
Projects Requirements

All system must satisfy the following criteria:

- Enriching ideas and novel brainstorming solutions.
- Error Handling.
- Use suitable and proper data structures (Array, ArrayList, Hashmap, etc...).
- Store the data in appropriate file operations.
- Well use of OO concepts (Interfaces, Abstract classes, Polymorphism, etc...).
- Class organization in packages.
- Proper I/O Console and GUI.
- Apply concepts of concurrent programming (Threads, etc...) (If needed).
- Suitable Network programming modules (If needed).
- Utilize graphics in project statistics (If needed).
- Represent the system class diagram.

1. Pharmacy Management System:

- The **Admin** is responsible for **Managing Products** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Products**:
 - No. of Pieces sold over a specific period of time.
 - List of Suppliers and Pricing.
 - Best seller Product over a specific period of time.
 - Most revenue Product over a specific period of time.
- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Orders per each Cashier and their details.
 - Cashier with the maximum no. of Orders.
 - Cashier with the maximum revenue.
 - No. of Orders per each Supplier and details of each Order.
 - Supplier with maximum no. of Orders.
 - Supplier with the maximum revenue.
 - No. of Orders per each Customer and their details.
 - Customer with the maximum no. of Orders.
 - Customer with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Orders**:
 - View Order's details.
 - Average/Total Revenue over a specific period of time.
- The **Cashier** is responsible for **Managing Orders/Carts for Customers**:
 - Create a Cart.
 - Add/Remove Products from Cart.
 - Calculate Payment.
 - Cancel Cart.
- The **Customer** should be able to **View history of his Orders**:
 - View all his orders' details.
 - Rate the order.

2. Cloths Management System:

- The **Admin** is responsible for **Managing Products** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Products**:
 - No. of Pieces sold over a specific period of time.
 - List of Suppliers and Pricing.
 - Best seller Product over a specific period of time.
 - Most revenue Product over a specific period of time.
- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Orders per each Cashier and their details.
 - Cashier with the maximum no. of Orders.
 - Cashier with the maximum revenue.
 - No. of Orders per each Supplier and details of each Order.
 - Supplier with maximum no. of Orders.
 - Supplier with the maximum revenue.
 - No. of Orders per each Customer and their details.
 - Customer with the maximum no. of Orders.
 - Customer with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Orders**:
 - View Order's details.
 - Average/Total Revenue over a specific period of time.
- The **Cashier** is responsible for **Managing Orders/Carts for Customers**:
 - Create a Cart.
 - Add/Remove Products from Cart.
 - Calculate Payment.
 - Cancel Cart.
- The **Customer** should be able to **View history of his Orders**:
 - View all his orders' details.
 - Rate the order.

3. Hotel Management System:

- The **Admin** is responsible for **Managing Rooms** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Rooms**:
 - Category the Room belongs to.
 - No. of Reservations over a specific period of time.
 - Most reserved Room (and Category it belongs to) over a specific period of time.
 - Most revenue Room (and Category it belongs to) over a specific period of time.
- The **Admin** is responsible for **Managing Additional Services** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Additional Services**:
 - No. of Request over a specific period of time.
 - Most requested Service over a specific period of time.
 - Most revenue Service over a specific period of time.
- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Reservations per each Receptionist and their details.
 - Receptionist with the maximum no. of Reservations.
 - Receptionist with the maximum revenue.
 - No. of Reservations per each Guest and their details.
 - Guest with the maximum no. of Reservations.
 - Guest with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Reservations**:
 - View Reservation's details.
 - Average/Total Revenue over a specific period of time.
- The **Receptionist** is responsible for **Managing Reservations for Guests**:
 - Create Reservation.
 - Select Category and Guest's Preferences in choosing the Room.
 - Add Additional Services to the Reservation.
 - Cancel Reservation.
 - Checkout.
- The **Guest** should be able to **View history of his Reservations**:
 - View all his reservation's details.
 - Rate their booking.

4. Restaurant Management System:

- The **Admin** is responsible for **Managing Tables** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Tables**:
 - Category the Table belongs to.
 - No. of Reservations over a specific period of time.
 - Most reserved Table (and Category it belongs to) over a specific period of time.
 - Most revenue Table (and Category it belongs to) over a specific period of time.
- The **Admin** is responsible for **Managing Menus/Meals** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Menus/Meals**:
 - Menu the Table belongs to.
 - No. of Orders over a specific period of time.
 - Most Ordered Meal (and Category it belongs to) over a specific period of time.
- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Reservations per each Receptionist and their details.
 - Receptionist with the maximum no. of Reservations.
 - Receptionist with the maximum revenue.
 - No. of Reservations per each Guest and their details.
 - Guest with the maximum no. of Reservations.
 - Guest with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Reservations**:
 - View Reservation's details.
 - Average/Total Revenue over a specific period of time.
- The **Receptionist** is responsible for **Managing Reservations for Guests**:
 - Create Reservation.
 - Select Category and Guest's Preferences in choosing the Table.
 - Add Ordered Meals to the Reservation.
 - Cancel Reservation.
 - Calculate Payment.
- The **Guest** should be able to **View history of his Reservations**:
 - View all his reservation's details.
 - Rate their booking.

5. Bus Ticket Booking System:

- The **Admin** is responsible for **Managing Vehicles** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Vehicles**:
 - Category the Vehicles belongs to.
 - No. of Trips over a specific period of time.
 - No. of Bookings over a specific period of time.
 - Most booked Vehicle (and Category it belongs to) over a specific period of time.
 - Most revenue Vehicle (and Category it belongs to) over a specific period of time.
- The **Admin** is responsible for **Managing Trips** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Trips**:
 - Category the Trip belongs to.
 - No. of Bookings over a specific period of time.
 - Most booked Trip (and Category it belongs to) over a specific period of time.
 - Most revenue Trip (and Category it belongs to) over a specific period of time.
- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Bookings per each Receptionist and their details.
 - Receptionist with the maximum no. of Bookings.
 - Receptionist with the maximum revenue.
 - No. of Bookings per each Guest and their details.
 - Guest with the maximum no. of Bookings.
 - Guest with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Bookings**:
 - View Booking’s details.
 - Average/Total Revenue over a specific period of time.
- The **Receptionist** is responsible for **Managing Bookings for Guests**:
 - Create Booking.
 - Select Category and Guest’s Preferences in choosing the Booking (Select Trip Details).
 - Cancel Booking.
 - Calculate Payment.
- The **Guest** should be able to **View history of his Bookings**:
 - View all his bookings’ details.
 - Rate their booking.

6. Movie Ticket Booking System:

- The **Admin** is responsible for **Managing Movies** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Movies**:
 - Category the Movie belongs to.
 - No. of Bookings over a specific period of time.
 - Most booked Movie (and Category it belongs to) over a specific period of time.
 - Most revenue Movie (and Category it belongs to) over a specific period of time.
- The **Admin** is responsible for **Managing Shows** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Shows**:
 - No. of Bookings over a specific period of time.
 - Most booked Show (and Category it belongs to) over a specific period of time.
 - Most revenue Show (and Category it belongs to) over a specific period of time.
- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Bookings per each Receptionist and their details.
 - Receptionist with the maximum no. of Bookings.
 - Receptionist with the maximum revenue.
 - No. of Bookings per each Guest and their details.
 - Guest with the maximum no. of Bookings.
 - Guest with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Bookings**:
 - View Booking’s details.
 - Average/Total Revenue over a specific period of time.
- The **Receptionist** is responsible for **Managing Bookings for Guests**:
 - Create Booking.
 - Select Category and Guest’s Preferences in choosing the Show (Select Movie, Hall details, Timings).
 - Cancel Booking.
 - Calculate Payment.
- The **Guest** should be able to **View history of his Bookings**:
 - View all his bookings’ details.
 - Rate their booking.

7. Home Rental System:

- The **Admin** is responsible for **Managing Cars** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Houses**:
 - Category the House belongs to.
 - No. of Rentals over a specific period of time.
 - Most rented House (and Category it belongs to) over a specific period of time.
 - Most revenue House (and Category it belongs to) over a specific period of time.
- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Bookings per each Receptionist and their details.
 - Receptionist with the maximum no. of Bookings.
 - Receptionist with the maximum revenue.
 - No. of Bookings per each Renter and their details.
 - Renter with the maximum no. of Bookings.
 - Renter with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Bookings**:
 - View Booking's details.
 - Average/Total Revenue over a specific period of time.
- The **Receptionist** is responsible for **Managing Bookings for Renters**:
 - Create Booking.
 - Select Category and Guest's Preferences in choosing the House.
 - Specify Rental terms details.
 - Cancel Booking.
 - Calculate Payment.
- The **Renter** should be able to **View history of his Bookings**:
 - View all his bookings' details.
 - Rate their booking.

8. Library Management System:

- The **Admin** is responsible for **Managing Books** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Books**:
 - Category the Book belongs to.
 - No. of Borrows over a specific period of time.
 - Most borrowed Book (and Category it belongs to) over a specific period of time.
 - Most revenue Book (and Category it belongs to) over a specific period of time.
- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Borrowings per each Librarian and their details.
 - Librarian with the maximum no. of Borrowings.
 - Librarian with the maximum revenue.
 - No. of Orders per each Supplier and details of each Order.
 - Supplier with maximum no. of Orders.
 - Supplier with the maximum revenue.
 - No. of Borrowings per each Borrower and their details.
 - Borrower with the maximum no. of Borrowings.
 - Borrower with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Borrowings**:
 - View Borrowings’ details.
 - Average/Total Revenue over a specific period of time.
- The **Librarian** is responsible for **Managing Borrowings for Borrowers**:
 - Create Borrowing.
 - Select Category and Borrower’s Preferences in choosing the Book.
 - Specify Borrowing term details.
 - Cancel Borrowing.
 - Calculate Payment.
- The **Borrowers** should be able to **View history of his Borrowings**:
 - View all his borrowing’s details.
 - Rate the books they borrowed.

9. Otlob:

- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Orders per each Seller and their details.
 - Seller with the maximum no. of Orders.
 - Seller with the maximum revenue.
 - No. of Orders per each Customer and their details.
 - Customer with the maximum no. of Orders.
 - Customer with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Orders**:
 - View Orders’ details.
 - Average/Total Revenue over a specific period of time.
- The **Seller** is responsible for **Managing their Products** (Add - Edit - Remove - List “(Search) by any field”).
- The **Seller** is responsible for **Viewing Reports/Data about their Products**:
 - No. of Pieces sold over a specific period of time.
 - Best seller Product over a specific period of time.
 - Most revenue Product over a specific period of time.
- The **Seller** is responsible for **Viewing Reports/Data about their Orders**:
 - View Orders’ details.
 - Changing the Orders’ status from pending to shipped once it’s ready.
 - Average/Total Revenue over a specific period of time.
- The **Customer** is responsible for **Managing Orders/Carts**:
 - Create Cart.
 - (Search) by any field for Products
 - Add/Remove Products to/from Cart.
 - Add Address.
 - View Payment + Confirm Cart.
 - Cancel Cart.
- The Customer should be able to **View history of his Orders**:
 - View all his orders’ details.
 - Track their orders’ status.
 - Rate their orders.

10. Recruitment Management System:

- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Recruitments per each Company and their details.
 - Company with the maximum no. of Recruitments and their Categories.
 - No. of Recruitments (and their Categories) applied upon by Applicant and their details.
 - Applicant that applied for the maximum no. of Recruitments.
- The **Admin** is responsible for **Viewing Reports/Data about Recruitments**:
 - View Recruitments’ details.
 - Category/Job Title with maximum no. of Recruitments over a specific period of time.
 - Average/Total Recruitments over a specific period of time.
- The **Company** is responsible for **Managing their Recruitments** (Add - Edit - Remove - List “(Search) by any field”).
- The **Company** is responsible for **Viewing Reports/Data about their Recruitments**:
 - View Applicant per each Recruitment.
 - Accept Applicant and arrange Interview and inform the Applicant.
 - Reject Applicant and inform them.
 - No. of Recruitments made over a specific period of time.
 - Most Category/Job Title applied to over a specific period of time.
- The **Applicant** is responsible for **Managing Applications**:
 - (Search) by any field for Category/Job Title.
 - Apply for Job and attach a CV.
 - View updates made by the Company on the applied Job (Acceptance/Rejection/Interview Timing).

11. Billing Management System:

- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Bills per each Company and their details.
 - Company with the maximum no. of Bills.
 - Company with the maximum revenue.
 - No. of Bills per each Customer and their details.
 - Customer with the maximum no. of Bills.
 - Customer with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Bills**:
 - View Bills’ details and track its status (paid/unpaid).
 - Average/Total Revenue over a specific period of time.
- The **Company** is responsible for **Managing their Bills** (Add - Edit - Remove - List “(Search) by any field”).
- The **Company** is responsible for **Viewing Reports/Data about Bills**:
 - No. of Bills made/paid over a specific period of time and their details.
 - Average/Total Revenue over a specific period of time and their details.
- The **Customer** is responsible for **Managing their Bills**:
 - View all their Bills with their details.
 - (Search) by any field for Bills.
 - Pay the Bills.

12. Cab Booking System:

- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List “(Search) by any field”).
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Trips per each Driver and their details.
 - Driver with the maximum no. of Trips.
 - Driver with the maximum revenue.
 - No. of Trips per each Passenger and their details.
 - Passenger with the maximum no. of Trips.
 - Passenger with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Trips**:
 - View Trips’ details.
 - Average/Total Revenue over a specific period of time.
- The **Driver** is responsible for **Managing Trips**:
 - View Trips Requests around him.
 - Accept Trip.
 - Accept Payment at the end of the Trip.
- The **Driver** is responsible for **Viewing Reports/Data about their Trips**:
 - No. of Trips made over a specific period of time and their details.
 - Average/Total Revenue over a specific period of time and their details.
- The **Passenger** is responsible for **Managing Trips**:
 - Request Trip.
 - Add Source and Destination.
- The **Passenger** is responsible for **Viewing Reports/Data about their Trips**:
 - View All their Trips’ details.
 - No. of Trips made over a specific period of time.

13. E-Commerce System:

- The **Admin** is responsible for **Managing Products** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Products**:
 - No. of Pieces sold over a specific period of time.
 - List of Suppliers and Pricing.
 - Best seller Product over a specific period of time.
 - Most revenue Product over a specific period of time.
- The **Admin** is responsible for **Managing All Users** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Users**:
 - No. of Orders per each Supplier and details of each Order.
 - Supplier with maximum no. of Orders.
 - Supplier with the maximum revenue.
 - No. of Orders per each Customer and their details.
 - Customer with the maximum no. of Orders.
 - Customer with the maximum revenue.
- The **Admin** is responsible for **Viewing Reports/Data about Orders**:
 - View Order's details.
 - Average/Total Revenue over a specific period of time.
- The **Seller** is responsible for **Managing their Products** (Add - Edit - Remove - List "(Search) by any field").
- The **Seller** is responsible for **Viewing Reports/Data about their Products**:
 - No. of Pieces sold over a specific period of time.
 - Best seller Product over a specific period of time.
 - Most revenue Product over a specific period of time.
- The **Seller** is responsible for **Viewing Reports/Data about their Orders**:
 - View Orders' details.
 - Average/Total Revenue over a specific period of time.
- The **Customer** is responsible for **Managing Orders/Carts**:
 - Create Cart.
 - (Search) by any field for Products.
 - Add/Remove Products from Cart.
 - Make Payment.
 - Cancel Cart.
- The **Customer** is responsible for **Viewing Reports/Data about their Orders**:
 - View All their Orders' details.
 - No. of Trips made over a specific period of time and their details.

14. Clinic Management System:

- The **Admin** is responsible for **Managing Staff members** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Managing Patients** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Managing Departments** (Add - Edit - Remove - List "(Search) by any field").
- The **Admin** is responsible for **Viewing Reports/Data about Staff**:
 - View a list of all staff members and their details.
- The **Admin** is responsible for **Viewing Reports/Data about Patients**:
 - View a list of all patients and their details.
- The **Doctor** is responsible for **Managing Appointments**:
 - View their appointment schedule.
 - Confirm, reschedule, or cancel appointments.
- The **Doctor** is responsible for **Viewing Reports/Data about Patients**:
 - Access patient medical records and treatment history.
 - View patient diagnoses, prescriptions, and lab results.
- The **Doctor** is responsible for **Prescribe medications and treatments**:
 - Create and manage patient treatment plans and prescriptions.
- The **Patient** is responsible for **Appointment Scheduling**:
 - Request and manage appointments with doctors or departments.
- The **Patient** is responsible for **Accessing Medical Record**:
 - View personal medical records and treatment history.
- The **Patient** is responsible for **Billing and Payment**:
 - View and pay medical bills and hospital charges.

15. Strategy Game (ex: Age of Empires)

16. Monopoly

17. Plants vs. Zombies