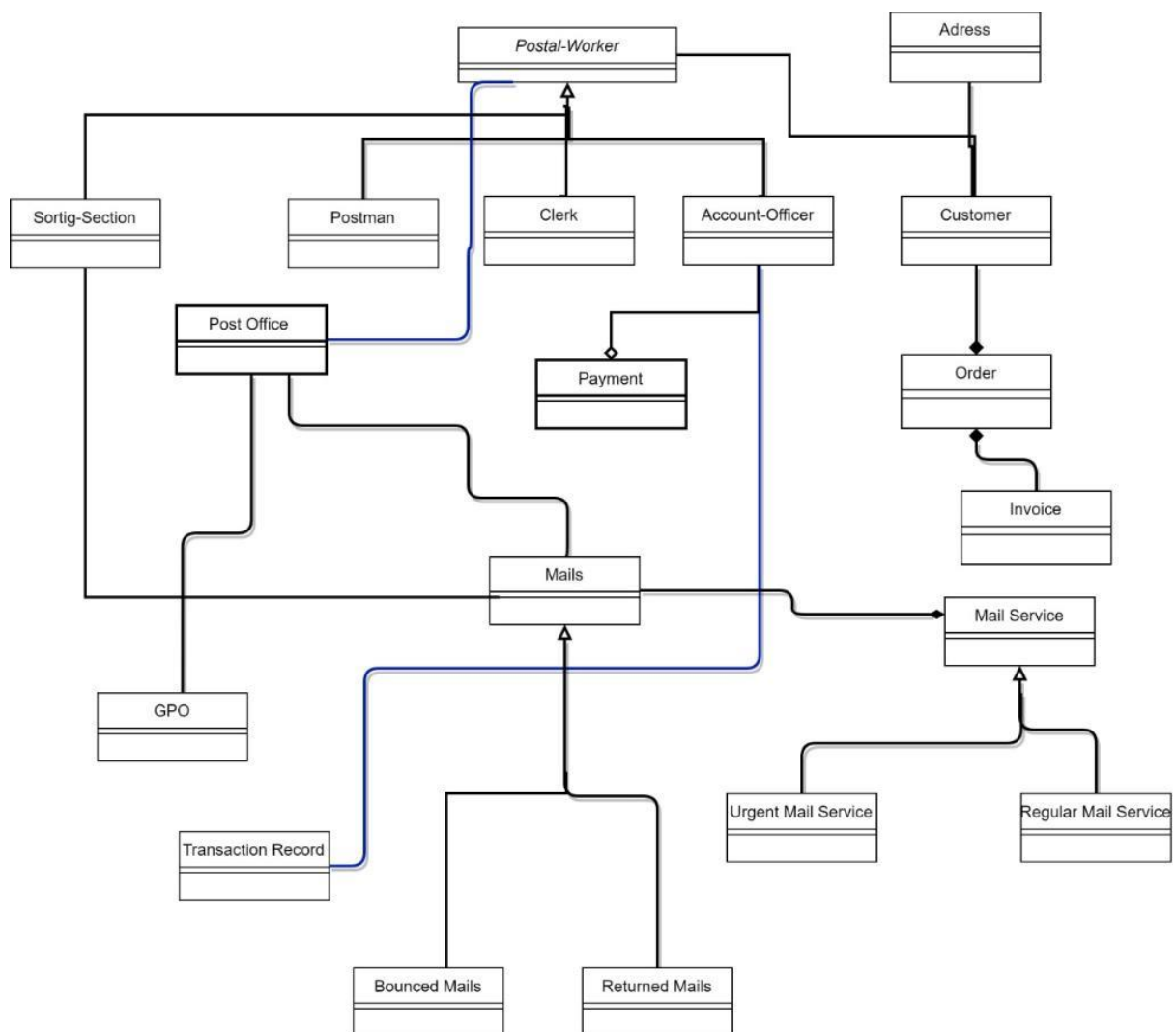


FALL 2021

Object Oriented Programming

Semester Project

## Pakistan Post Office System



### Description

The Pakistan Post wishes to develop a system that works for their day-to-day operations. The Pakistan Post is organized in the following way.

There are several post offices each of them has some unique code and address and collection centers each of which processes documents/ parcels to deliver

such as letters, packets, etc.

Mail has various services such as same day, one day, urgent and regular. Same-day mail service is for local vicinity, one day for other neighbour cities. Similarly, urgent mail service has extra charges of 20% compared to the regular mail service.

An invoice will be issued for every parcel. The invoice has a unique order ID and all the information related to the parcel/document which includes their weight, dimensions, shipment time, the address of the sender and receiver as well as contact details of both. So that if the receiver did not receive the shipment it will be returned to the sender.

There are multiple sections of the post office like the shipment section that takes the parcel/document stamped and sets it for sent to the destination. The parcel-deliver section will receive the shipments from other post offices (cities, countries) then enter them into their system and at the end, they will hand over to the postman. The not-shipped section will maintain the undelivered package and its record.

The sorting section sorts the mails in such a way that every mail that belongs to the same city/country is put in the same bag. Then sent to the GPO of that city, the GPO then further sort on the basis of local vicinity. The accounts section maintains the accounts related services.

At Post Office, you have to buy the postal stamps for your document/parcel.

These postal stamps have some specific price i.e. Rs.5, 10,20, 50, 100. The variation in the number of postal stamps is being used for parcel/document that depends upon the nature of the parcel/document i.e. the number of tickets and their price may vary because of their weight or based on distance (local, national, international). Tickets/stamps will be solved without invoice but one invoice will be issued for all stamps

sold in a day. Reports can show various categories of various parcels and tickets.

Postal-Workers are used for managing all types of mail services. The clerk stamps the postal documents/parcel and then dispatch them. The postman delivers the parcel to its destination. The Head of each Pakistan Post will finalize financial collections every day and submit them to the local GPO of each city.

Pakistan Post handles the returned and bounced mails as well.

Mails from other cities and countries are first received at the GPO then they are distributed to the different post offices based on their postal codes.

Customers (Senders) can track his/ her mail on a system with all confirmations and expected duration. Senders and recipient addresses will also store in the file system for future purposes. Search can be managed with some choices to extract data of Customers along with financial collections.

At present, the Pakistan Post has a manual record system but this needs rationalization.

## **Major Operations**

- 1- You must identify the all classes and their relationships.
- 2- Registration for customers
- 3- Head of the Post office can add the new employee, update, and delete it.
- 4- Login system for the employee
- 5- Daily report of the post office that includes amount that collected, number of

postal stamps sold from which category.

6- Maintain the record of each post office separately.

7- You must maintain the record of (the shipped item where it actually is right now). This means you have to include the tracking system.

8- Also to maintain the record of the shipments that are not delivered to the destination. And at least sent two times to the receiver before returned to the sender.

9- You sorting of the mails based on their postal addresses i.e. city, country etc.

10- Use file handling to store information of post office, employees, customers mails and other entities.

11- A complete menu for each operation that includes previous menu and multiple options on the console.

12- All the information must be stored into filing system. Instead of using databases You must have to make your project perfect by introducing filing in it.

a. Save the transactions of a person in a file.

b. Read the customer from file, create the new customer in the file same goes for the postal workers.

c. All the information related to the GPO, Post Offices and Address will be saved and retrieved from the file.

d. You have to load the data from file to arrays, and object of arrays when do required.

Type of Service	Rate of fee for weight upto 250 gm	Rate of fee for Weight Upto 500 gm	Rate of fee for every additional 500 gm
UMS (Local)	Rs.51	Rs.64	Rs.26
UMS (City to City)	Rs.86	Rs.132	Rs.43

Figure 1: Urgent Mail Service Charges

Revised Rates Effective from May 4, 2019		
S.No	Slab	Rate
1	Up to 1 Kg	Rs. 100
2	Up to 3 Kg	Rs.175
3	Up to 5 Kg	Rs. 250
4	Up to 10 Kg	Rs. 375
5	Up to 15 Kg	Rs.500
6	Up to 20 Kg	Rs. 625
7	Up to 25 Kg	Rs. 750
8	Up to 30 Kg	Rs. 875
Registration Fee for Parcels		Rs. 75

Figure 2: Normal charges