

Amazm Locker Services

- -> Fully automated package delivery survice provided by Amazon
- -> order is parkaged & place in Locker. Customer jet Notification fusing tode they can open to ther.

Questions to Interviewer

- item that can be kept in the locker? -> will all locker same size?
 -> gs there sustriction on an

Locker size

- -> How will the system make sure that multiple customer do not get some locker
- > will rustomer choose the locker of his own, or will the system arrige him a locker based on availsability
- -> Com customer get two locker for different orders at some time?

- will system keep in mind the locker & package size while assigning the locker to the customes.

Locker Status

- → Is there any time constrainst on the package that can be kept in the belief
- -> What well happen if the customer does not come to pick up his package within the valid time period?

- -> Can custome suturn an item through Amazon Locker service? -> If yes, will they get the same locker from which they
- Priked up Mu itm? to the ceistomer white
- -> from will the locker be assigned Juluaning an item?

Requirement Collections

- RI: while Ordering the item(s), the mestormer can choose the market location to pick up the order package from the locker.
- R2: One or more items can be contained in one order. An order will be placed in a package before the delivery.
- R3: There can be different size of lockess including extra small, small, medium, large, extra large, & double extra large.
- RY: The locker is assigned to the sustance based on the Sire of the order package.
- R5: When The order parkage is delivered to the locker location specified by customer to open the locker.

 Customer, a 6-digit code will be sent to the austomer to open the locker. Ro: The purkage will be kept to placed in side the locker for three days
- Ro. of the customer does not pick up the puckage from their locker within three days, the enfund process will be initiated of the unshomer worst be allowed to pickup the package any longer.

- Rg: Only lligible parkages can be pland in the locker. Such that the size of the locker.
 The parkage must be less than the size of the locker.
- R9: There can be multiple locker at every locker location
- RIO: The amazon locker is accessed within a specific time. Every location has
 its opening & closing time Therefore, the customer should pick up The package during this time period.
- RII: The item can be suturned to the Amazon locker if it doesn't match the expectation of the customer or is faulty, I there is sufund policy.

 Available for the best of
- To return cen item, the customer meds to choose the mariest locker locker will be assigned to them based for the circle of the c on the size & Location
- When the motomer picks up the order package from the lookes. the locker state is changed to closed, & the customer with the given code.

Our system "Amazon bocku" System ->

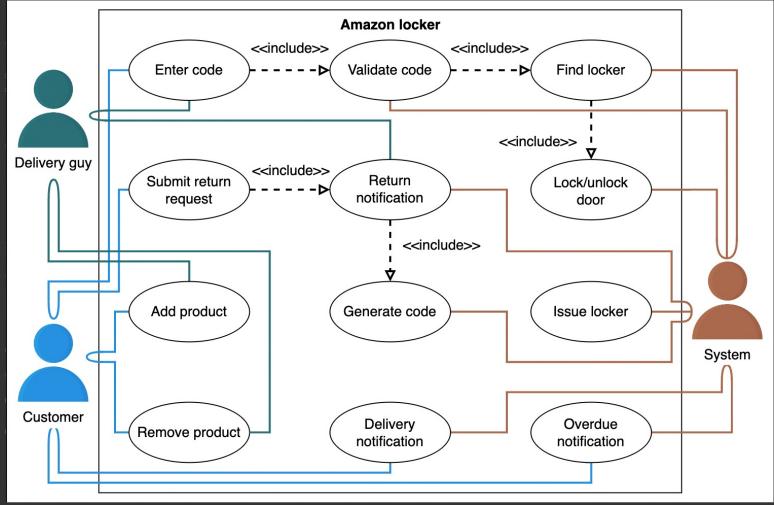
Primary Actors -

· Lerstooner · Delivery gery

Slundary actors >

· System

Customer	Delivery Guy	System
Enter code	Enter code	Validate code
Add product	Add product	Find locker
Remove product	Remove product	Lock/unlock door
Delivery notification	Return notification	Return notification
Submit return request		Generate code
Overdue notification		Issue locker
		Overdue notification
		Delivery notification



Class Diagram of Amazon Locker Services

gtern

Item

itemId : stringquantity : int

Order

Order

orderId : stringitems : Item {list}

deliveryLocation : string

Notification

Notification

customerId : string

orderId : string

lockerId : string

- code : string

+ send(): void

Parkage

Package

- packageld : string

- packageSize : double

- order : Order

+ pack(): void



LockerPackage

codeValidDays : int

- lockerld : string

- packageld : string

code : string

- packageDeliveryTime : LocalDateTime

+ isValidCode(): bool

+ verifyCode(string code) : bool



Locker

- lockerld : string

- lockerSize : LockerSize

- locationId: string

- lockerState : LockerState

+ addPackage(): bool

+ removePackage() : bool

Locker Location

LockerLocation

locationId : string

lockers : Locker {list}

latitude : double

longitude : double

openTime : time

closeTime : time

locker service

Enumerations

LockerService

- locations : LockerLocation {list}

LockerSize

ExtraSmall

Small

Medium

Large

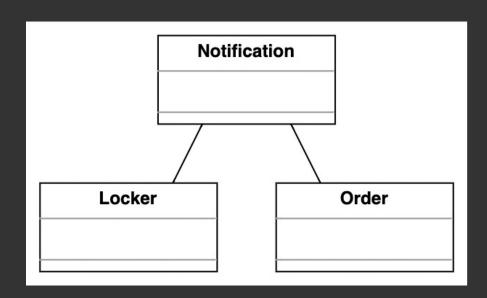
ExtraLarge

DoubleExtraLarge

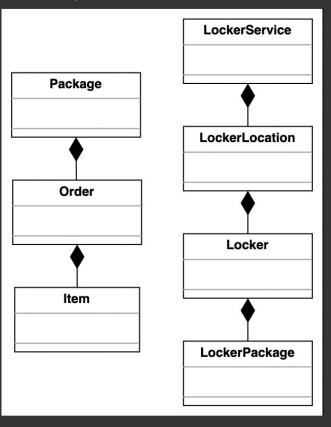
LockerState

Closed Booked Available

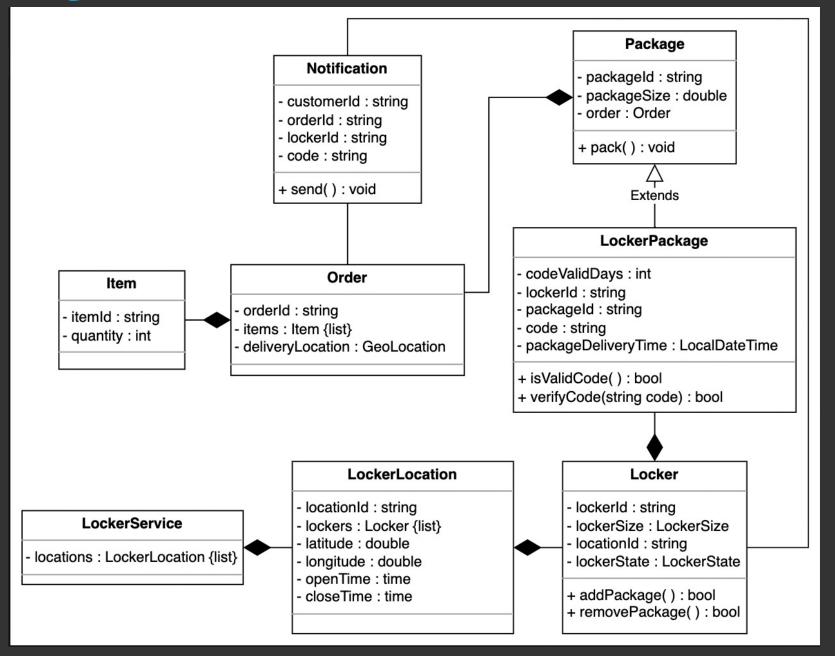
Rulation ship between the classes

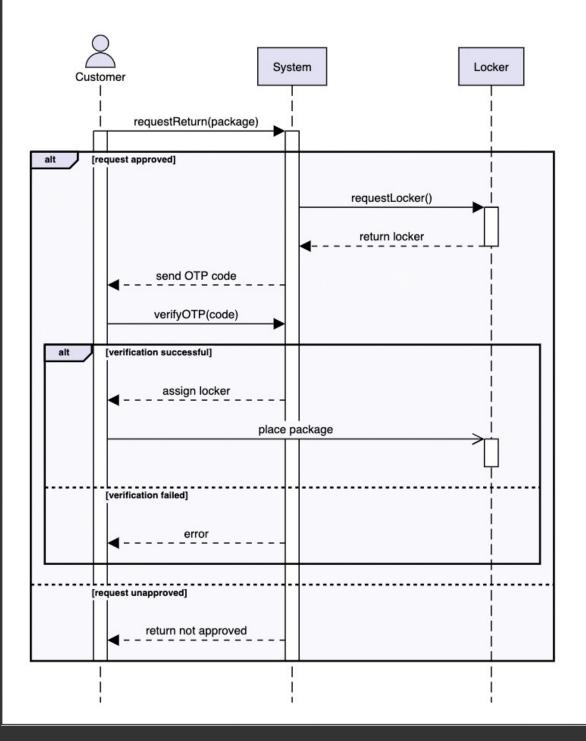


Composition

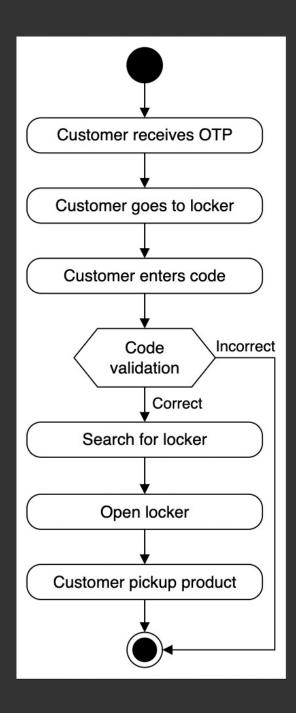


Man Diagram





Lequence diagram of Return Package



Activity Diagram for product pickup from the locker.

Rode for Amazon Locker Survice

Enumerations

```
// definition of enumerations used in the Amazon Locker service
public enum LockerSize {
    EXTRA_SMALL,
    SMALL,
    MEDIUM,
    LARGE,
    EXTRA_LARGE,
    DOUBLE_EXTRA_LARGE
}
public enum LockerState {
    CLOSED,
    BOOKED,
    AVAILABLE
}
```

Perkage & Locker Parkage

```
public class Package {
   private String packageId;
   private double packageSize;
   private Order order;

  public void pack();
}

public class LockerPackage extends Package {
   private int codeValidDays;
   private String lockerId;
   private String packageId;
   private String code;
   private Date packageDeliveryTime;

  public boolean isValidCode();
   public boolean verifyCode(String code);
}
```

Item & Order

```
public class Item {
  private String itemId;
  private int quantity;
}

public class Order {
  private String orderId;
  private List<Item> items;
  private String deliveryLocation;
}
```

Locker & Locker Location

```
public class Locker {
   private String lockerId;
   private LockerSize lockerSize;
   private String locationId;
   private LockerState lockerState;

   public boolean addPackage();
   public boolean removePackage();
}

public class LockerLocation {
   private String name;
   private List<Locker> lockers;
   private double longitude;
   private double latitude;
   private Date openTime;
   private Date closeTime;
}
```

```
public class LockerService {
    private List<LockerLocation> locations;
    // The LockerService is a Singleton class that ensures it will have only one active instance at a time
    private static LockerService lockerService = null;
    // Created a static method to access the Singleton instance of LockerService class
    public static LockerService getInstance() {
        if (lockerService == null) {
            lockerService = new LockerService();
        return lockerService;
}
public class Notification {
    private String customerId;
    private String orderId;
    private String lockerId;
    private String code;
    public void send();
```