

# Car Rental

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## Summary

Car Rental is a car management and storage company based in Australia that wants to scale their business to an estate wide operation.

Users can sign-up, provide documents and make a request for a rental. Administrators can review the request and will approve or deny based on the provided documents. Then the user will move to a collection point, where they will pay and receive the car.

When the user ends their trip, they can return the car to any collection point and pay for any additional costs ensued.

## Background

A couple of years ago, it ventured into offering car rental services and successfully established itself as a prominent player in the Sydney metropolitan area, with over 15 different service points across New South Wales.

In recent months, with the expansion of its car fleet and the surge in post-pandemic travel, some challenges have emerged. Specifically, all car rentals are directed to a central call centre, which then manages the cars through phone calls to various service centres. This has led to scalability issues and this is where ScaleMote comes in.

ScaleMote will create a comprehensive solution for managing the car inventory. Cars will be available for rental to the general public through a web application, which will also serve as a tool for inventory management

## Proposed Solution

The following program is designed to comply with the requirements within four to six weeks of development while being cost-effective where possible. It is meant to be a prototype that can push the solution out the door as soon as possible to find product-market fit.

- Authentication & Authorization
  - Sign Up
  - Forgot password
  - Login
  - Logout
  - Forbid unauthorised access to screens
  - User and Admin roles
- Catalogue
  - Users can see the list of available cars
  - Users can select a car to see their details and pictures
- Rental
  - Users can complete a form to request a rental
- User
  - Users can complete their details
  - Users can upload documents
- Admin
  - Admin can upload cars to the catalogue
  - Admin can review, approve and deny rental requests
- Stellar
  - Users can perform payments using the Stellar Network
  - Users can

# Technical stack

- React and Nest.JS, both using TypeScript
- MySQL database
- LocalStack to emulate AWS services
  - AWS S3 for image storage
  - AWS Cognito to manage user log-in
- Use a template from [Tailwind UI](#)

ScaleMote will also create github repositories to safeguard your code while you set up your github profile. Once that is finished, ScaleMote will then relinquish ownership of these repositories to your organisation or personal account, so the code always remains under your control.

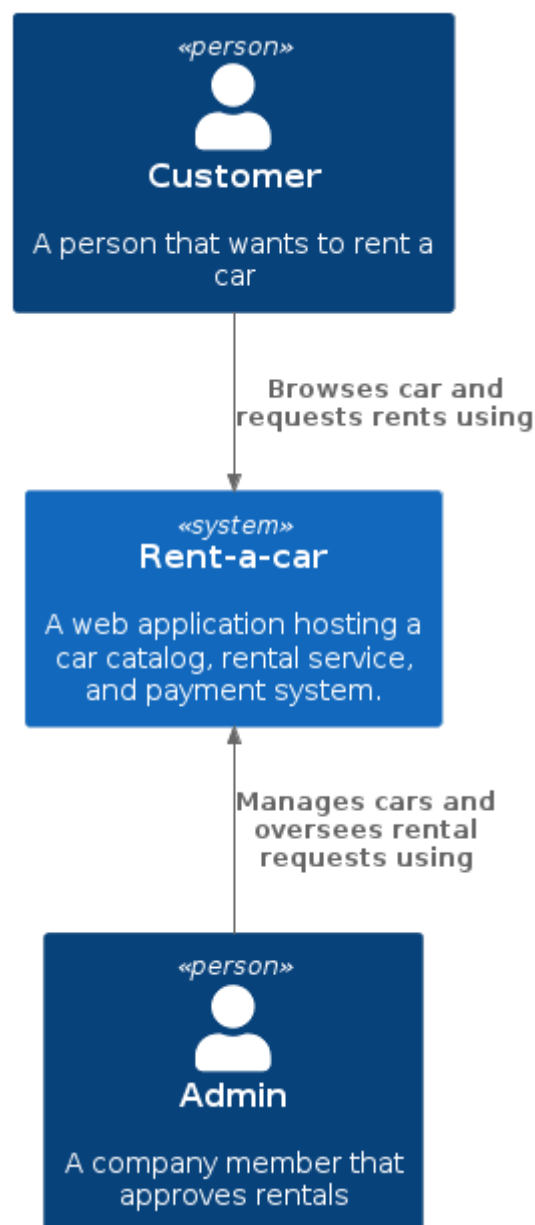
See addendums I to V for more information

## Addendum I

### C4 L1:High-level architecture

This diagram shows a high-level architecture of the proposed initial objectives.

[\[Link to image\]](#)

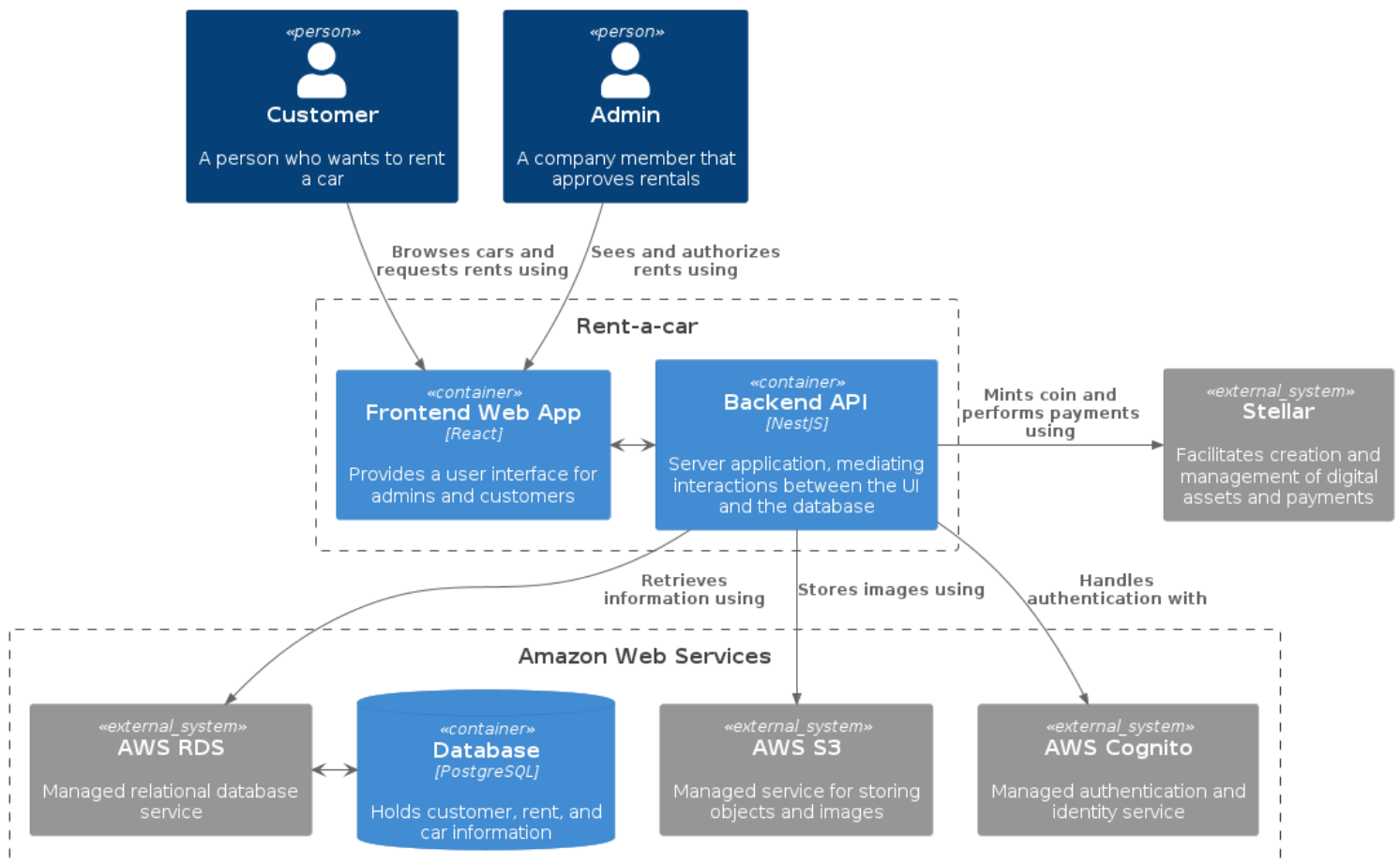


## Addendum II

### C4 L2: Zoom in the CarRental web application

This diagram is more technical in nature and shows the different internal and external systems that make up the interaction with the user and the admin

[\[Link to image\]](#)

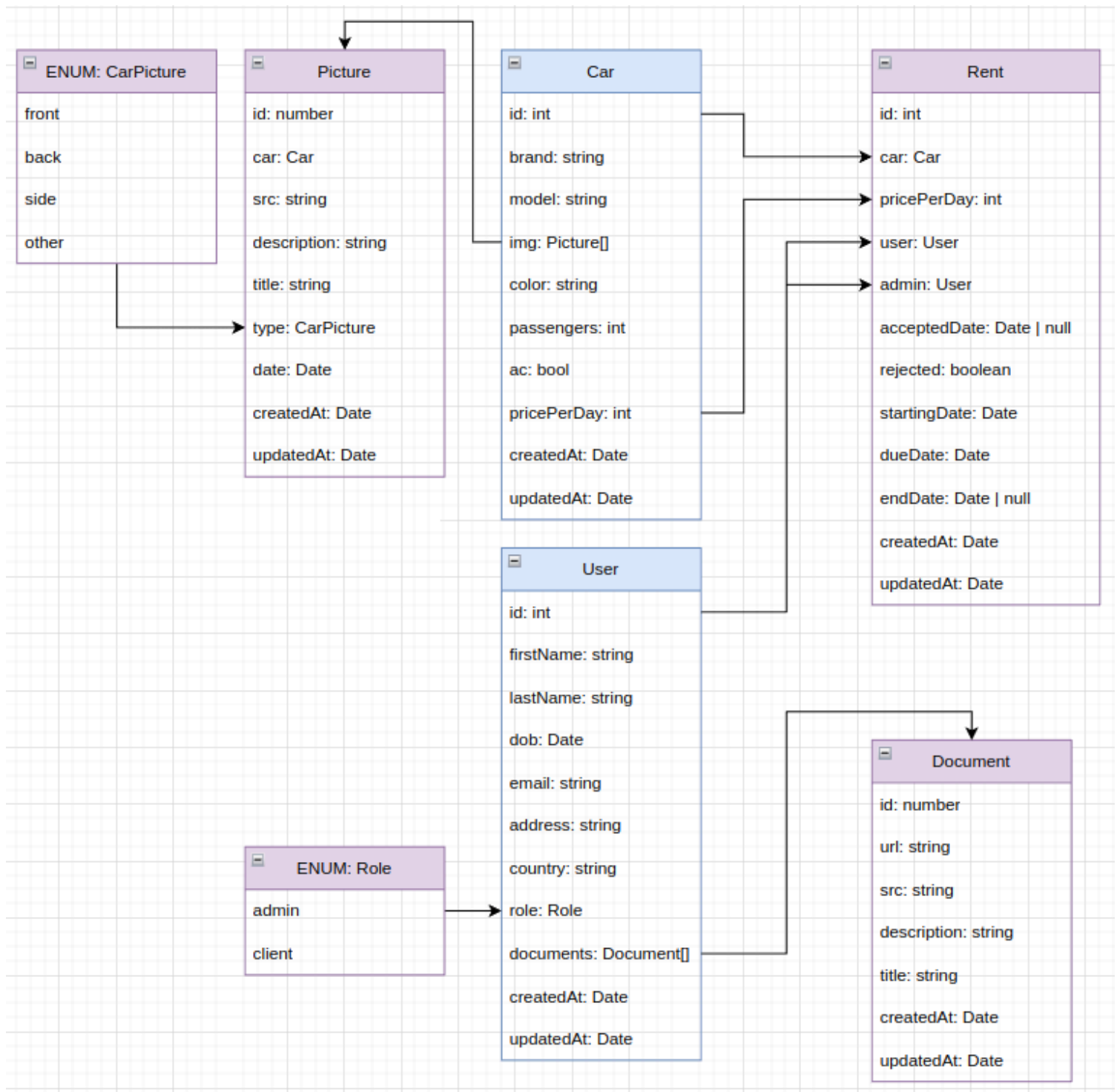


## Addendum III

### Entity Relationship Diagram (ERD)

This diagram is a visual representation that illustrates the relationships among entities in a database. It typically depicts entities as boxes and relationships as lines, helping to model and understand the structure of a database system.

<https://drive.google.com/file/d/1gezI8NrUO-1QIOqCYx2NFanwinXwWuJe/view?usp=sharing>



## Addendum IV

### Example ticket list

As a client, I want to be able to sign up, recover my password and logout from my account.

As a client, I want an user account so that I can request rentals.

As a client, I want to see a catalogue of the available cars so I can choose one to rent.

As a client, I want to see the details of a particular car so I can rent it.

As a client, I want to be able to request to rent a car for a span of time.

As a client I want to see the historical list of my rental requests.

As a developer, I need to set up the user module for the clients.

As a developer, I need to set up the car module for clients and admins.

As a developer, I need to set up the rent module for clients and admins.

As a developer, I need to set up the picture module for the cars.

As a client I want to update my user details so that I can update my description, name, age, etc.

As a developer, I need to set up user roles -admin, user- in order to provide two separate user interfaces.

As a developer, I want that non admin users are redirected from admin pages so I can securely work on my application,

As an admin, I want to add new cars, set up their price, and load the images so that I can include them in the car gallery.

As an admin I want to see the historical list of the user's requests so that I can give a truthful assessment of the user.

As a developer, I want to set up a S3 bucket so that users can upload files into my application.

As an admin I want to be able to upload pictures of the cars, so that I can provide visual information of the car.

As a user I want to be able to upload my documents to the application so that admins can verify my identity.

As an admin I want to be able to edit the details of a car.

As an admin, I want to manage the pictures related to a car.

As an admin, I want to see a list of requested rents so that I can order them by priorities.

As an admin, I want to be able to admit or deny a rent according to provided documents.

As the client, when receiving crypto payments, i want to always receive USDC

As a user, before payment, I want the application to perform a conversion check to see if I have enough funds in my balance

As a dev, I want to connect my wallet to the application using the Stellar SDK

## Addendum V

### Ticket builder

```
// Create a sprint then obtain the List ID, set up your personal token, then run with node >18
const listId = ""
const token = ""

const taskNames = [
  "As a client, I want to be able to sign up, recover my password and logout from my account.",
  "As a client, I want an user account so that I can request rentals.",
  "As a client, I want to see a catalogue of the available cars so I can choose one to rent.",
  "As a client, I want to see the details of a particular car so I can rent it.",
  "As a client, I want to be able to request to rent a car for a span of time.",
  "As a client I want to see the historical list of my rental requests.",
  "As a developer, I need to set up the user module for the clients.",
  "As a developer, I need to set up the car module for clients and admins.",
  "As a developer, I need to set up the rent module for clients and admins.",
  "As a developer, I need to set up the picture module for the cars.",
  "As a client I want to update my user details so that I can update my description, name, age, etc.",
  "As a developer, I need to set up user roles -admin, user- in order to provide two separate user interfaces.",
  "As a developer, I want that non admin users are redirected from admin pages so I can securely work on my application.",
  "As an admin, I want to add new cars, set up their price, and load the images so that I can include them in the car gallery.",
  "As an admin I want to see the historical list of the user's requests so that I can give a truthful assessment of the user.",
  "As a developer, I want to set up a S3 bucket so that users can upload files into my application.",
  "As an admin I want to be able to upload pictures of the cars, so that I can provide visual information of the car.",
  "As a user I want to be able to upload my documents to the application so that admins can verify my identity.",
  "As an admin I want to be able to edit the details of a car.",
  "As an admin, I want to manage the pictures related to a car.",
  "As an admin, I want to see a list of requested rents so that I can order them by priorities.",
  "As an admin, I want to be able to admit or deny a rent according to provided documents.",
  "As the client, when receiving crypto payments, i want to always receive USDC",
  "As a user, before payment, I want the application to perform a conversion check to see if I have enough funds in my balance",
  "As a dev, I want to connect my wallet to the application using the Stellar SDK",
]

console.log(`Creating ${taskNames.length} tasks...`)
const postTasks = taskNames.forEach(taskName =>
  fetch(`https://api.clickup.com/api/v2/list/${listId}/task`, {
    headers: {
      "Authorization": token,
      "Content-Type": "application/json"
    },
    method: "POST",
    body: JSON.stringify({
      name: taskName
    })
  })
)

.then(res => res.json())
.then(function (task) {
  if (task.err) console.error(task)
  else console.log(`✅ Task '${task.name}' created successfully.`)
})
})
```



## Addendum VI

### Figma

Ideally, we would create our own design system, wireframes, so as to not depend on external design providers.