

Department of Computer Science-Software Engineering

Software Design & Architecture

Lab MidTerm



COMSATS University Islamabad

Dhamtor campus

Submitted to:

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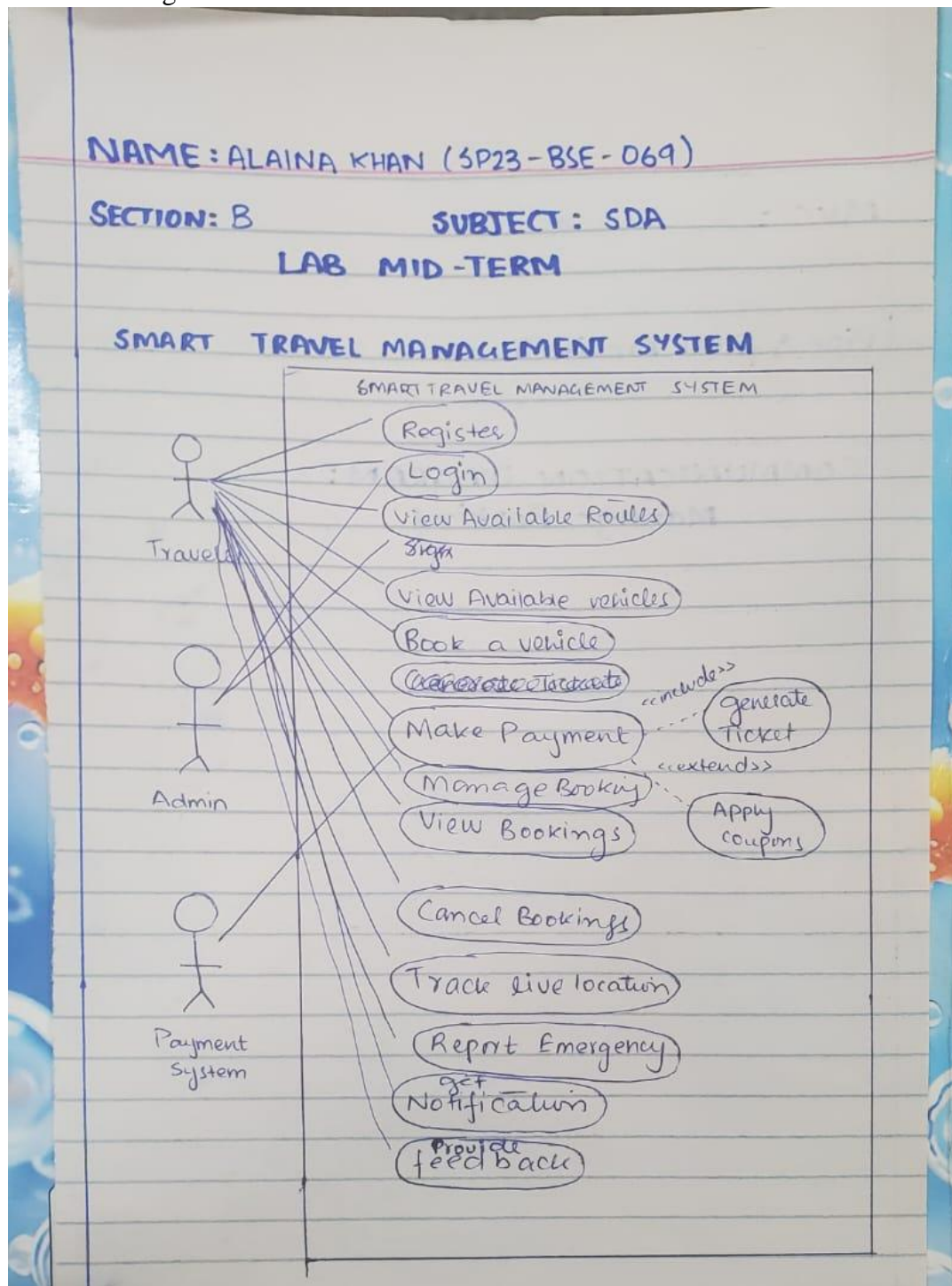
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Smart Travel Management System (STMS)

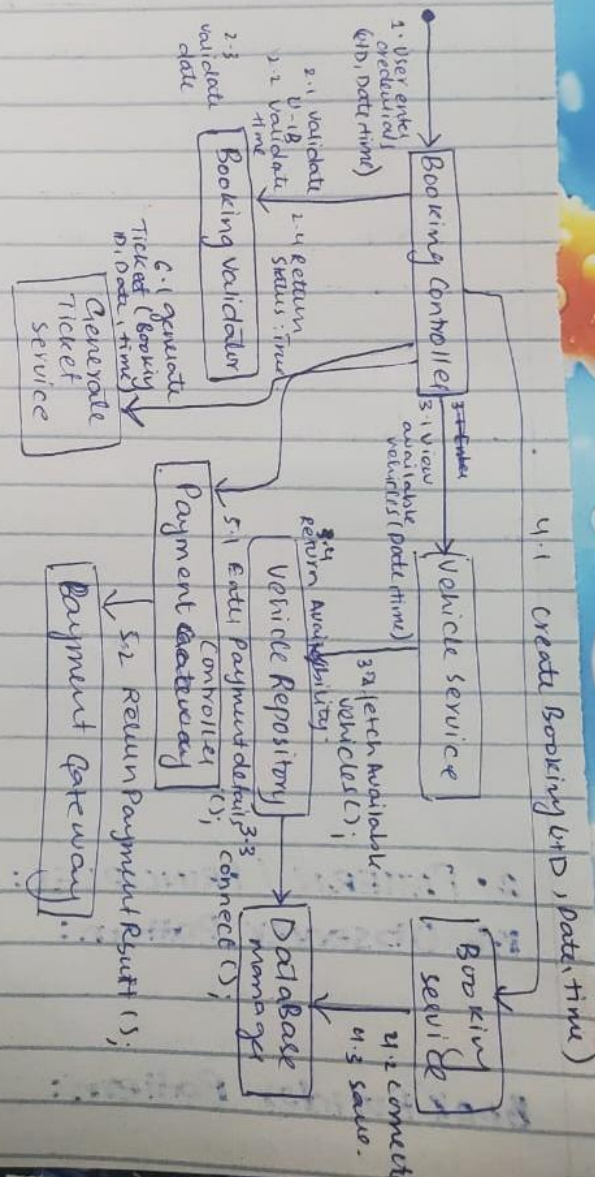
The **Smart Transport Management System (STMS)** is a digital platform designed to streamline and manage all aspects of transportation services. It automates transport registrations, vehicle tracking, route assignments, fee payments, and role-based access for users such as drivers, transport checkers, and finance officers.

Use Case Diagram:



Communication Diagram:

COMMUNICATION DIAGRAM: Manage Booking



Name of Principles/Patterns Used::

Singleton: The DatabaseManager makes sure there's only one object handling the database, so everything stays connected properly without making extra copies.

Builder Pattern (idea for future use): If later we need to make a booking step by step (like setting vehicle, user, date one by one), we can use a builder to build it neatly.

Controller Pattern: The BookingController is like the manager it listens to the user, then sends work to different people (other classes) to get the job done.

Separation of Concerns: Every class here has its own job. Like one checks availability, one makes payments, one handles tickets nobody mixes their work, so the code stays clean and easy to manage.