

# Database and API Interface

## Database:

- **enum** DiscountRank ( "BronzeParkingMedal", "SilverParkingMedal", "GoldParkingMedal", "BronzeRentingMedal", "SilverRentingMedal", "GoldRentingMedal", "Top10Monthly", "Top3Annually", "BronzeBuyingMedal", "SilverBuyingMedal", "GoldBuyingMedal" )

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- **class** Discount (Long Id, Long UserId, String Code, Double DiscountPercent, DiscountRank type)

- **class** RentingDiscount (Long Id, LocalDateTime ValidFrom, LocalDateTime ValidUntil) **extends** *Discount*

- **class** BuyingDiscount (Long Id, LocalDateTime TimeBought) **extends** *Discount*

- **class** ParkingDiscount (Long id, LocalDateTime ValidFrom, LocalDateTime ValidUntil) **extends** *Discount*

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- **enum** CouponType (Level 1, Level 2, Level 3) // Different levels of coupons

- **class** UserCoupon (Long Id, Long UserId, String Code, LocalDateTime validFrom, LocalDateTime validTo, CouponType type, Double percent) // Can be bought as a constant discount when renting/buying/parking, when registering a user, or from the inventory as an option

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- **enum** ProductType (LEAST\_SOLD, MOST\_SOLD)

- **class** ProductDiscount (Long product\_id, Integer timesBought, ProductType)

## API Interface:

### *- Information gathering from microservices:*

#### Statistics

- + postUserRank(): String userRank, Long userId (**POST**)
- + getInformationFor5LeastBoughtProducts():List<Long> product\_ids (**GET**)
- + getInformationFor5MostBoughtProducts():List<Long> product\_ids (**GET**)

#### Invoices

- + addNewCoupon(): UserCoupon (Long id, Long userId, String type) (**POST**)

### *- Information sending to microservices:*

### *- External functions to:*

#### Payment

- + applyDiscountForUserBuyingProduct(Long userId, Double priceToPay):Double discountedPrice (**GET**)
- + applyDiscountForUserRentingBike(Long userId, Double priceToPay):Double discountedPrice (**GET**)
- + applyDiscountForUserPayintParking(Long userId, Double priceToPay):Double discountedPrice (**GET**)

#### Inventory

- + getAllValidProductDiscounts(): List<ProductDiscount> productDiscounts (**GET**)

**- Internal functions:**

- + checkIfProductsOnDiscount(String productId):Boolean isProductOnDiscount
  - + applyDiscountOnProduct(String productId):Double discountPercentage
  - + applyCouponDiscount()
  - + getDiscountForUserBuyingProduct(String userId):Double discountPercentage
  - + getDiscountForUserRentingBike(String userId):Double discountPercentage
  - + getDiscountForUserPayintParking(String userId):Double discountPercentage
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## **Microservice Communication:**

*- Will gather information from:*

- **Statistics microservice** in order to implement the algorithm about the discounts

- **Invoices microservice** in order to get the information about the coupon for the particular user

*- Will send out information to:*

- **Inventory microservice** about the product discounts

- **Payments microservice** about the discount based on the information gathered from Statistics microservice