



VIT[®]

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SPACE FOR EVERYONE

**CSI1007 – Software Engineering Principles
Laboratory**

23MID0141

DHANUSH KUMAR G



Description of the Project:The “Space for Everyone” project is a website platform designed to connect payload seekers (individuals or organizations needing launch or transport services) with service providers offering those services (launch services). It ensures efficient management of logistics and cost estimation while facilitating seamless interaction and functionality for payload seekers , including researchers, startups, and space enthusiasts. The platform aims to make space more accessible by providing essential tools, resources, and infrastructure to plan and execute payload missions effectively



Scope of the Project: The scope of the “space for everyone” project emphasizes the design, development, and implementation of website. The platform aims to address the needs of payload seekers by offering streamlined functionalities and comprehensive support for space mission planning and execution



Impact of the developing Project:

Economic Impact:

- 1) The integration of payload owners and providers (launch and transportation services) has an economic impact on resource utilization efficiency.
- 2) Facilitating connections between small payload seekers and launch service providers encourages more companies to enter the aerospace market, promoting industry growth.



Technological Impact:

- 1) The inclusion of various transportation methods (roadway, airway, waterway) highlights flexibility and promotes innovation in multi-modal payload delivery.
- 2) Accommodating circular and elliptical orbits expands technological inclusivity, catering to diverse satellite or mission needs.



Social Impact:

- 1) By creating a system that connects smaller payload owners to service providers, the project lowers barriers to entry, allowing startups, universities, and developing nations to participate in space missions.
- 2) By incorporating location-based services and various transportation modes, the project can serve entities globally, regardless of their geographic constraints

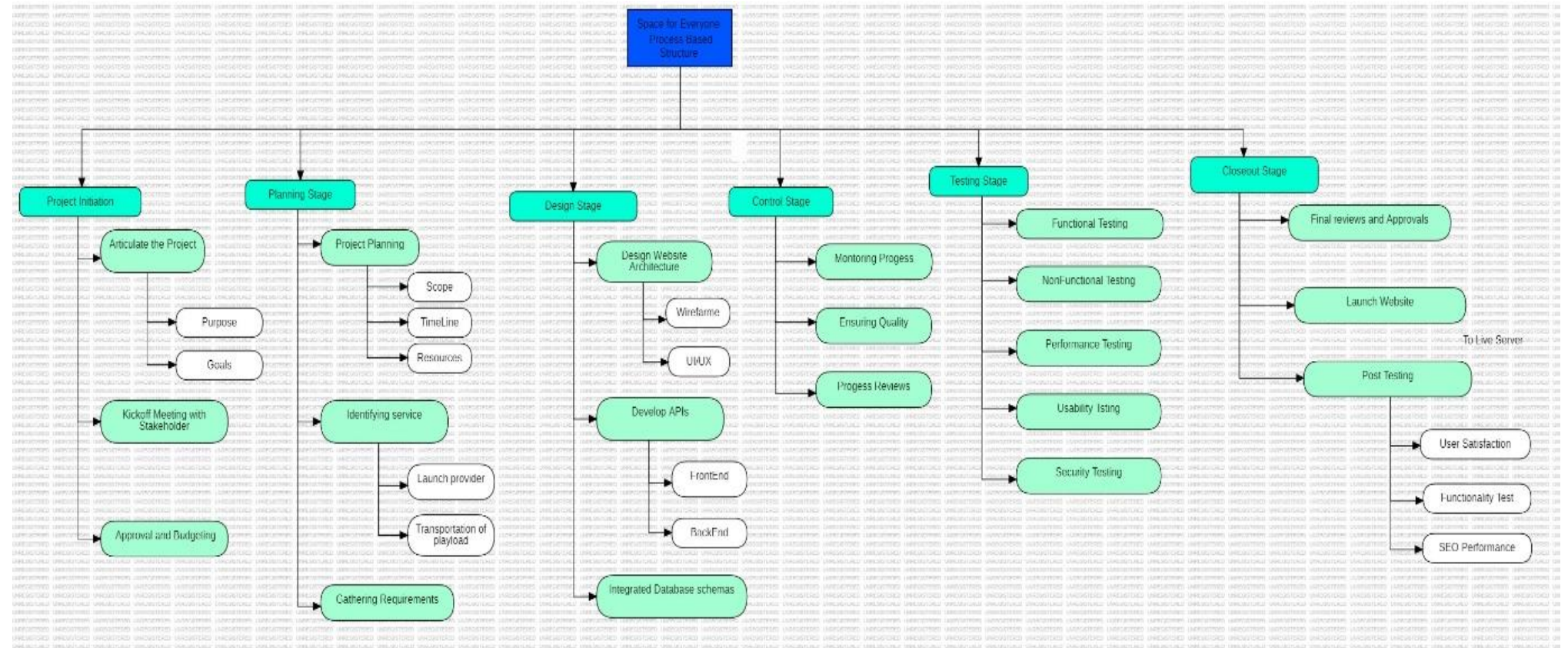


Environmental Impact:

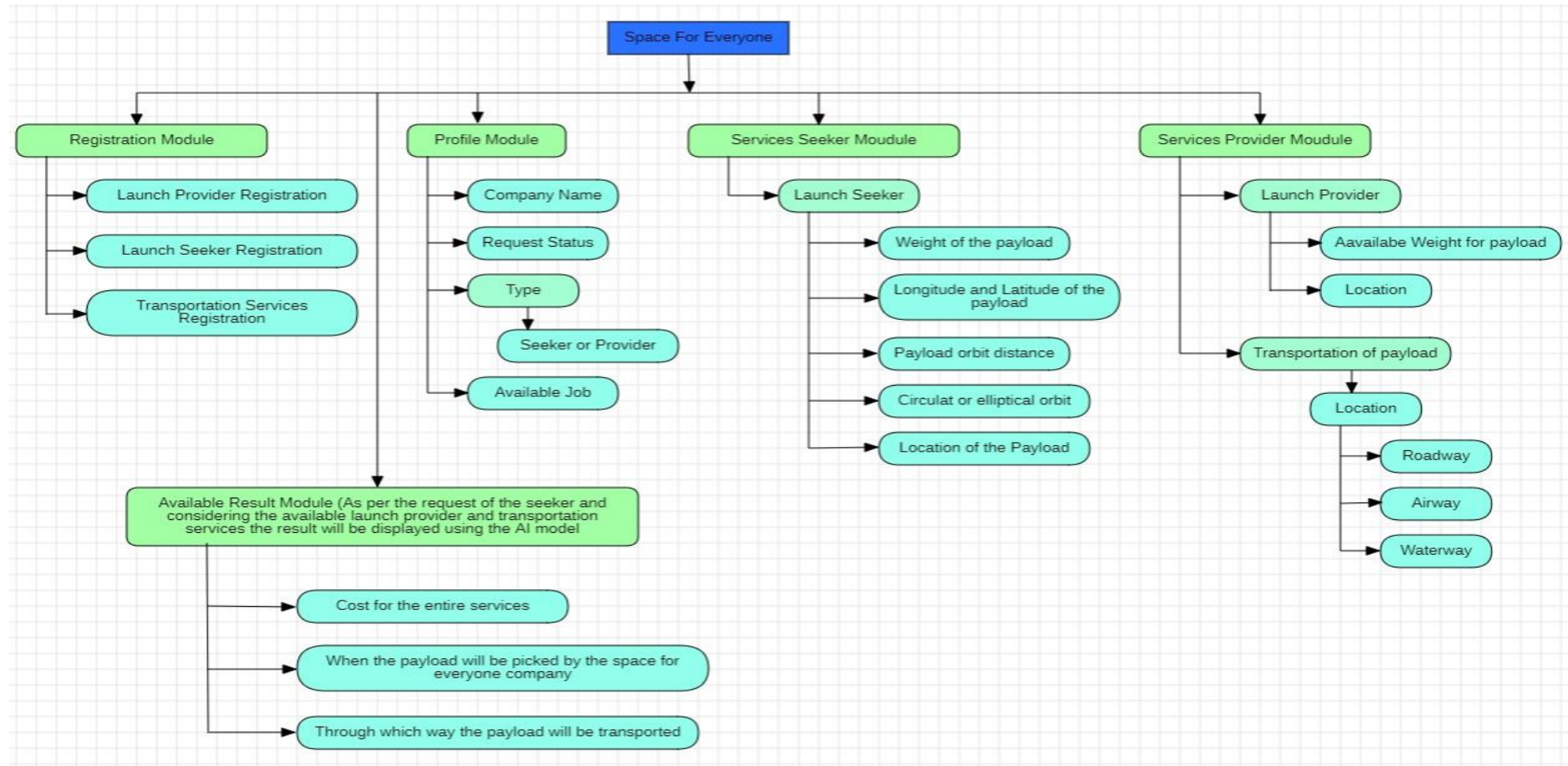
- 1) Sharing launch and transport resources minimizes duplication and maximizes the utilization of available capacity, reducing waste.

Work Breakdown Structure

• Process-Based Work Breakdown Structure



- **Product-Based Work Breakdown Structure**



SRS Document

- **Functional Requirements**

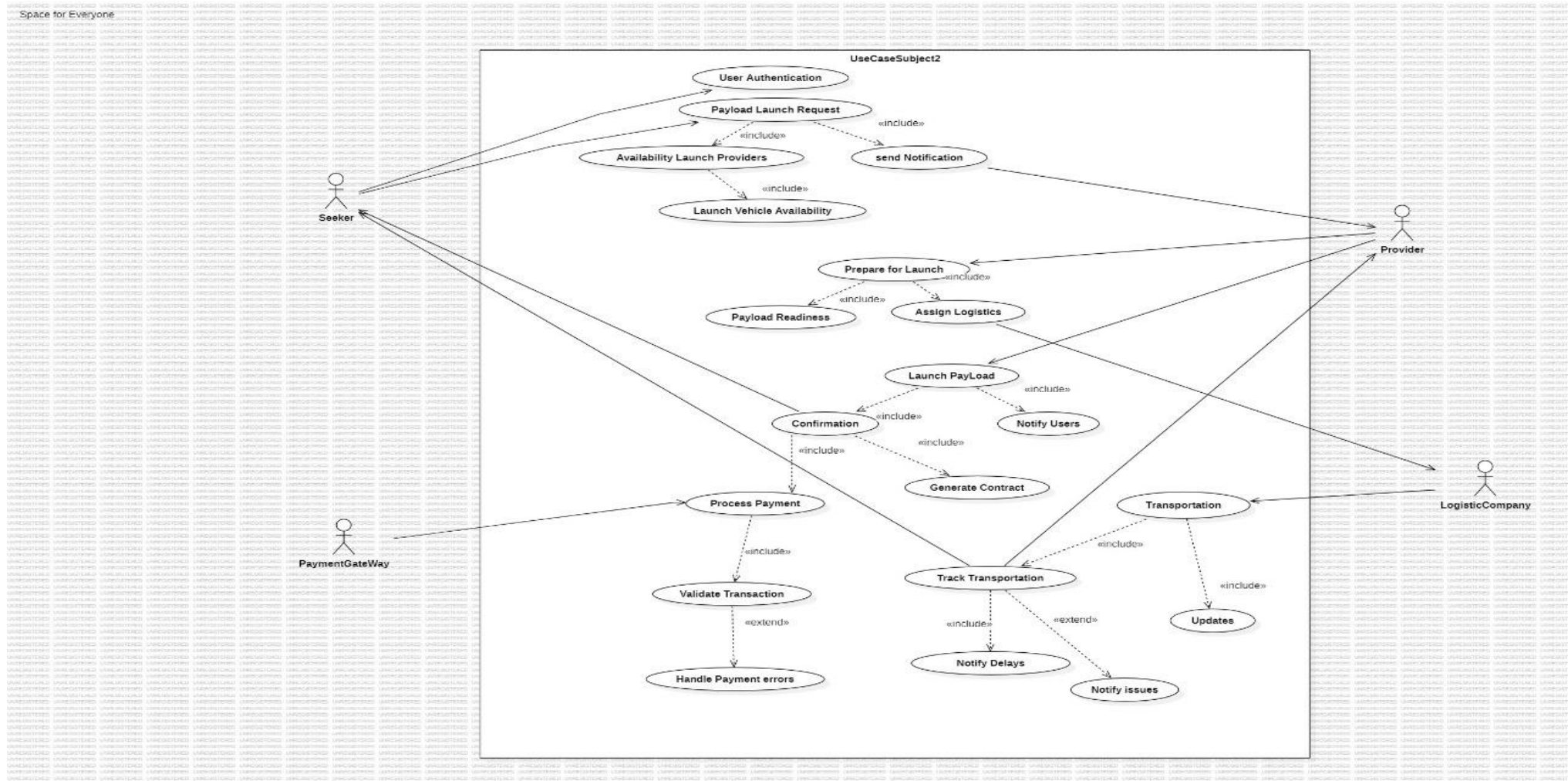
1. Launch seekers should be able to easily access launch vehicles from providers around the world.
2. Launch providers should be able to offer their launch vehicle services to customers worldwide.
3. Transportation management service providers should be able to seamlessly connect seekers and providers, ensuring the safe and timely transportation of payloads.

- **Non-Functional Requirements**

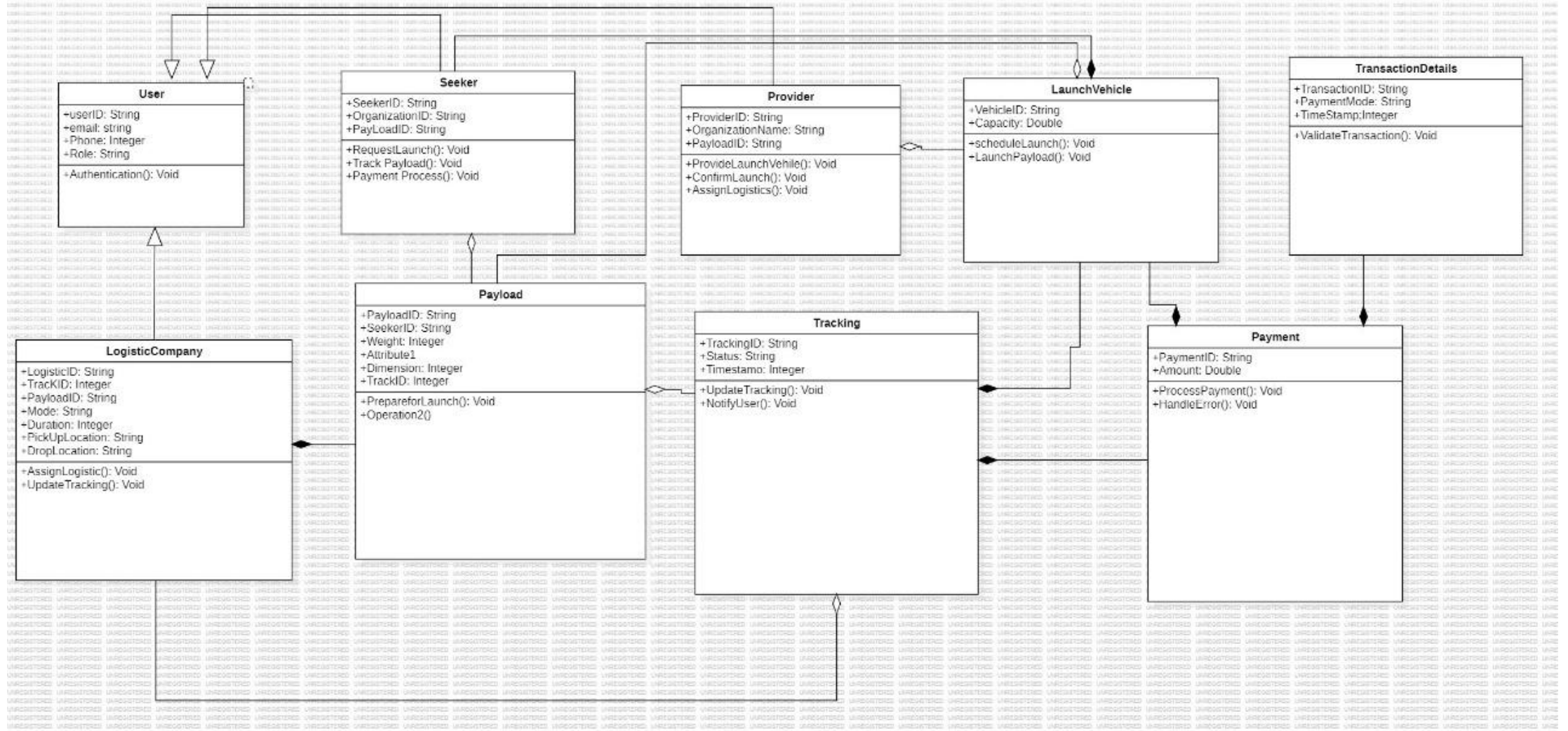
1. The platform should process up to 1,000 launch service requests per second, ensuring fast and reliable performance during high-demand periods.
2. All communication between users and the platform must be encrypted using **HTTPS** to protect sensitive data during transmission.
3. Customer and payload details, including **personal information and payment records**, must be stored securely and handled with strict privacy protocols.
4. The platform should have a **user-friendly interface**, allowing seekers and providers to easily navigate, submit requests, and complete transactions.
5. The system should guarantee **99.9% uptime** to ensure continuous service availability.

UML - Diagrams

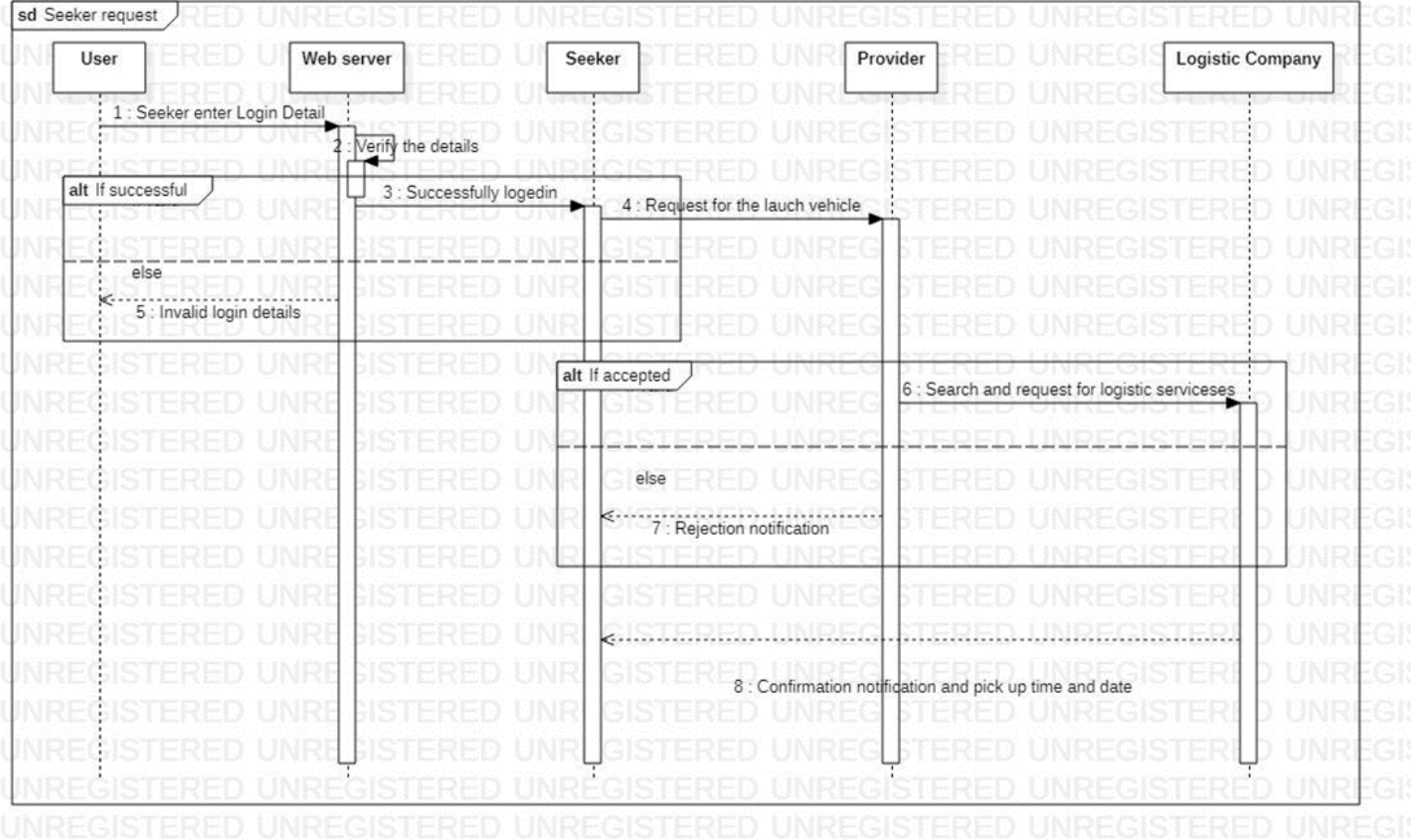
- use-case diagram

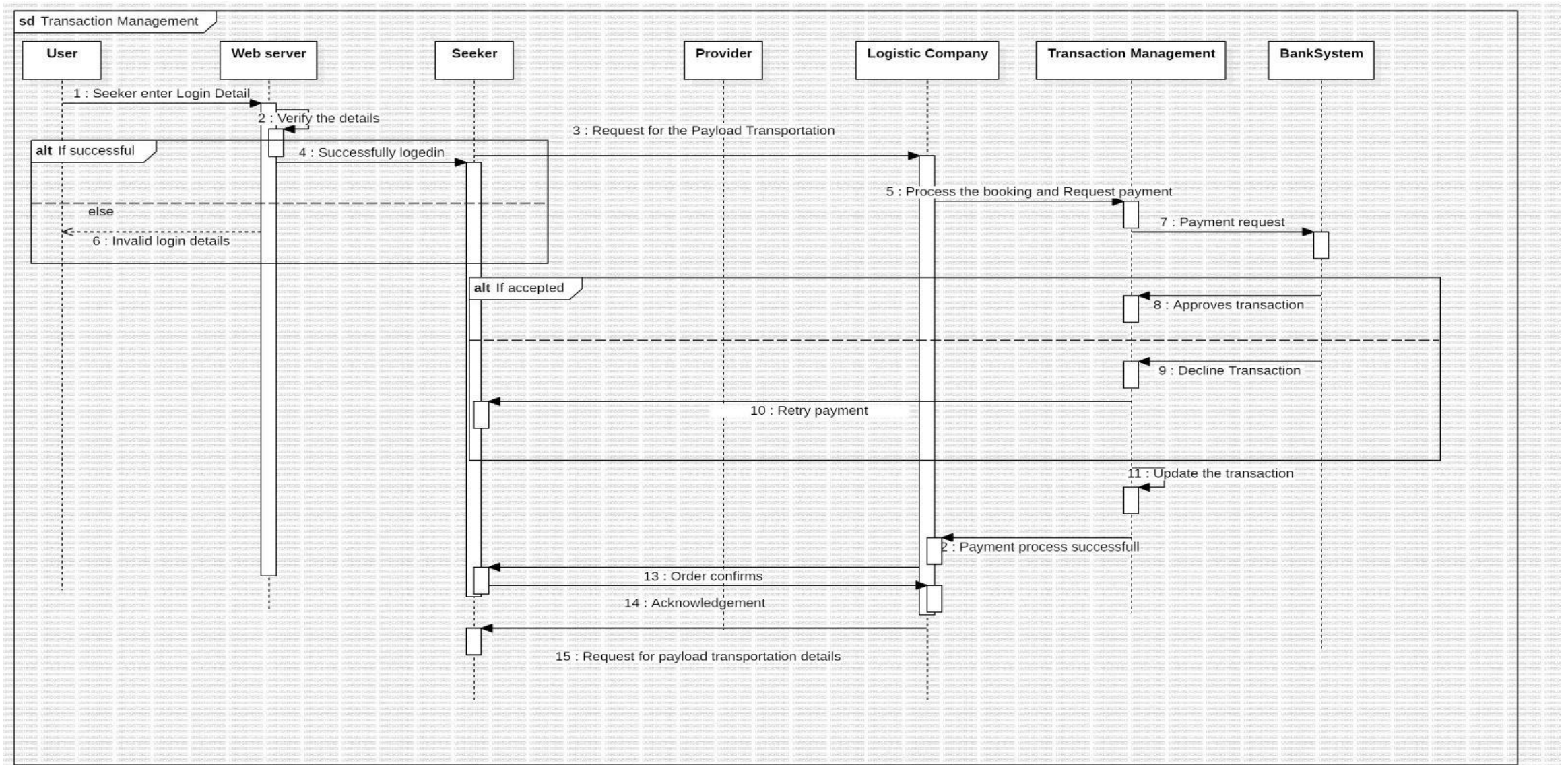


- class diagram



- sequence diagram





Testing

- **Payload Request by User Test**

CaseID: SPE002

Test Scenario: Seeker Request for Payload Launch Test Description: A seeker submits a payload request, the system stores the request and process launch request.

Test Steps:

- 1.Log in as Seeker
- 2.Navigate to Request Payload
- 3.Enter payload details
- 4.Click Submit
- 5.Confirmation message displayed

Test Data: Eg:

- 1.seeker@example.com, Pass@12345 to login
- 2.Weight: 2000kg, Dimensions: 5m x 3m x 2m

Expected Result: Request for Payload Launch successful

Actual Result: Requested Payload Details is invalid Pass/Fail: Fail

- **Launch Vehicle Scheduling**

Test CaseID: SPE012

Test Scenario: Assign a launch vehicle to an approved payload.

Test Description: Assign a launch vehicle to an approved payload and before that Payload must be approved for launch

Test Steps:

1. Log in as Provider
2. Navigate to Request Payload Launch and Provide transport if needed.
3. Enter Launch vehicle details
4. Click Submit
5. Confirmation message displayed

Test Data:

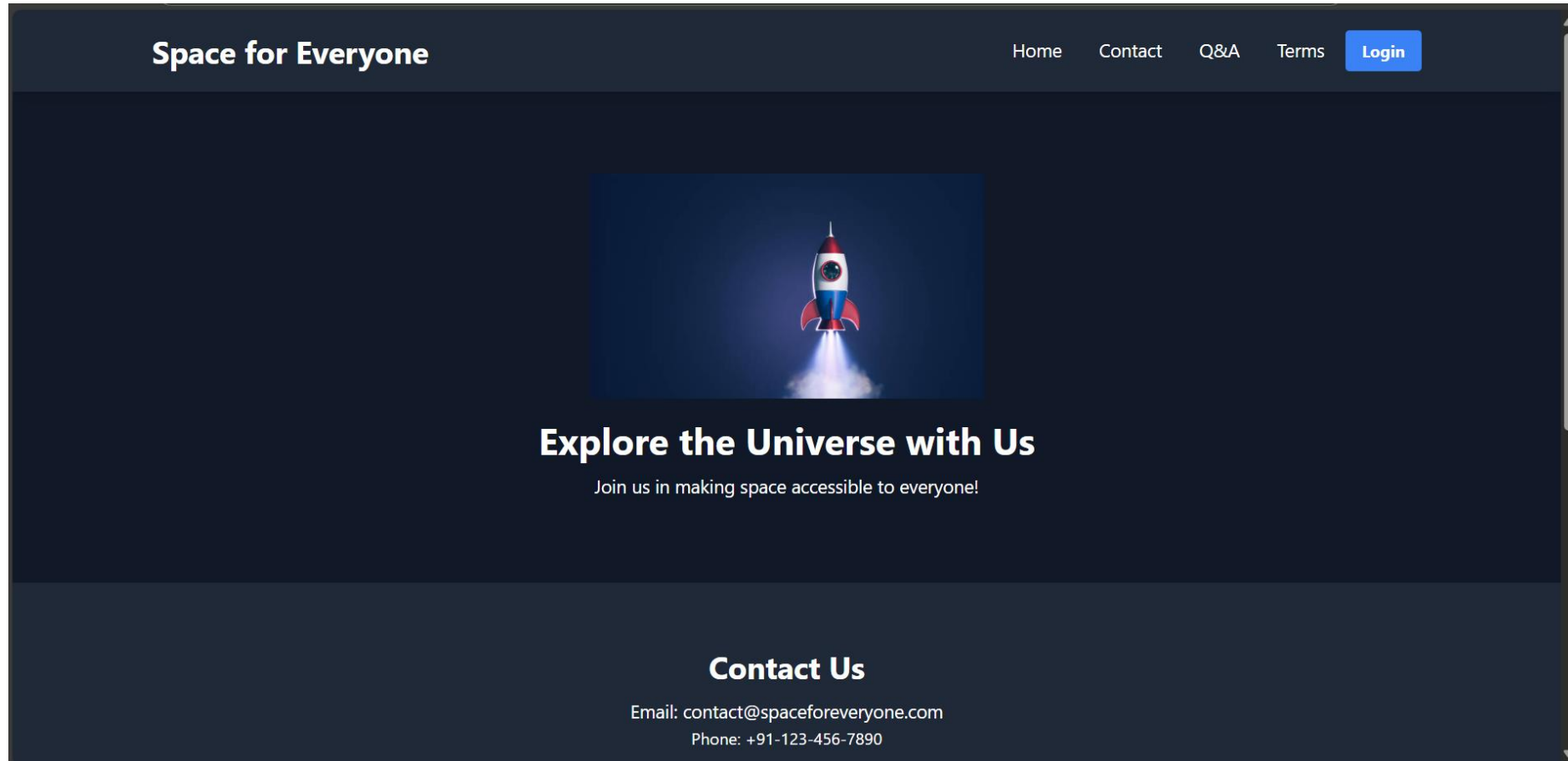
Eg: 1. provider@example.com, Pass@12345 to login

2. Launch vehicle name, status

Expected Result: Launch Payload to orbit successfully (after Launch was successful)

Actual Result: Payload Launch successfully (for both seeker and provider) Pass/Fail: Pass.

Project – UI Screenshots



Launch Management

Launch Seeker

Launch Provider

Transportation Management

Login

Email

Password

Login

Don't have an account? [Sign up](#)

Login

Email

space



Please include an '@' in the email address. 'space' is missing an '@'.

....

Login

Don't have an account? [Sign up](#)

Launch Seeker Details

Organization Name

Payload Weight (kg)

Payload Size (m³)

Launch Location

Desired Orbit

Available Launch Providers

Submit

Launch Seeker Details

Organization Name

Payload Weight (kg)

Payload Size (m³)

Launch Location

Desired Orbit

LEO (Low Earth Orbit) ▾

LEO (Low Earth Orbit)

MEO (Medium Earth Orbit)

GEO (Geostationary Orbit)

Submit

Launch Seeker Details

Organization Name

Payload Weight (kg)

Payload Size (m³)

Launch Location

SpaceX

Blue Origin

Arianespace

ISRO

SpaceX



Submit