Courier Management System

Under the supervision of
Dr. Sangram Ray
Department of Computer Science and Engineering

Submitted by
Adarsh Srivastava
B180001CS
Pre-Final Year, CSE

Introduction

- Application based service
- Handles and manages the courier services
- Efficiently and smoothly
- A solution for Courier & Logistics Tracking Business
- Offers a variety of services to its users and contains different modules

Project Details

At first, let's talk about **Database** we have used for the project,

Cloud Firestore Database

- A **NOSQL** Database .i.e. Not Only SQL
- **Document**-oriented database
- Can be imagined as a cloud-hosted JSON tree
- Data is stored as JSON objects organized into **collections**
- Each document contains a set of key-value pairs
- **Primary Key** for them are usually document-id which can be either auto-generated or set by user.

Database Schema

Collections used for the project have following schemas for documents:

```
{
    'name': (String),
    "address": (String),
    "country": (String),
    "mobile": (String),
    'city': (String),
    'pincode': (String),
    'state': (String),
    'addressTag': (String),
};
```

userAddresses

```
{
  "name":  (String),
  "email":  (String),
  "phoneNumber": (String),
  "userAddresses": [ //List of Address ids
    // ....
    // ....
  ], // userAddressesToJson,
};
```

customers

```
{
    "courierName": (String),
    "type": (String),
    "length": (double),
    "breadth": (double),
    "height": (double),
    "weight": (double),
    "unitPrice": (double),
    "deliveryCharges": (double),
    "totalPrice": (double),
    "origin": {
      //Address Object: this structure will same as mentioned above
      //...
    }, // pickup Address
    "destination": {
      //Address Object: this structure will same as mentioned above
      //...
    }, // destination Address
    "quantity": (int),
    "expectedDeliveryDate": (String),
    "deliveryMan": (String)   //Employee id
    "status": (String),
  };
```

couriers

```
{
  "name": (String),
  "email": (String),
  "phoneNumber": (String),
  "assignedCouriers": [  //List of Couriers ids
     // ....
     // ....
  ], // assignedCouriersToJson,
};
```

employees

```
{
  "name": (String),
  "email": (String),
  "phoneNumber": (String),
  "availableCouriers": [  //List of Couriers ids
     // ....
     // ....
  ], // availableCouriersToJson,
  "availableEmployees": [  //List of Employee ids
     // ....
     // ....
   ], // availableEmployeesToJson,
  "assignedCouriers": [  //List of Couriers ids
     // ....
     // ....
  ], // assignedCouriersToJson,
};
```

admins

CRUD Operations

CRUD operations used in this project are:

- **Create** Operations:
  - Account creation of Customer, Employee and Admin
  - Creation of a Shipment
  - Adding an Address by a customer
- **Read** Operations:
  - Checking courier details
  - Tracking Courier
  - Checking Employee Details, etc
- **Update** Operations:
  - Changing status of the courier
  - Assigning an employee for courier delivery
  - Setting estimated delivery cost and time
- **Delete** Operations:
  - Removing an Address from list

Conclusion

- **Aim of this project:** To automate the courier management services.
- **Objective of the project:** To deliver an efficient system whose main functionality is to provide a simple and user friendly interface with all the facilities.
- Personalized to fit in any business and can either be used as a complete system or as separate modules.
- Can be used for day to day actions such as maintaining employee details, creating a shipment, checking details and tracking the courier and many more things.

THANK YOU