WasteService

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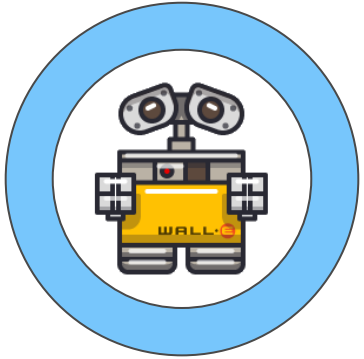
Project Theme

A company intends to build a **WasteService** for the separate collection of waste, composed of a set of elements:

1. A service area (rectangular, flat) that includes:
   a. An Indoor port, to enter waste material.
   b. A PlasticBox container, devoted to store objects made of plastic, up to **MAXPB** kg of material.
   c. A GlassBox container, devoted to store objects made of glass, up to **MAXGB** kg of material.
2. A DDR robot working as a **transport trolley**, that is initially situated in its Home location. The transport trolley has the form of a square of side length RD.
   The transport trolley is used to perform a deposit action that consists of the following phases:
   1. Pick up a waste-load from a waste truck located at Indoor.
   2. Go from the Indoor to the proper waste container.
   3. Deposit the waste-load into the container.
3. A Service-manager (a human being) which supervises the state of the service-area by using a **WasteServiceStatusGUI**, that must display:
   a. The current state of the transport trolley and its position in the room.
   b. The current weight of the material stored in the two waste containers.
   c. The current state of the Led.
4. A **Sonar** and a **Led** connected to a RaspberryPi. The Led is used as a warning device, according to the following scheme:
   a. The Led is **Off** when the transport trolley is at Home.
   b. The Led **Blinks** while the transport trolley is moving.
   c. The Led is **On** when the transport trolley is stopped.

   NB: The sonar is used as an alarm device: when it measures a distance less than a prefixed value **DLIMT**, the transport trolley must be stopped. It will be resumed when the sonar detects a distance higher than **DLIMT**.



Agile Scrum Methodology

Agile scrum methodology is a sprint-based project management system with the goal of delivering the highest value to stakeholders/customers. Each sprint consists of a Scrum goal, a work plan, a sprint review and a sprint retrospective.

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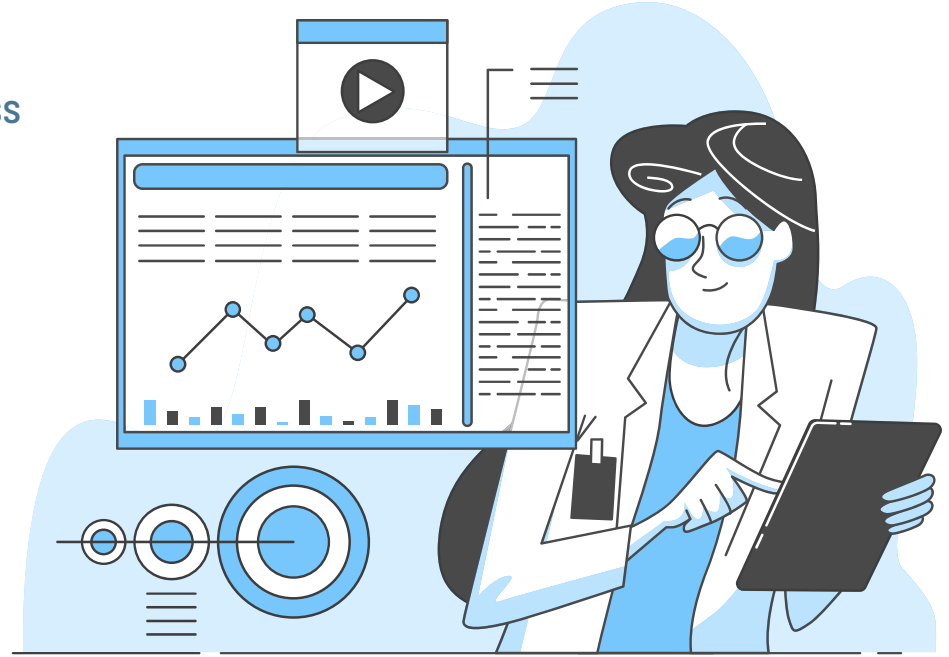
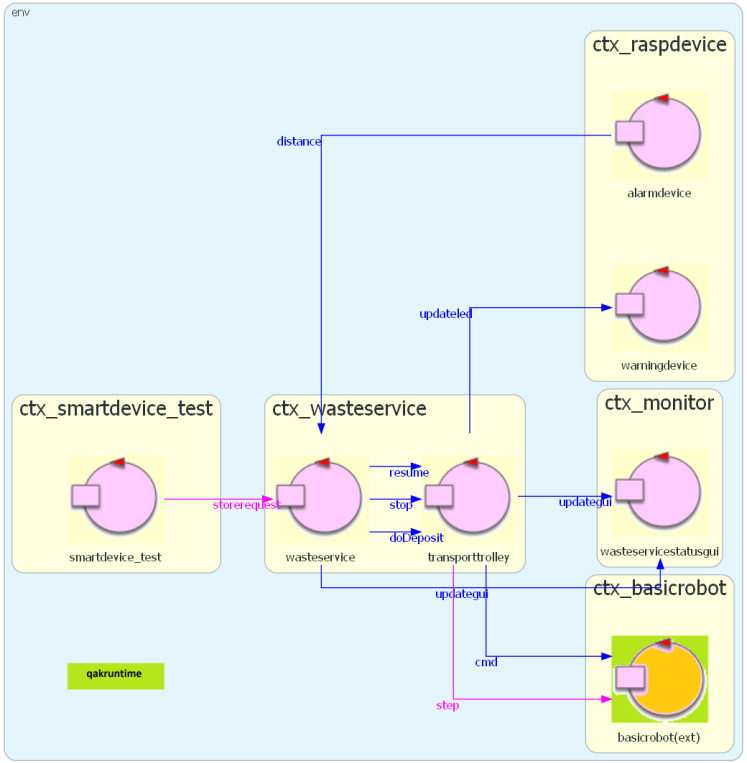


Sprint 0: System Overview



sprint0_system_overviewArch

Sprint 1: Core-Business

Requirements **1** & **2**

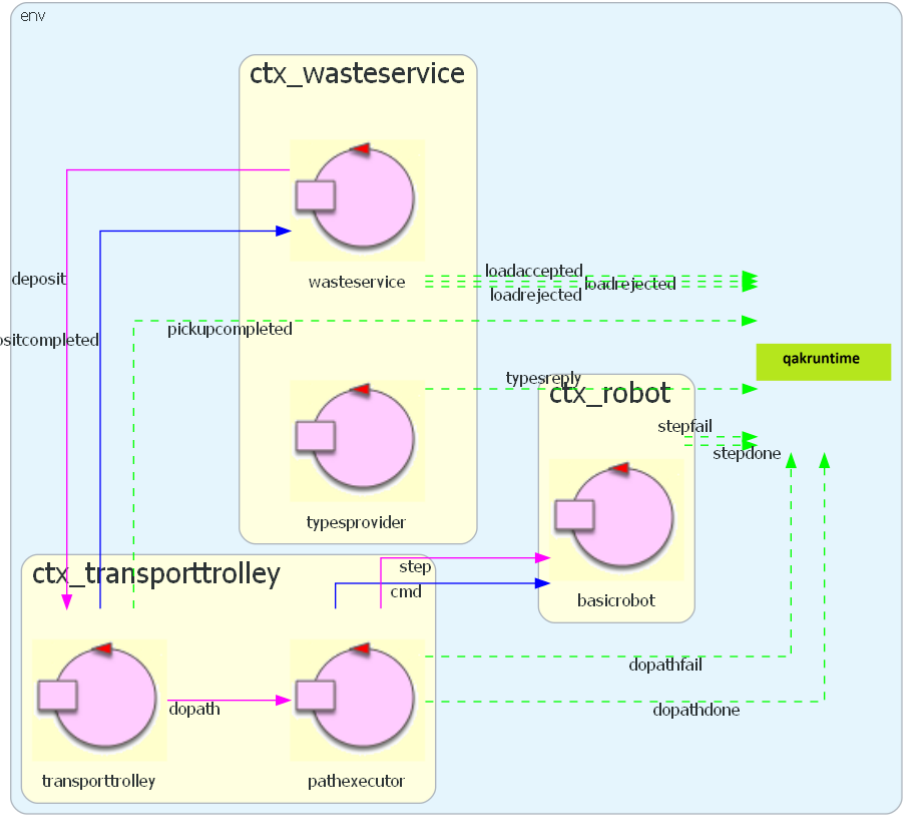
Sprint 2: Raspberry Pi

Requirement **4**

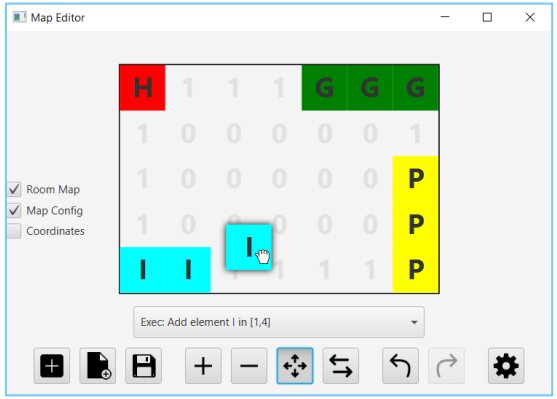
Sprint 3: Monitoring

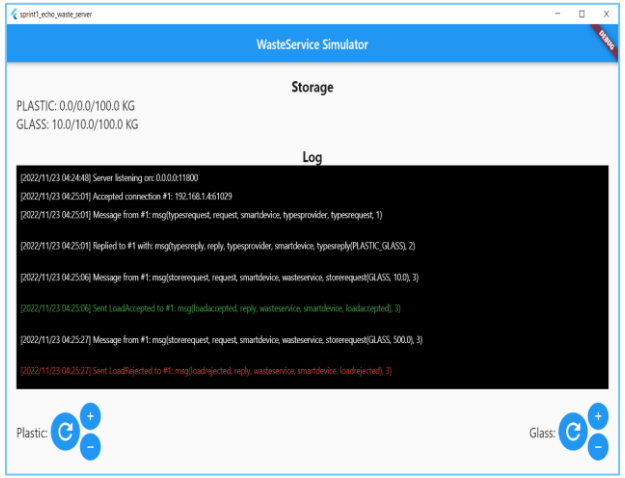
Requirement **3**

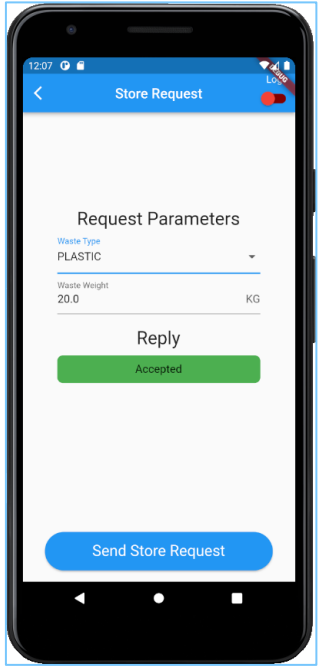
Sprint 1: WasteService Core



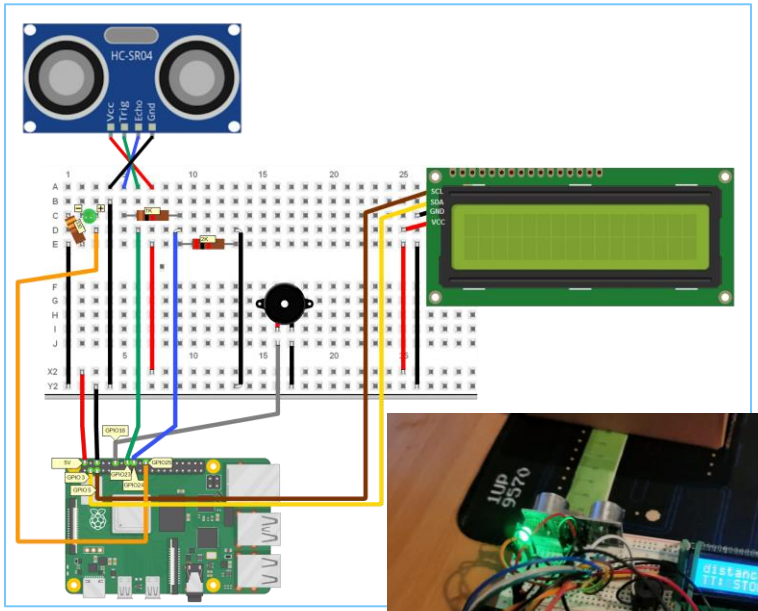
waste_serviceArch

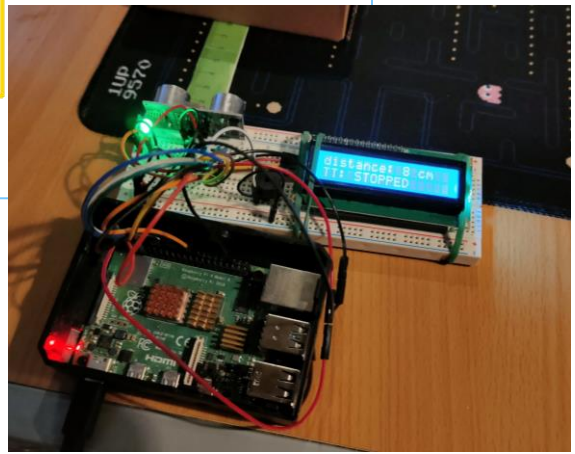


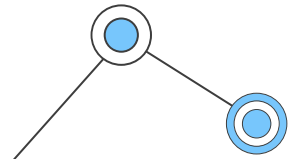


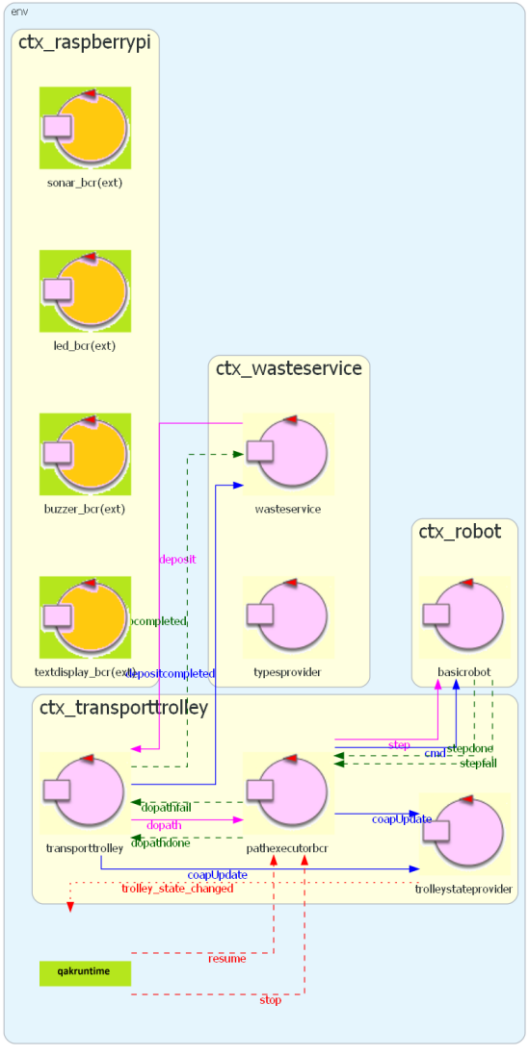


Sprint 2: WasteService RPi









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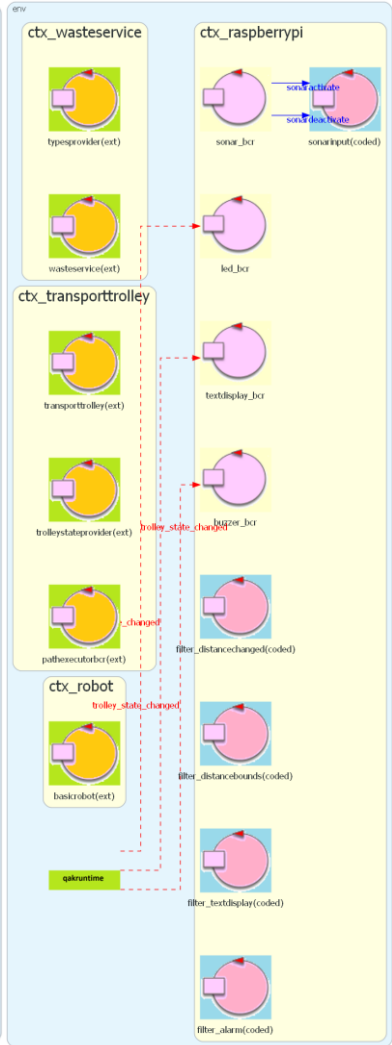
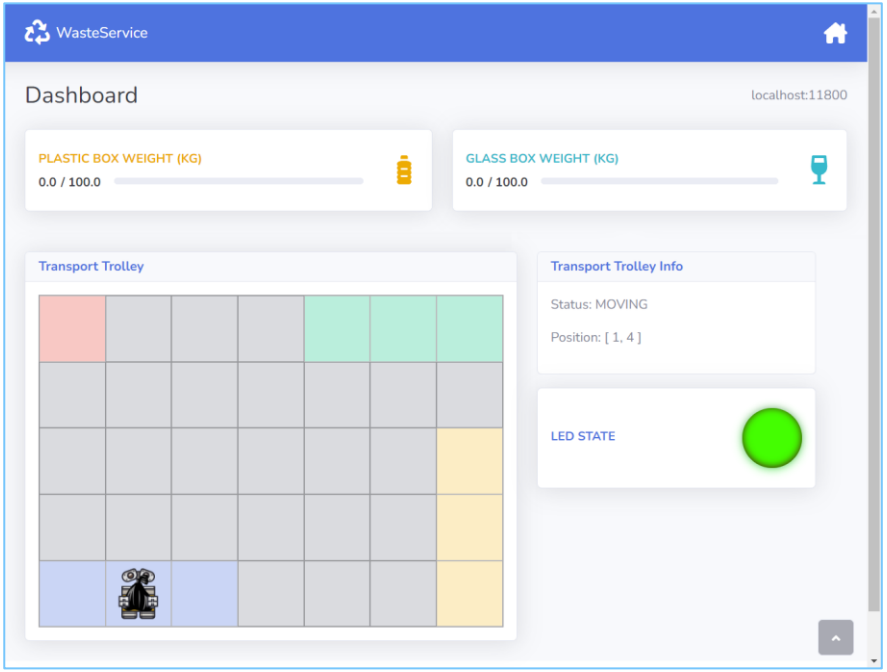
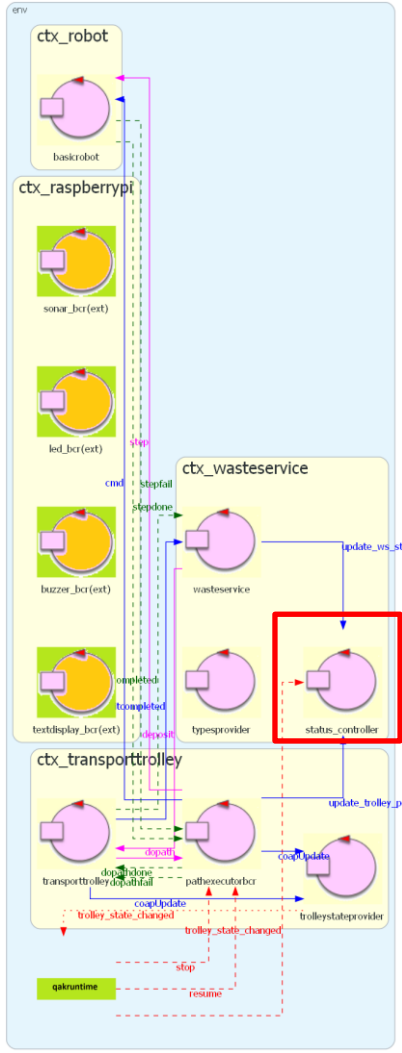


sprint2_raspberry_piArch

Sprint 3: WasteService GUI





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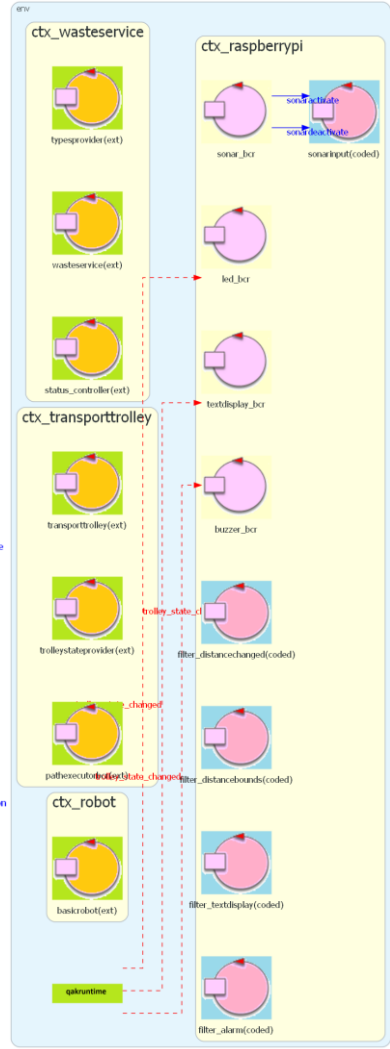

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Thanks!

Do you have any questions?

GitHub repository:
iss2022-BCR/WasteService