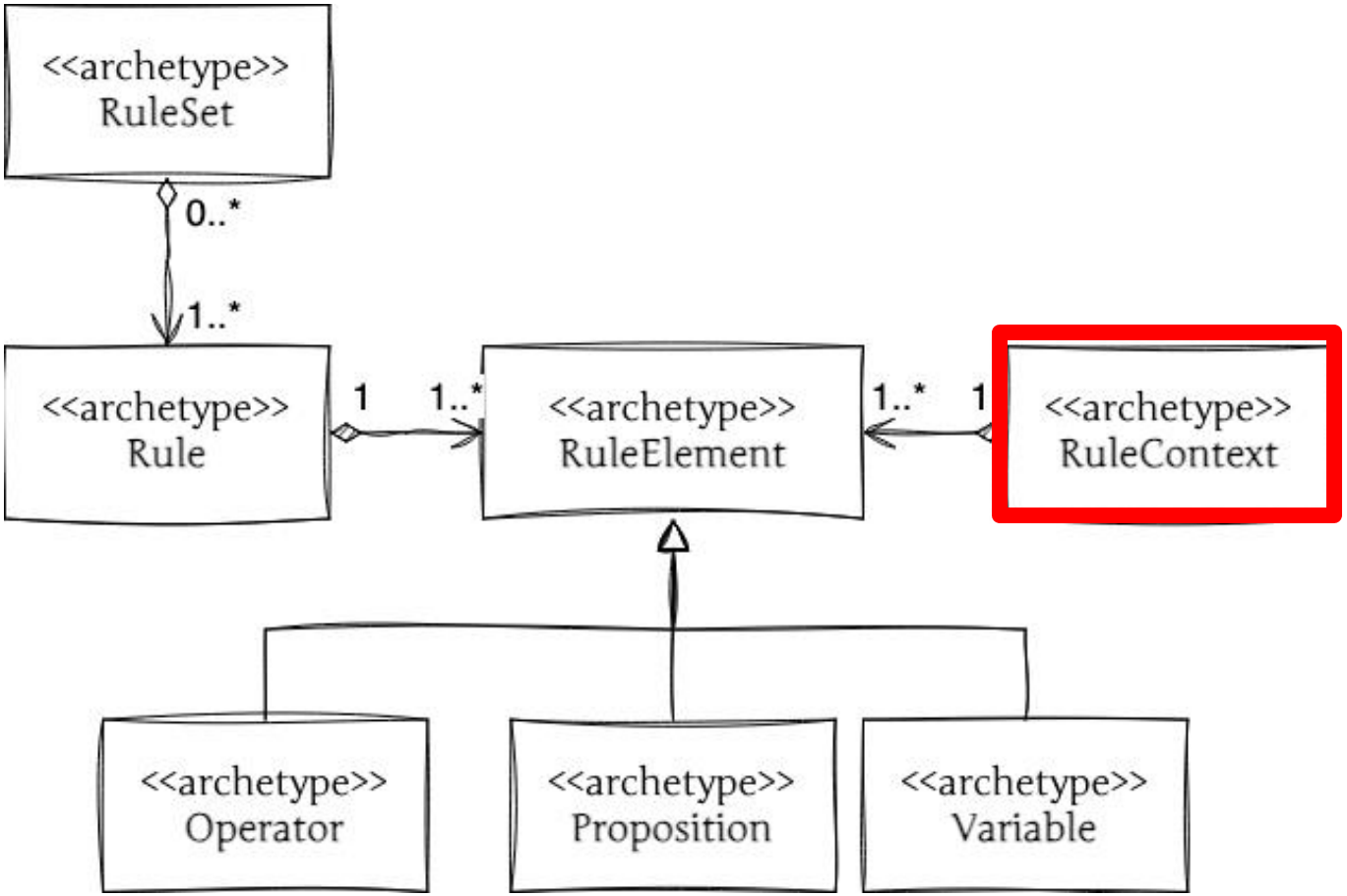
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RuleElement
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<<archetype>>
RuleContext
<<archetype>>
Operator
<<archetype>>
Proposition
<<archetype>>
Variable

```php
class Pricing
{
    2 usages  new *
    public static function createRuleContext(
        Product $product,
        UnsignedQuantity $quantity,
        CountryCode $location
    ): RuleContext {
        $elements = [
            new Variable('productCategory', $product->getCategory()),
            new Variable('quantity', $quantity->getValue()),
            new Variable('location', $location),
            new Proposition('seasonalPromotion', fn() => self::isSeasonalPromotionActive())
        ];

        return new RuleContext($elements);
    }
}
```

Operator | Proposition | Variable

Archetypes Rules JS

https://github.com/commonality/archetypes-rules

Archetypes Rules PHP

https://github.com/jakubciszak/rule-engine

Ktoś już to wymyślił

Modelowanie z użyciem archetypów biznesowych.

Jakub Ciszak