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Assistant for Active Ageing at Home

Elaboration Phase - System Requirements and Architecture

Projeto de Informática
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Overview

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01 Context and State of Art

Keywords:

- Home Assistant Active Ageing
- Active Ageing at Home
- Assistant for Older People
- Home Assistant for Older People
- Home Voice Assistant Older People
- Voice Assistant Older People
- Voice Assistant Older People Study
- Voice Assistant Older People Review
- Home Assistant Older People Review

Amazon Echo Dot

Google Home

01 Context and State of Art

Tool Name	Pros	Cons	Open-Source	Natural Language Processing (NLP)
Rasa	Flexibility Good documentation	Steep learning curve		
Microsoft Bot Framework	Good community support Integration with other microsoft services	Limited NLU and customization		
Amazon Lex	Integration with Amazon services	Not free :(Limited NLU and customization		
Dialogflow	Integration with Google services Voice Support Pre-built agents	Not free :(Complexity Limited customization		

02 Requirements Gathering

01

Analysis of the project CasaViva+

Persona definition

02

Gathering information online (news, articles, ...)

03

Team brainstorm

Scenarios for said Persona

04

Extracting Requirements from scenarios

03 Persona

Mrs. Maria is 73 years old, she needs a caregiver because she has some health limitations;

Her health problems include:

- Motor and vision limitations;
- Memory problems and mood swings;
- And some chronic illnesses.

03 Scenarios

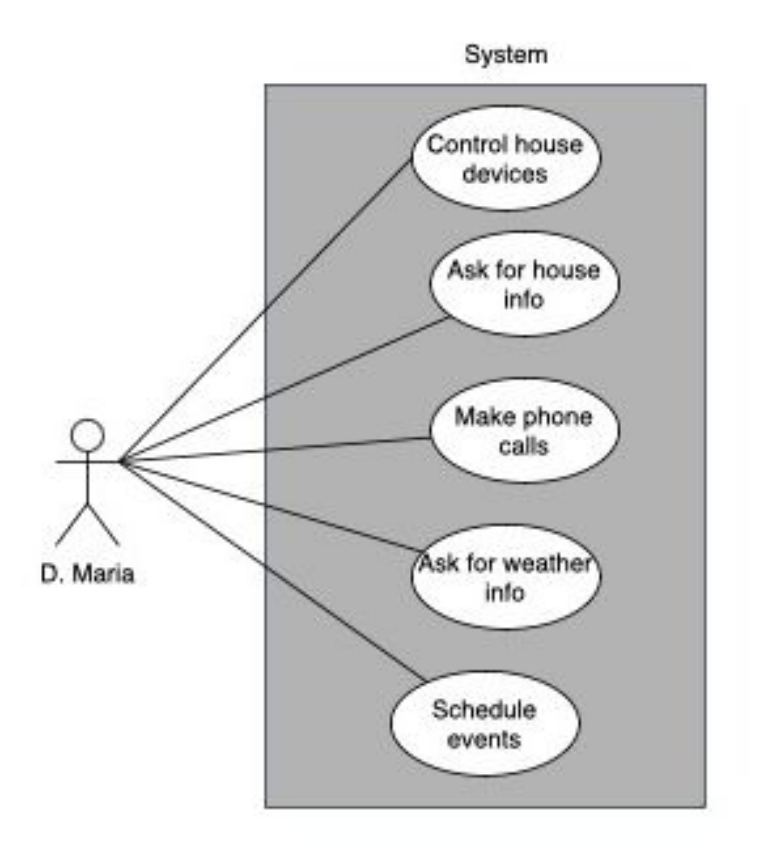
Call a family member

Recipes and products’ expiry date

Control of appliances/TV

Medication reminder

03 Scenarios - Use Case



04 Workflow Mock-Up

D. Maria: Olá Assistente!
Assistente: Boa noite D. Maria. Como posso ajudá-la?
Gostava de ligar a televisão para ver a novela que vai dar na SIC.
Muito bem! É isto que pretende?
Sim, obrigado. Mas não consigo ouvir muito bem daqui, podes pôr o volume mais alto?
Sim, já está. Reparei que se encontra na sala e as luzes do quarto e da cozinha estão ligadas. Posso desligar?
Não tinha reparado! Sim, obrigado. Já agora, está um bocadinho de frio aqui na sala, podes aumentar a temperatura?
Sim, claro. Aumentei dois graus a temperatura, está bom?
Sim, obrigado.
Reparei também que está a chegar à hora em que normalmente se vai deitar e o seu aquecimento no quarto está desligado. Pretende que ligue o aquecimento?
Ah tinha-me esquecido, sim por favor.
Já está. Posso ajudar com mais alguma coisa?
Não, obrigado.
Estou aqui para ajudar. Até à próxima.

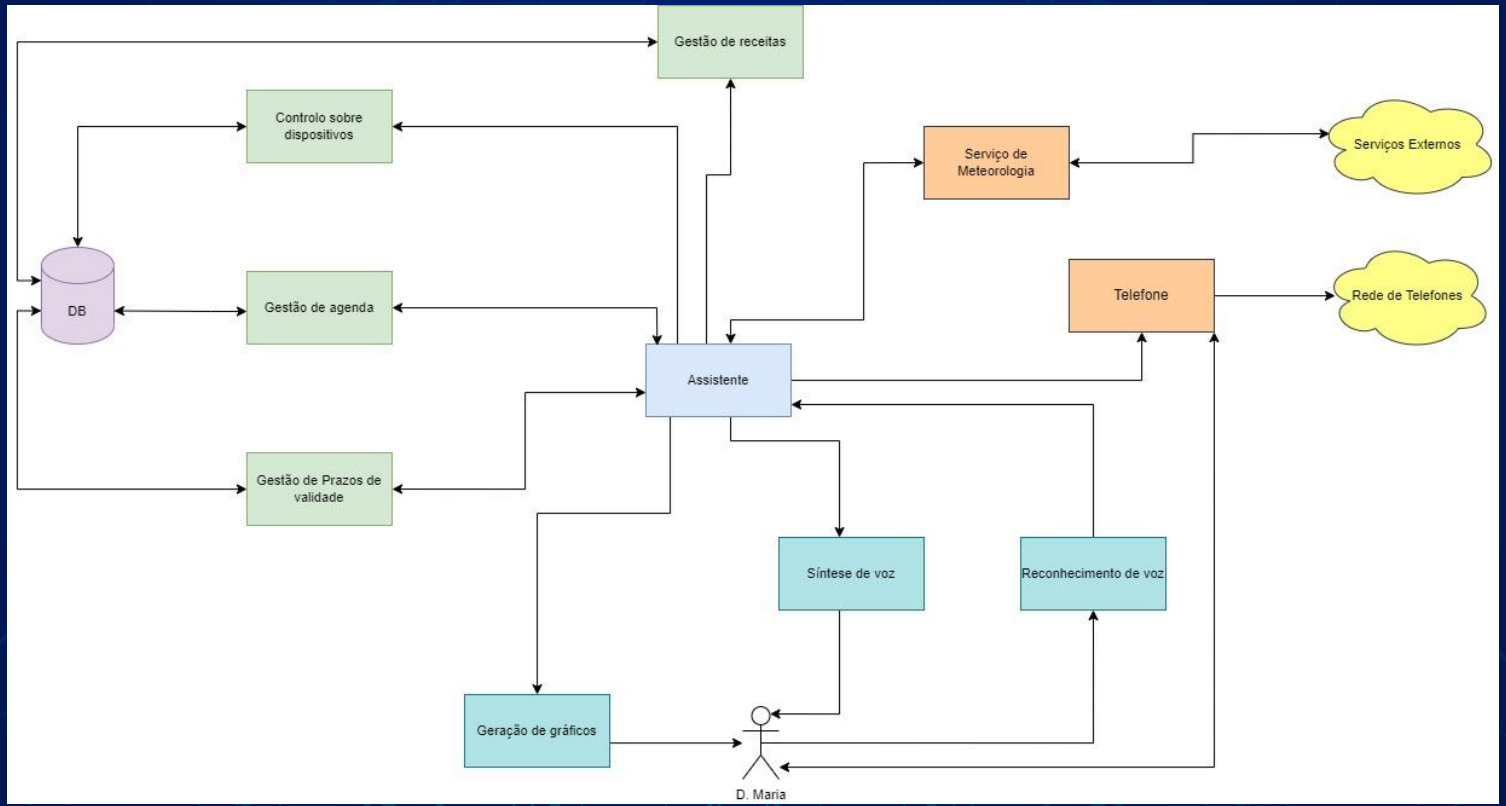
05 Functional Requirements

- Ability to interact with the assistant through voice;
- Ability to make calls/messages;
- TV control capability;
- Have access to recipes;
- Be aware of the expiration date of the products;
- Control of internal devices in the house;
- The assistant has the ability to transmit information to the inhabitant about the state of the devices;
- Management of an agenda;
- The assistant has the ability to warn/remind the inhabitant of important or recurring events.

06 Non Functional Requirements

- Processing unit;
- Assistant access to inhabitant location;
- Microphones and speakers;
- Camera or barcode scanner;
- Monitor device;
- Assistant availability in multiple divisions;
- Access to information outside the home;
- Voice understanding ability.

07 System Architecture



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