Deakin University

Applied Software Engineering

OnTrack Submission

Design Aspects

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Outcome	Weight
ULO1	♦♦♦♦♦
ULO2	♦♦♦♦♦
ULO3	♦♦♦♦♦
ULO4	♦♦♦♦♦

Design provides initial thought how the application may look

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SIT725 – Applied Software Engineering

Task 3.1P – Design Aspects

Use Cases:

Use Cases – 1: User registration and authentication

- **Primary Actor:** EV Driver
- **Description:** As an EV driver, I want to register for an account so that I can access personalized features.
- **Preconditions:** User has downloaded the app
- **Main Flow:**
    - User opens the application
    - User selects the register option
    - User enters email or select third party authentication
    - User provides required information
    - System validates information
    - System creates the user account
- **Postconditions:** User has a registered account

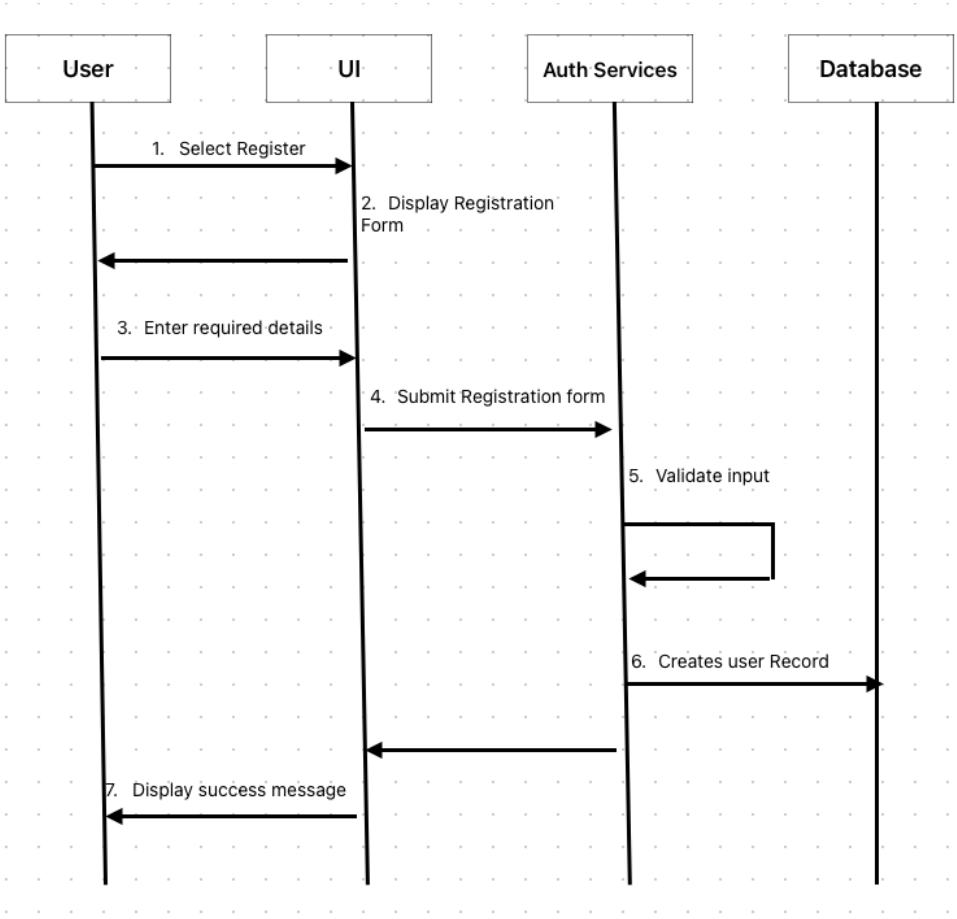

Fig 1: Sequence Diagram for user registration

Use Cases – 2: Vehicle Profile Management

- **Primary Actor:** EV Driver
- **Description:** As an EV driver, I want to add my vehicle details so that I can get appropriate charging recommendations.
- **Preconditions:** User has logged in
- **Main Flow:**
    - User navigates to the profile section
    - User selects Add vehicle
    - Users enter vehicle details
    - System saves the details
- **Postconditions:** vehicle is added to user profile

User Requirements

User Authentication and Profile Management

- The system shall allow users to create accounts using email or third-party authentication
- The system shall enable users to manage their profile information
- The system shall support the storage and management of multiple vehicle profiles
- The system shall securely store user payment information

Charging Station Discovery

- The system shall provide searchable map-based interface of charging stations
- The system shall allow filtering of stations based on connector type, availability, and amenities
- The system shall display detailed information about each charging station
- The system shall show real-time availability status of charging points

Route Planning and Navigation

- The system shall calculate routes that incorporate necessary charging stops
- The system shall estimate charging times based on vehicle type and charger capacity
- The system shall provide turn-by-turn navigation to selected charging stations
- The system shall recalculate routes based on traffic and charging station availability changes

Reservation and Payment

- The system shall allow users to reserve charging slots at supporting stations
- The system shall process payments securely through multiple payment methods
- The system shall provide detailed receipts and transaction history
- The system shall support cancellation of reservations with appropriate refund policies