CAR ENTERTAINMENT SYSTEM

HCI - Final Presentation

Presented by:

Beatriz Ferreira, 107214, P4

Tomás Fonseca, 107245, P4

23/05/2024

Engenharia de Computadores e Informática

INTRODUCTION

- The car entertainment system is an integrated set of technologies and functionalities designed to enhance the occupants experience within a vehicle.

- It comprises a variety of multimedia features, connectivity options, and controls aimed at providing entertainment, information, and convenience during journeys.

PROJECT OBJECTIVES

- **Enhance User Experience:**
  - Create a friendly and easy-to-use environment for all passengers.
- **Comprehensive Entertainment Options:**
  - Offer various entertainment choices, such as music and video, to cater to different preferences.
- **Enhanced Safety:**
  - Minimize driver distractions through an intuitive interface.

PERSONAS

- Name: David
- Age: 45
- Occupation: Real Estate Agent
- Goals and Motivations:
  - Seeks entertainment and productivity features during commutes
  - Values convenience and efficiency in technology
  - Wants seamless navigation
- Challenges:
  - Limited time for exploring complex features
  - Difficulty keeping up with rapidly changing technology trends.

SCENARIOS

- **Scenario 1: Starting a Trip to a Saved Restaurant**

  ○ David is ready to start his journey towards a previously saved restaurant. He accesses the **car's navigation system** and selects the option to view the **list of saved restaurants**. After accessing the list, David **selects the desired restaurant** and confirms the route.

- **Scenario 2: Watching a Video of Daniela Melchior**

  ○ While waiting for something, David decides to pass the time by watching a video of Daniela Melchior in his car. He accesses the **apps section on the car's system** and selects the **YouTube app**. The app opens, allowing David to **play the desired video**.

SCENARIOS

- **Scenario 3: Playing the Song "Superheroes" on Spotify**

  - David wants to listen to his favorite song, "Superheroes," on Spotify during his journey. He accesses the **audio menu** on the car's entertainment system and **selects the Spotify symbol**. Then, he navigates to the **list of favorite songs** and **selects "Superheroes"** to play.

- **Scenario 4: Turning on the Air Conditioning on a Cold Day**

  - David gets into the car on a cold day and decides to turn on the air conditioning to warm up during the journey. He accesses the **climate controls** on the car's panel and **adjusts the temperature and direction of the air conditioning** according to his preference.

FUNCTIONAL REQUIREMENTS

- **Viewing Saved or Favorite Routes:**
  - The system allows users to view a list of saved or favorite routes.
  - Users can select a route from the list to start navigation.

- **Music:**
  - Users can play music through the entertainment system.
  - They can adjust the volume, pause, and play music as desired.

- **YouTube:**
  - The system provides functionality for viewing YouTube videos.
  - Users can select and play videos.

- **Air Conditioning:**
  - Users can adjust air conditioning settings through the system.
  - They can set the desired temperature and adjust the airflow direction.

NON-FUNCTIONAL REQUIREMENTS

- **Performance:**
  - The system must respond quickly to user inputs, ensuring smooth navigation and multimedia playback.

- **Usability:**
  - The user interface must be intuitive and easy to navigate, even for users with limited technical knowledge.

- **Reliability:**
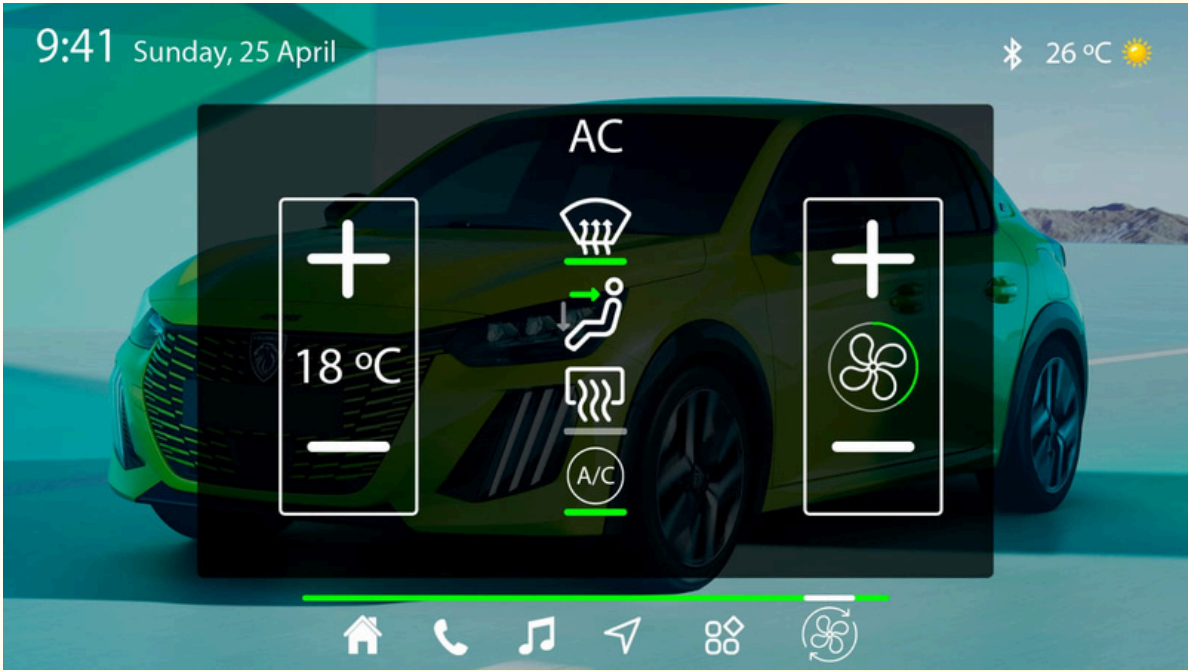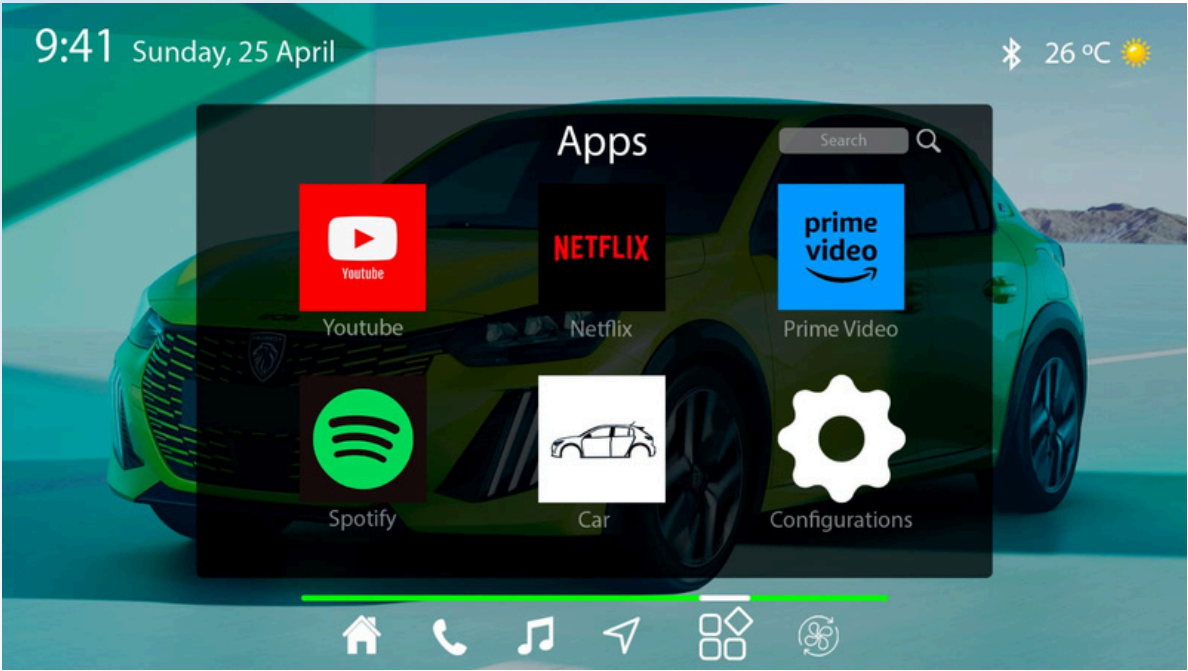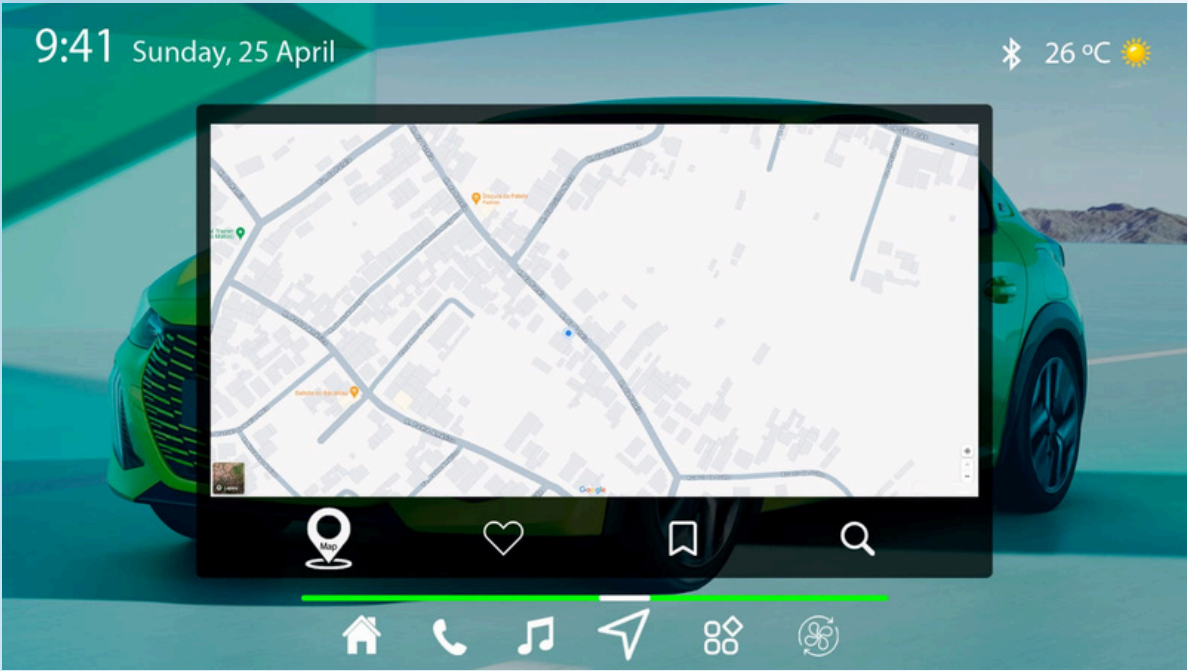 - The system must be stable and reliable, minimizing the risk of crashes or unexpected errors..

LOW FIDELITY PROTOTYPE IMAGES
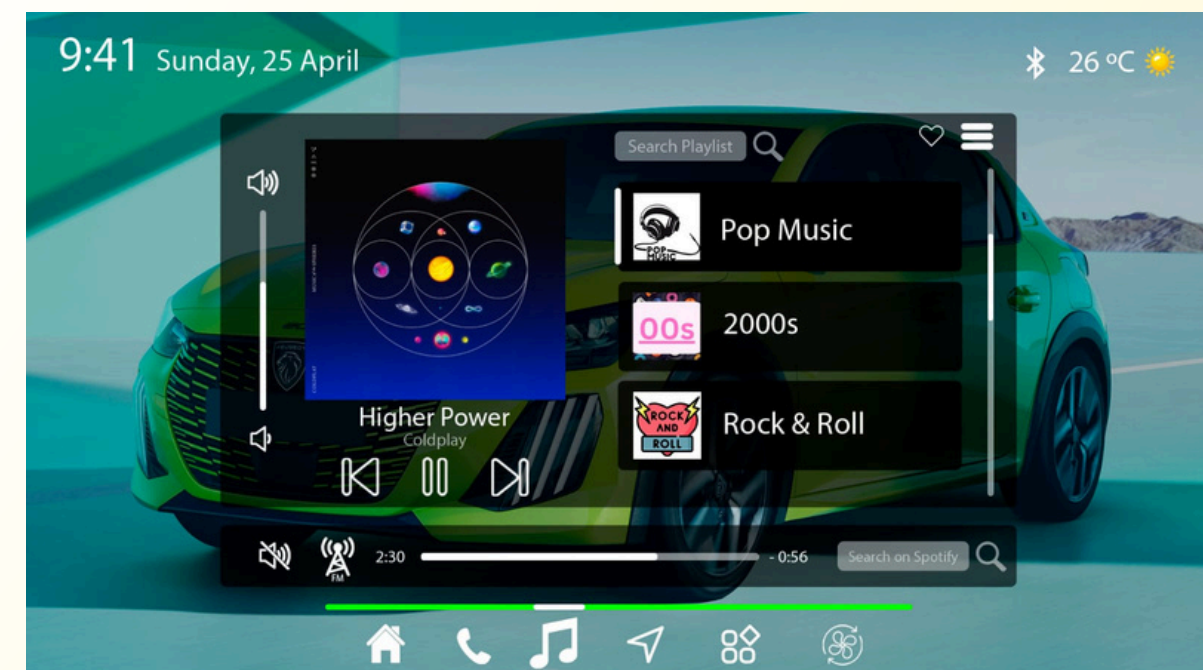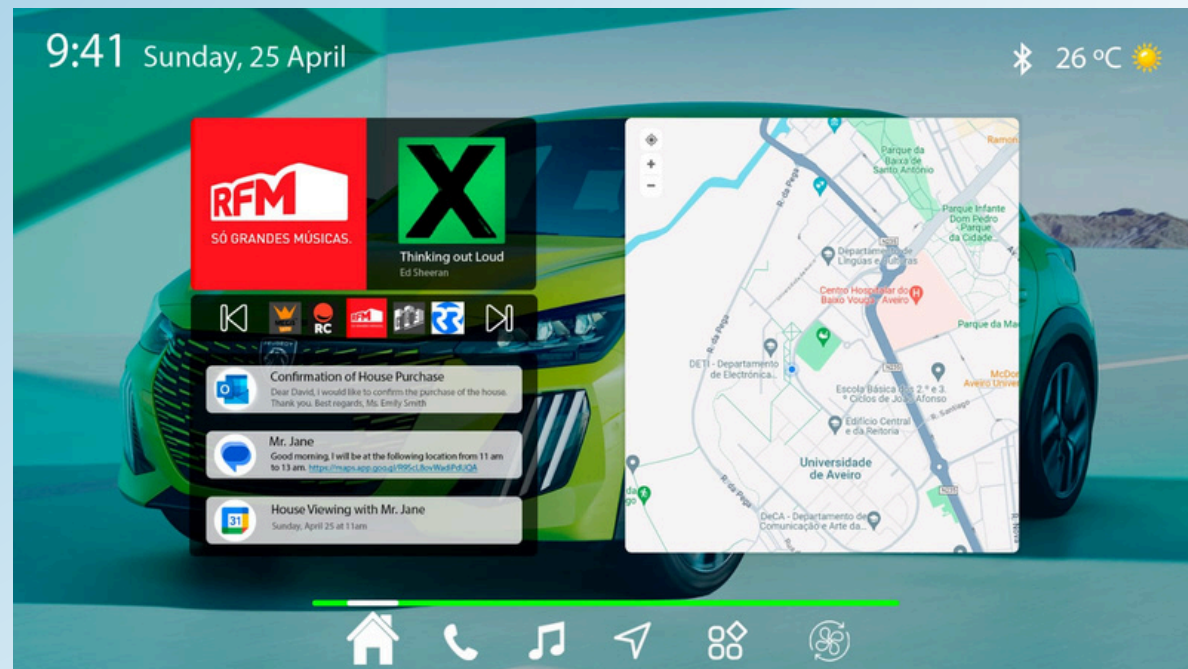
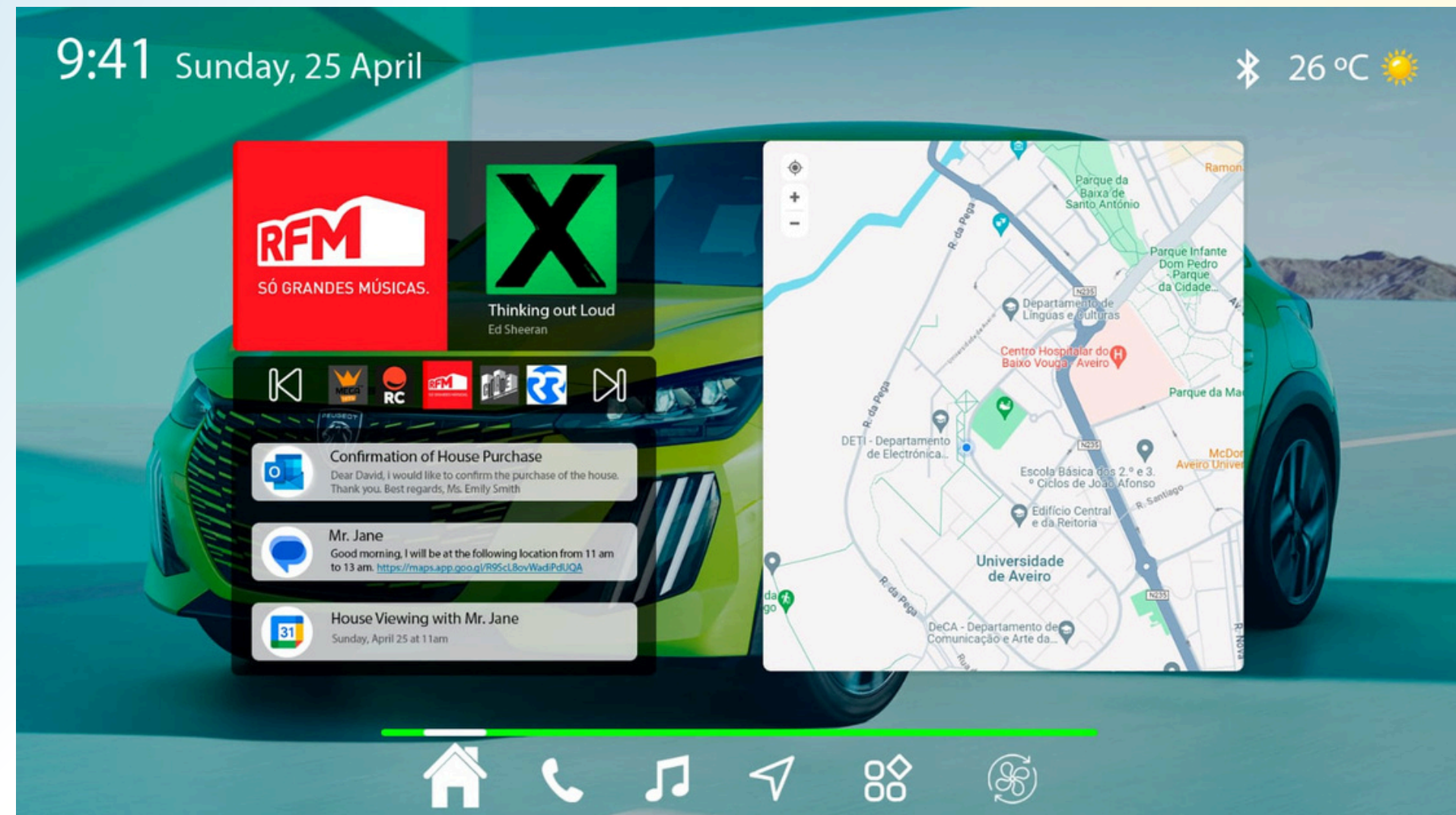# LOW FIDELITY PROTOTYPE IMAGES

LOW FIDELITY PROTOTYPE TEST RESULTS

1. Bluetooth Button Functionality

- ○ **Issue:** The Bluetooth button only indicates connection to a phone and does not serve as a shortcut to Bluetooth settings.
- ○ **Solution:** Modify the Bluetooth Icon to Serve as a Shortcut to Bluetooth Settings.

LOW FIDELITY PROTOTYPE TEST RESULTS

2. Radio Music Image

- **Issue:** The music image on the radio is confusing, making users think they are on Spotify instead of the radio.
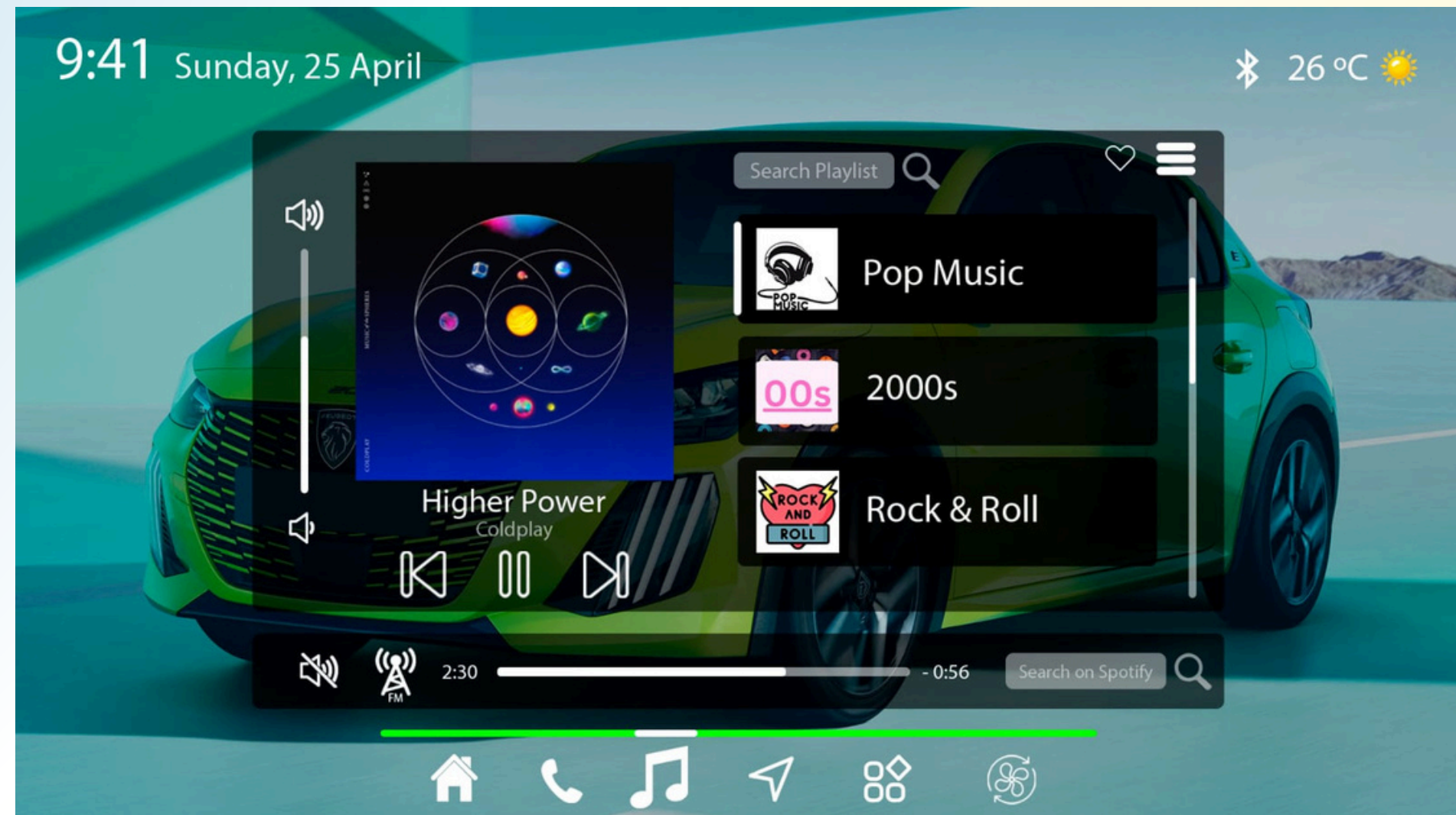- **Solution:** Update Image to Reflect Current Radio.

LOW FIDELITY PROTOTYPE TEST RESULTS

3. Spotify Interface

- **Issue:** The heart symbol and playlist symbol (three bars) are unnecessary since favorites are a playlist.
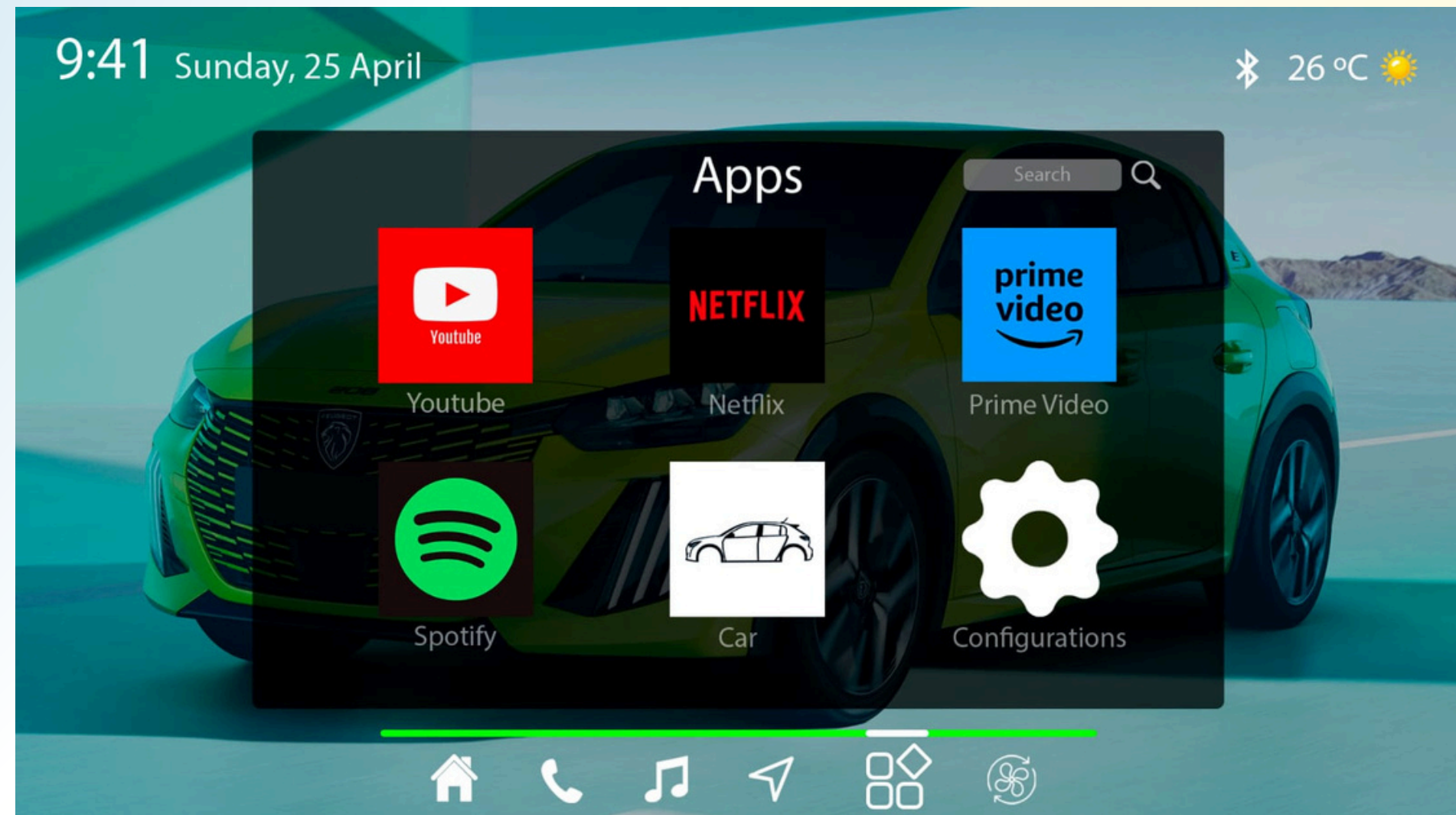- **Solution:** Remove these two buttons and only display playlists in Spotify.

LOW FIDELITY PROTOTYPE TEST RESULTS

4. App Menu Adjustments

- **Issue:** The car app should be removed from the apps menu.
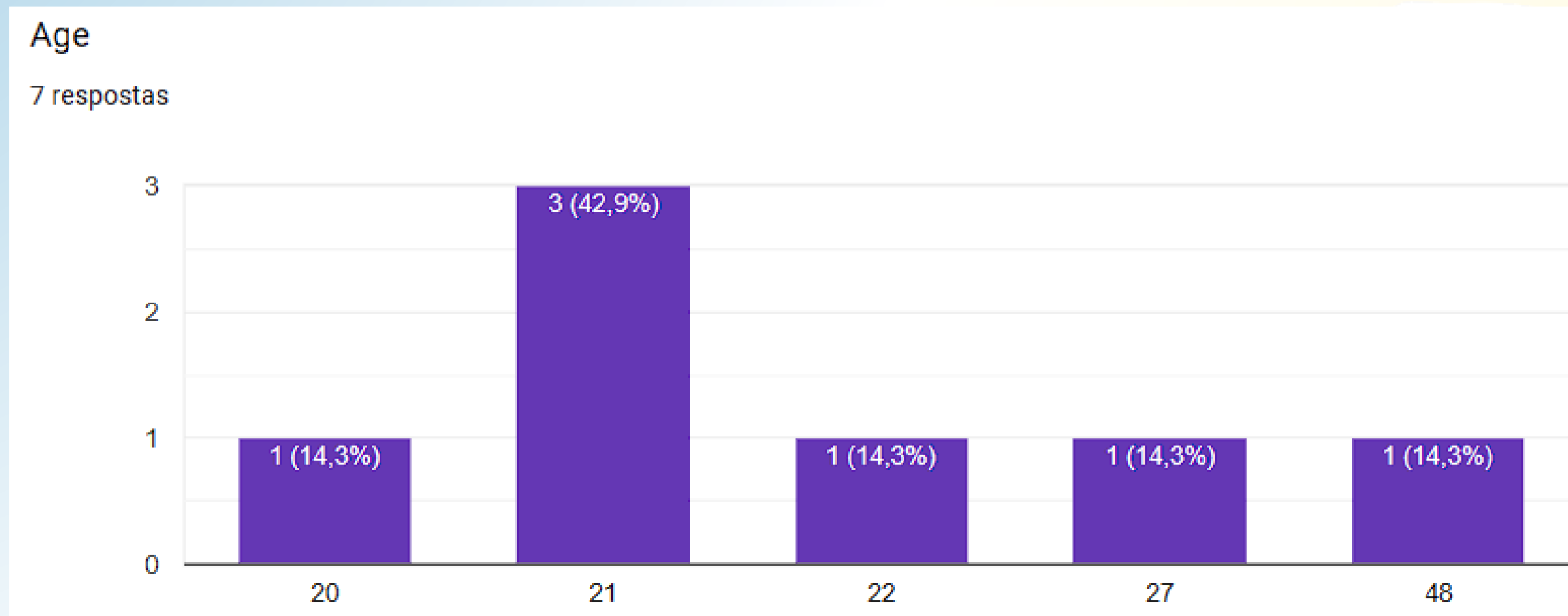- **Solution:** Place an icon in the submenu bar at the bottom.

PLATFORM USED FOR THE FUNCTIONAL PROTOTYPE

- Website based on HTML, CSS and JavaScript web programming

- Prior knowledge on this technologies

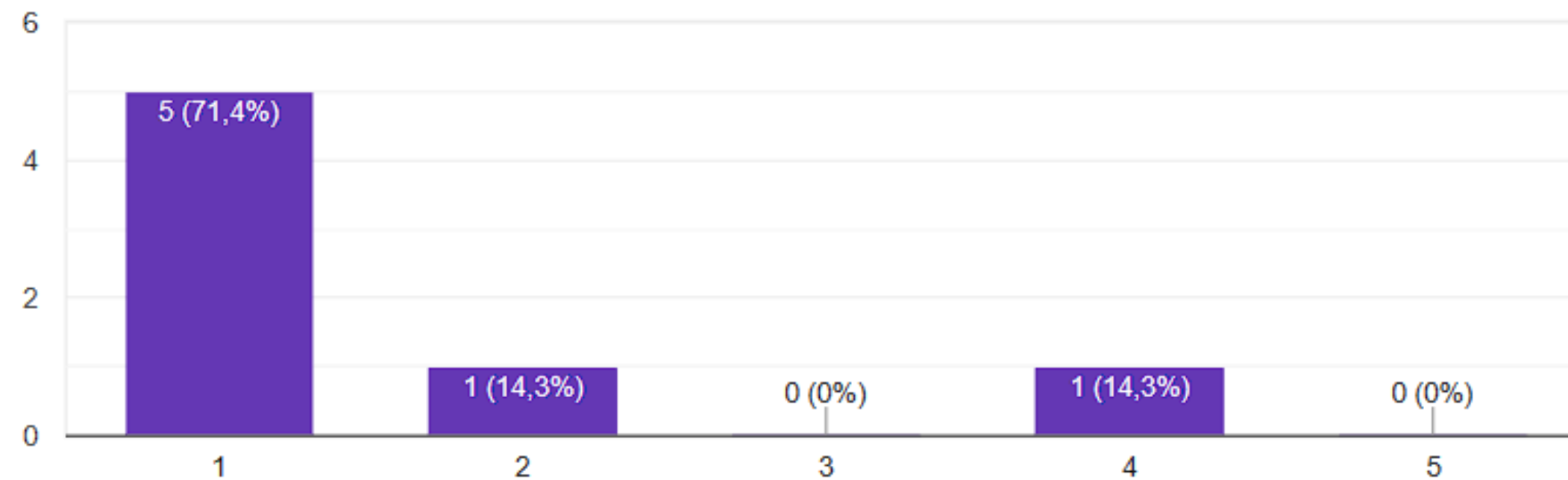# USABILITY TEST RESULTS - FUNCTIONAL PROTOTYPE

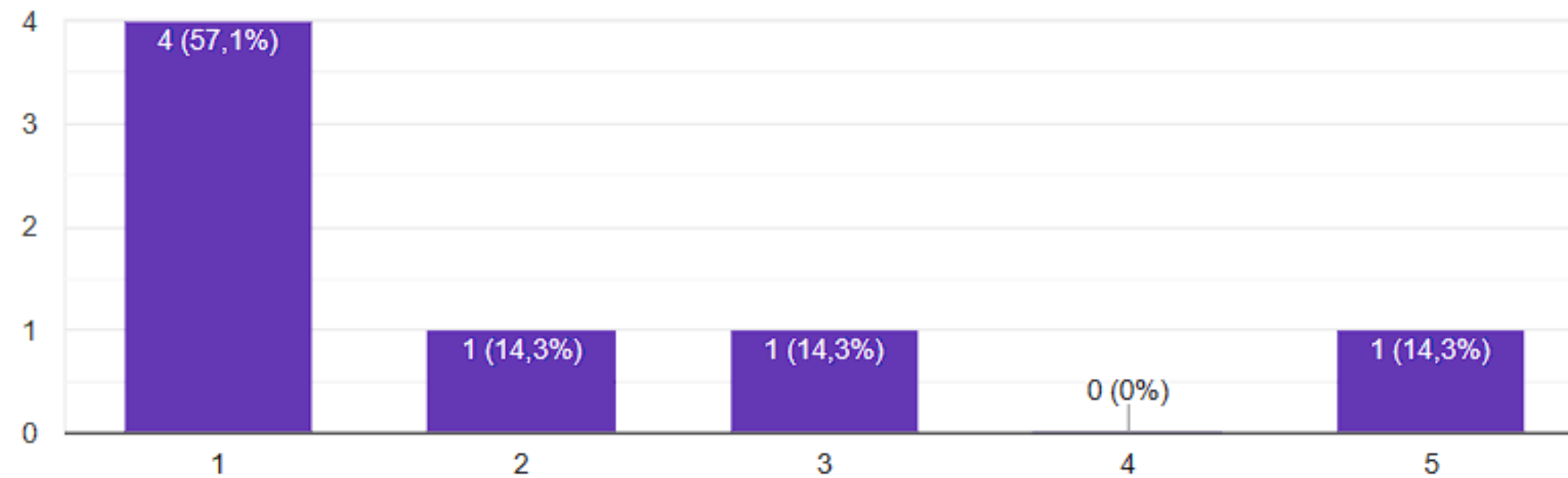# USABILITY TEST RESULTS – FUNCTIONAL PROTOTYPE

USABILITY TEST RESULTS - FUNCTIONAL PROTOTYPE
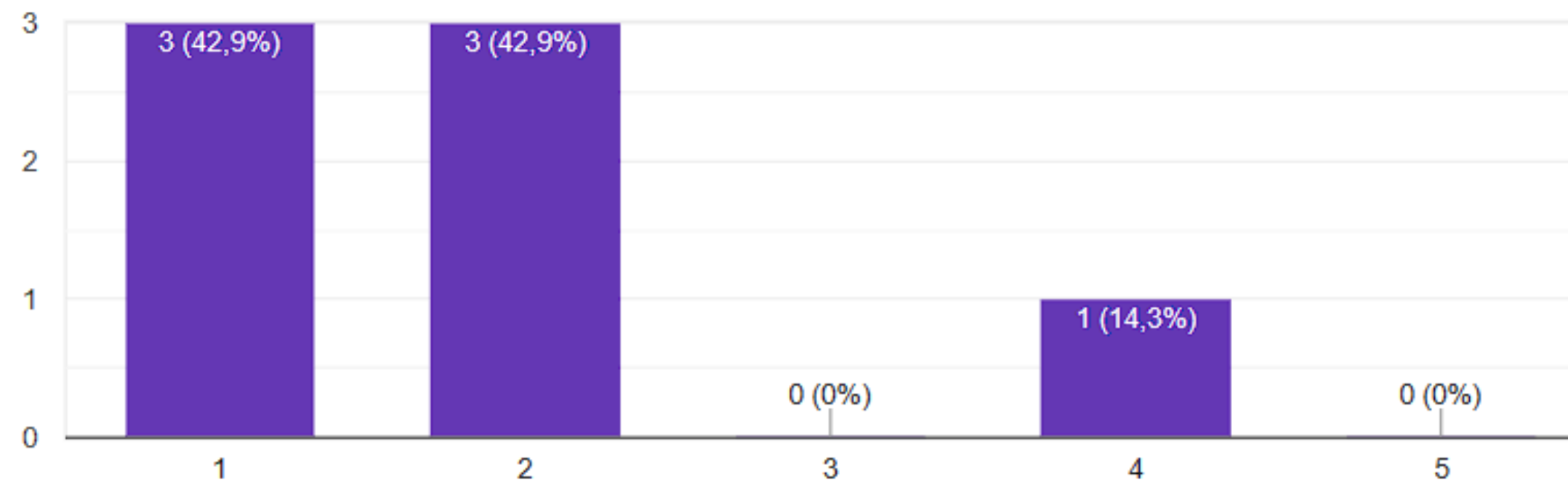

Task 2 - Start trip to one of the saved restaurants

7 respostas

USABILITY TEST RESULTS – FUNCTIONAL PROTOTYPE

Task 3 - Play the song superheroes in your spotify favorites
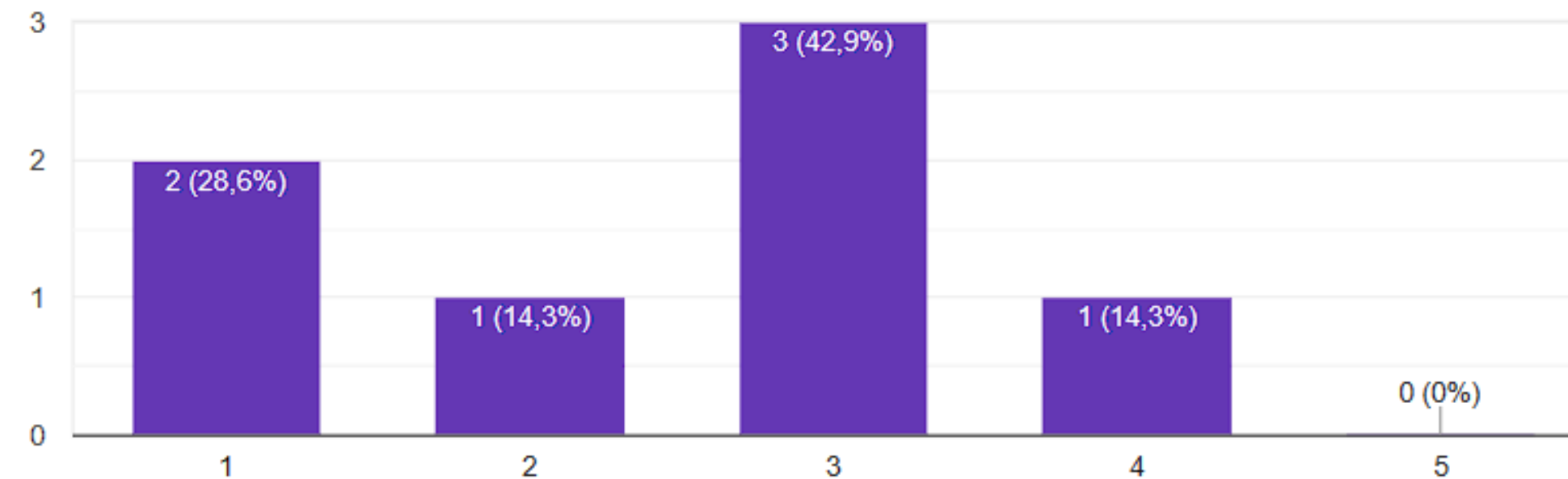
7 respostas

USABILITY TEST RESULTS – FUNCTIONAL PROTOTYPE

Task 4 - Turn on the air conditioning at speed 3 at 24° temperature directed towards the feet, then turn on the air redirection towards the front and rear windows.

USABILITY TEST RESULTS – FUNCTIONAL PROTOTYPE

User Sugestions:

- **Navigation - 2 tabs that can be the same one**

- **Configuration - maybe change it to "Wi-Fi configurations", since it may generate confusion**

- **Volume control should go down to zero**

- **When switching tabs from music to Spotify, maintain Spotify page**
  - Implement feature to remember last active music source tab, prioritizing Spotify if music playback is ongoing

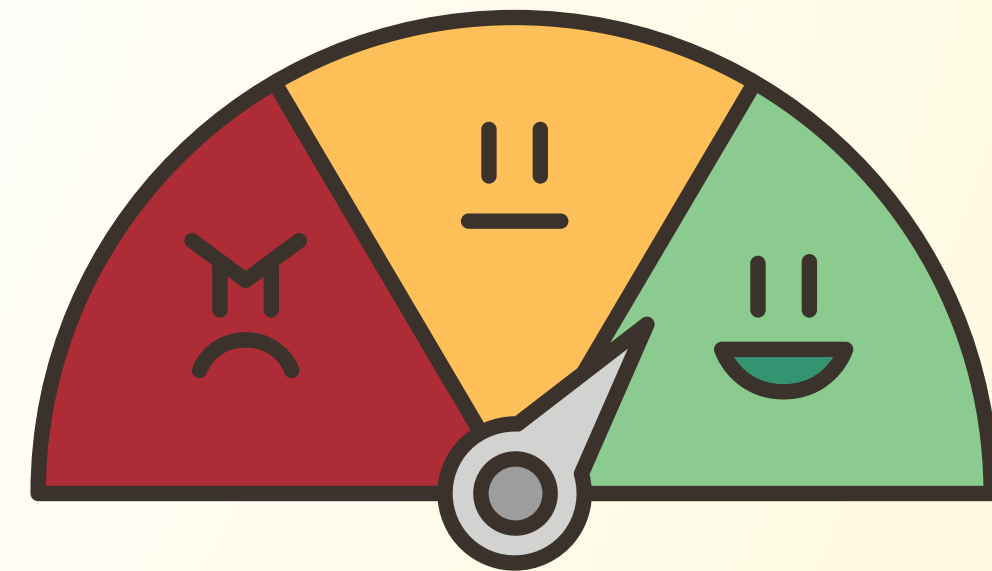- **Optimize text space and provide alternative volume adjustment**

FINAL APPLICATION DEMO

CONCLUSION

- **User Feedback:**

  - Received positive evaluations from users.
  - Users also provided constructive feedback for improvements.

- **Improvements:**

  - Implemented some suggested enhancements.
  - Planned additional improvements for a future version of the system.

ACKNOWLEDGMENTS

Special thanks to:

- All usability test participants who contributed their time and gave valuable feedback

Effort of each group member:

Beatriz Ferreira, 107214 - 50%
Tomás Fonseca, 107245 - 50%

big thanks!