OCL contsraints for **24 Carat Jewelry Store Management System**

**1.Card class:**

* cardTypeIsValid: Ensures that the cardType attribute in the Card class is either 'Debit' or 'Credit'.

**inv: self.cardType = 'Debit' or self.cardType = 'Credit'­­­**

**2.Payment Details Class:**

* validCardNo: Ensures that the cardNo attribute in the PaymentDetails class is a positive integer.

**inv: self.cardNo > 0**

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**3.Delivery Agent class**

* validSsn: Ensures that the ssn attribute in the DeliveryAgent class is not null and has a length of 9.

**inv: self.ssn <> null and self.ssn.toString().si­­ze() = 9**

**4.PaymentMode class:**

* **Payment mode should be valid** Context paymentMode

**inv: self.paymentMode = 'Cash' or self.paymentMode = 'Card'**

**5.** Rating class:

**ratingIsNotEmpty**: Ensures that the **rating** attribute is not empty.

**inv: not self.rating.isEmpty()**

**6.Catalog  
priceIsNotNull: Ensures that the price attribute is not null.**

**inv: not self.price.oclIsUndefined()**

**7.­product category**

**validProductName**: Ensures that the **productName** attribute has a positive length.

**inv: self.productName.size() > 0**

**8.OrderItems:**

**validProductQuantity**: Ensures that the **productQuantity** attribute is a non-negative integer.

**inv: self.productQuantity >= 0**

**9.User Details class**

**usernameIsValid**: Ensures that the **username** attribute contains only alphanumeric characters. **inv self.username.matches('^[a-zA-Z0-9]+$')**

**10.Location class**

**validZipCodeFormat**: Ensures that the format of the **zip.code** attribute follows the pattern of a standard ZIP code. **inv: self.zip.code.matches('^[0-9]{5}(?:-[0-9]{4})?$')**