

# Sally Backend Requirements

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Document owner	Amit Bose
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## Goal

This document describes the requirements of a software system ("backend") that will be used for storage and retrieval of data related to cooking robots manufactured by Casabots, specifically Sally the salad making robot. The backend is a web-based system running on a cloud platform that provides scalable storage and secure, reliable API access to this data. Front-end systems, such as mobile apps, will be built on the basis of these APIs for interaction with Sally and such other devices.

## Background

Casabots is building a food robot, Sally, for making salads. While Sally provides an interactive system to build a salad, we also want to provide mobile apps that users can use to build their salads without being physically present in front of the device. We also want users to personalize their use of Sally (e.g. maintain a list of favorites). Secondly, we want to collect information about user behavior (such as salad type chosen, popular ingredients, demographics etc.) for analysis and reporting. To meet these goals, we need a central backend system that can be used to store various kinds of data and is easily accessible over the Internet.

## Users of backend

The backend needs to serve the following kinds of users:

- End users: people who will consume a salad
- Sally owners: people who own/operate a Sally machine, for example a restaurant owner or office administrator
- Devices: Sally machines that make the salad

## Interactions

The backend system must be capable of supporting the following interactions

### End-users:

- Create account and provide/update basic information like name, location, gender, DOB etc
- Login with a thirdparty authentication system like Google or Facebook.
- Fetch information about a Sally device: location, salads and ingredients available
- Request a Sally device to prepare a particular salad (salad configured remotely)

### Sally owners:

- Create account and provide/update basic information
- Register/unregister a Sally device as owned
- Fetch usage data about owned devices such as salads consumed, ingredients used, popular salads, popular ingredients etc

### Devices:

- Periodically report salads and ingredients available
- Report salad consumption information (type of salad, ingredient etc)
- Fetch remotely configured salad

## General Requirements

- APIs must be consistent, extensible, backwards compatible and well-documented
- APIs must be agnostic of the front-end systems
- Technologies used in the backend should be mature, easily portable and not be platform-specific (e.g. runs only on Windows)
- Communication between front and backend should be secure
- Access to backend data should be restricted to concerned parties only – end-users should be able to fetch/update only their data, owners should be able to fetch/update information only for their devices, devices should not be able to fetch/update data about end-users or owners