

Gestió automatitzada d'un pàrquing

AppArkem

Gemma Rosell Guilella

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Universitat Politècnica de Catalunya

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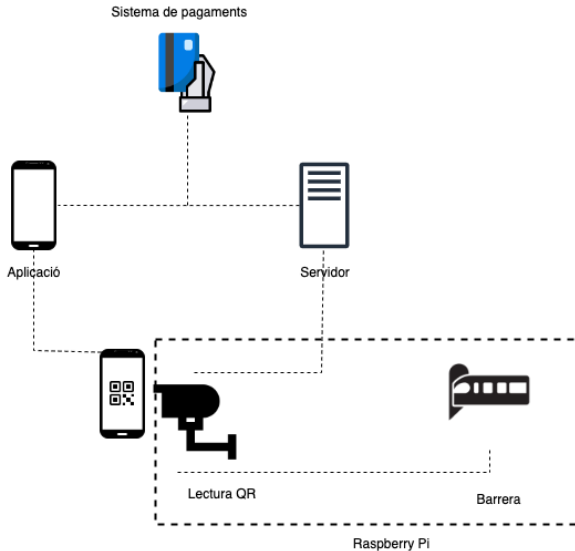
1. Introducció
2. Back-end
3. Front-end
4. Raspberry Pi
5. Conclusions

Introducció

1.1 Introducció: Objectius

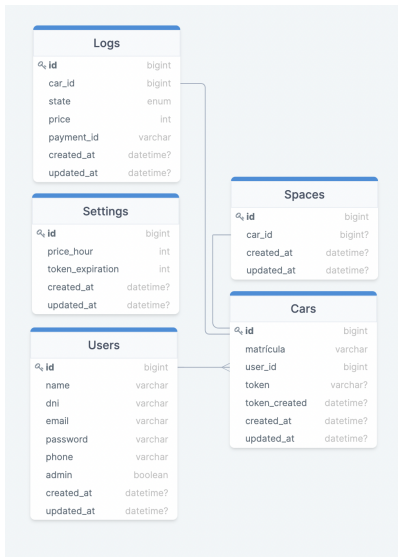
1. pos el que he fet bb

1.2 Introducció: Arquitectura del sistema



Back-end

2.1 Back-end: BD



2.2 Back-end: Rest API

| Mètode | Ruta | Middelware | Descripció |
|--------|----------------|------------|------------------|
| POST | /auth/login | guest | Iniciar sessió |
| POST | /auth/logout | guest | Tancar sessió |
| POST | /auth/register | auth | Crear usuari |
| GET | /auth/user | auth | Obtenir usuari |
| PUT | /auth/user | auth | Modificar usuari |

Table 1 – Taula rest API *Auth*

2.2 Back-end: Rest API

| Mètode | Ruta | Middelware | Descripció |
|--------|-------------|------------|-------------------------|
| GET | /cars | auth | Mostrar tots els cotxes |
| POST | /cars | auth | Crear un cotxe |
| GET | /cars/{car} | auth | Mostrar el cotxe |
| PUT | /cars/{car} | auth | Modificar el cotxe |
| DELETE | /cars/{car} | auth | Eliminar el cotxe |

Table 2 – Taula rest API Cars

2.2 Back-end: Rest API

| Mètode | Ruta | Middelware | Descripció |
|--------|----------------|------------|------------|
| GET | /cars/{car}/qr | auth | Generar QR |

Table 3 – Taula rest API QR

2.2 Back-end: Rest API

| Mètode | Ruta | Descripció |
|--------|----------------|---------------|
| POST | /barriers/open | Pujar barrera |

Table 4 – Taula rest API *Barriers*

2.2 Back-end: Rest API

| Mètode | Ruta | Middelware | Descripció |
|--------|-------------------------|------------|---------------------|
| POST | /checkout/{car} | auth | Generar pagament |
| GET | /checkout/{car}/error | - | Pagament cancel·lat |
| GET | /checkout/{car}/success | - | Pagament acceptat |

Table 5 – Taula rest API *Payments*

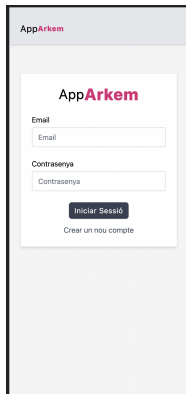
2.2 Back-end: Rest API

| Mètode | Ruta | Middelware | Descripció |
|--------|-----------|--------------|--------------------|
| GET | /settings | auth | Obtenir settings |
| PUT | /settings | auth & admin | Modificar settings |

Table 6 – Taula rest API *Settings*

Front-end

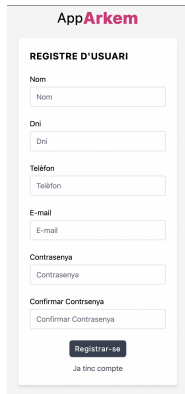
3.1 Front-end: Pàgines



The image shows a mobile application interface for 'AppArkem'. At the top, there is a header bar with the 'AppArkem' logo. Below this, the main content area features the 'AppArkem' logo again, followed by two input fields: 'Email' and 'Contrasenya' (Password). Below the password field is a dark button labeled 'Iniciar Sessió' (Login). At the bottom of the form area, there is a link that says 'Crear un nou compte' (Create a new account).

Figure 1 – Iniciar Sessió

3.1 Front-end: Pàgines



The image shows a user registration form titled 'AppArkem' at the top. The form is titled 'REGISTRE D'USUARI' and contains several input fields: 'Nom', 'Dni', 'Telèfon', 'E-mail', 'Contrasenya', and 'Confirmar Contrasenya'. Each field has a placeholder text matching its label. Below the fields is a 'Registrar-se' button and a link 'Ja tinc compte'.

AppArkem

REGISTRE D'USUARI

Nom

Dni

Telèfon

E-mail

Contrasenya

Confirmar Contrasenya

Registrar-se

[Ja tinc compte](#)

Figure 2 – Registre

3.1 Front-end: Pàgines

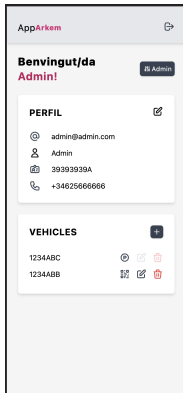
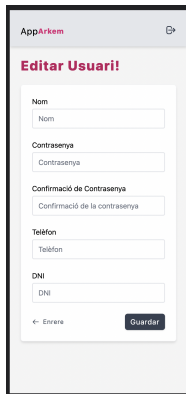


Figure 3 – Índex

3.1 Front-end: Pàgines



The screenshot shows a mobile application interface for editing a user profile. At the top, the header bar displays 'AppArkem' on the left and a search icon on the right. Below the header, the title 'Editar Usuari!' is centered in a bold, dark red font. The form itself is a light gray rounded rectangle containing several input fields: 'Nom' (with a placeholder 'Nom'), 'Contrasenya' (with a placeholder 'Contrasenya'), 'Confirmació de Contrasenya' (with a placeholder 'Confirmació de la contrasenya'), 'Telèfon' (with a placeholder 'Telèfon'), and 'DNI' (with a placeholder 'DNI'). At the bottom left of the form is a back arrow icon followed by the text 'Enrere', and at the bottom right is a dark gray button with the white text 'Guardar'.

Figure 4 – Editar usuari

3.1 Front-end: Pàgines

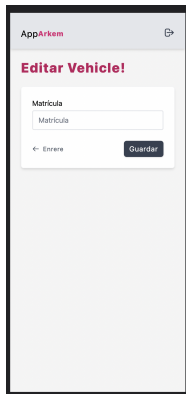


Figure 5 – Editor vehicle

3.1 Front-end: Pàgines

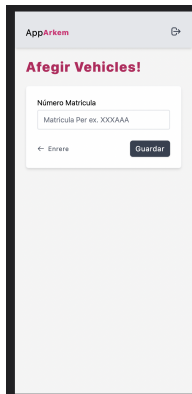


Figure 6 – Afegir cotxes

3.1 Front-end: Pàgines



Figure 7 – Generar codi QR

3.1 Front-end: Pàgines

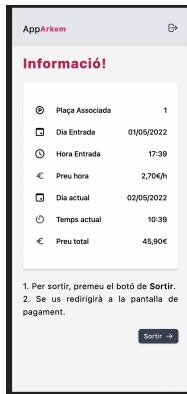
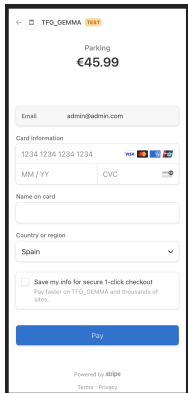


Figure 8 – informació

3.1 Front-end: Pàgines






The image shows a mobile payment interface for a Stripe checkout. At the top, there is a back arrow, a close icon, the text 'TFG_GEMMA', and a 'TEST' label. Below this, the item being purchased is 'Parking' with a price of '€45.99'. The user's email is 'admin@admin.com'. The 'Card information' section includes a card number '1234 1234 1234 1234', a cardholder name field, and a country/region dropdown set to 'Spain'. There are also fields for the expiration date (MM / YY) and the CVC. A checkbox for 'Save my info for secure 1-click checkout' is present, with a note that it allows for faster payments on TFG_GEMMA and thousands of sites. A large blue 'Pay' button is at the bottom. The footer indicates 'Powered by stripe' and provides links for 'Terms' and 'Privacy'.


← ☐ TFG_GEMMA TEST

Parking
€45.99

Email admin@admin.com

Card information

1234 1234 1234 1234   

MM / YY CVC 

Name on card

Country or region

Spain

☐ Save my info for secure 1-click checkout
Pay faster on TFG_GEMMA and thousands of sites.

Pay

Powered by stripe
[Terms](#) [Privacy](#)

Figure 9 – Pagament d'stripe

3.1 Front-end: Pàgines



Figure 10 – Pagament validat

3.1 Front-end: Pàgines

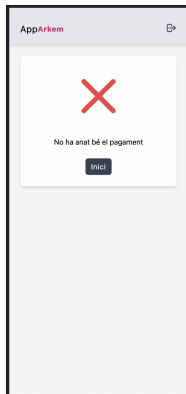


Figure 11 – Pagament cancel·lat

3.1 Front-end: Pàgines

AppArkem

Admin!

CONFIGURACIÓ

Preu hora (cèntims)

Temps vàlid d'un QR (minuts)

[<- Enrere](#)

Guardar

LOGS

| Matrícula | Estat | Preu | Pagament | Data |
|-----------|----------|---------|--------------|------------------|
| 1234ABC | Entrada | | | 02/05/2022 20:04 |
| 1234ABC | Pagament | 11,93 € | <u>Veuve</u> | 02/05/2022 22:04 |

Figure 12 – Panell administratiu

3.1 Front-end: Pàgines

TYLO_DEVMA

Search

CreateHelpSettingsUsers

HomePaymentsBalancesCustomersProductsReportsConnectMore

TEST DATA

DevelopersTest mode

Payments

All paymentsFraud & riskInvoicesSubscriptionsQuotesPayment links

PAYMENT

€11.93EUR Succeeded

pi_3K3BPL8ERD3G4S1PTED44

Refund

DateMay 2, 2022, 8:04 PM

CustomerAdmin

Payment method**** 4242

Risk evaluationNormal

Timeline

+ Add note

Payment succeededMay 2, 2022, 8:04 PM

Payment startedMay 2, 2022, 8:04 PM

Checkout summary

Customeradmin@admin.comTest 3ES

| items | QTY | UNIT PRICE | AMOUNT |
|---------|-----|------------|--------|
| Parking | 1 | €11.93 | €11.93 |
| Total | | | €11.93 |

Payment details

Statement descriptorStripe

Amount€11.93

Fee€2.80

Net€11.33

StatusSucceeded

DescriptionNo descriptionEdit

Payment method

IDpn_1Kv3baL8DA3HGs10GqHvH0

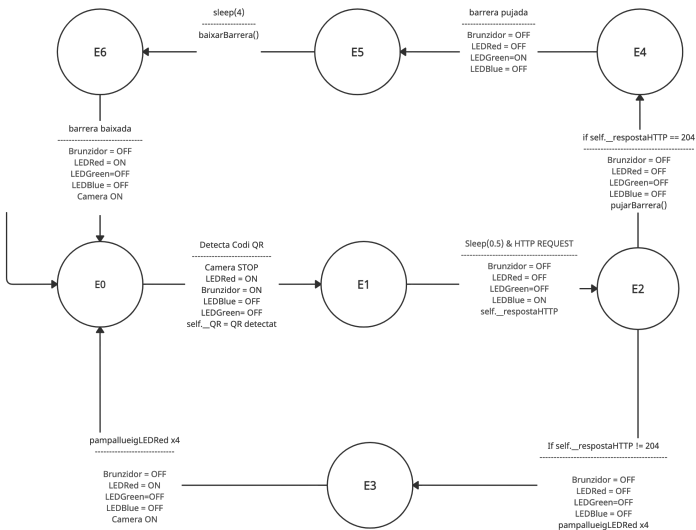
Owner

Test 3

Figure 13 – Vista a Stripe

Raspberry Pi

4.1 Raspberry Pi: Barrera



Conclusions

5.1 Conclusions: Treball Futur

1. Pujar / baixar la barrera.
2. Escollir/canviar la plaça del pàrquing.
3. Fer reserves de places a través de l'aplicació.
4. Historial d'aparcaments.
5. Descarregar-se la factura.
6. Enviar correus adjuntant la factura de cada pagament.