EVA
(Elderly Virtual Assistant)

Goal: We want to help elderly adults remain independent and they age and have new challenges regarding their health. Specifically, we are focusing on helping aid in the taking of medication properly.

Team Members

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Abstract

We are developing a virtual assistant device (EVA) to help **elderly people take their medication properly**. EVA will utilize **speech** and **image recognition** in order to allow the user to easily interface with it. User's will now be able to take their medicine the **right way** at the **right time**, and never run out of medication unexpectedly. EVA will **report** to physicians on prescription use metrics.

User Stories

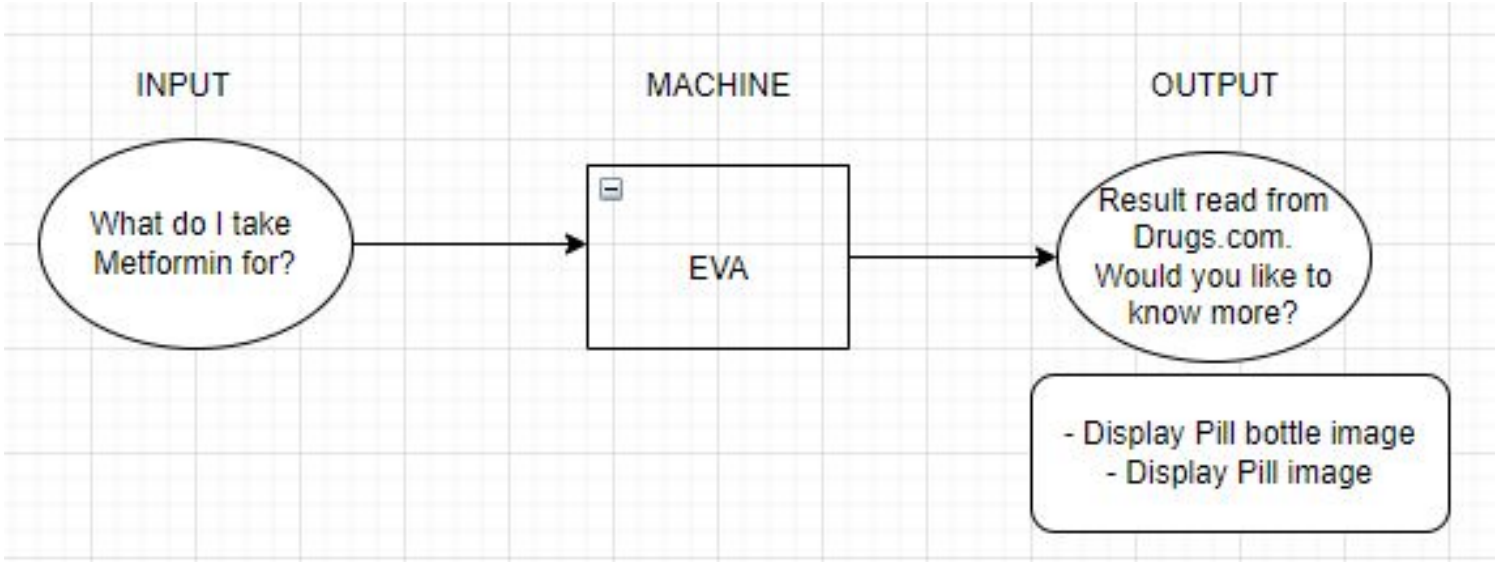
US1:
As an elderly adult, I want to take my medicine appropriately, so that I will improve my health and well being.

US2:
As a family member to an elderly adult, I want to be able to monitor if said elderly adult is taking their medicine appropriately, so that I can help them as needed and improve their health and well being

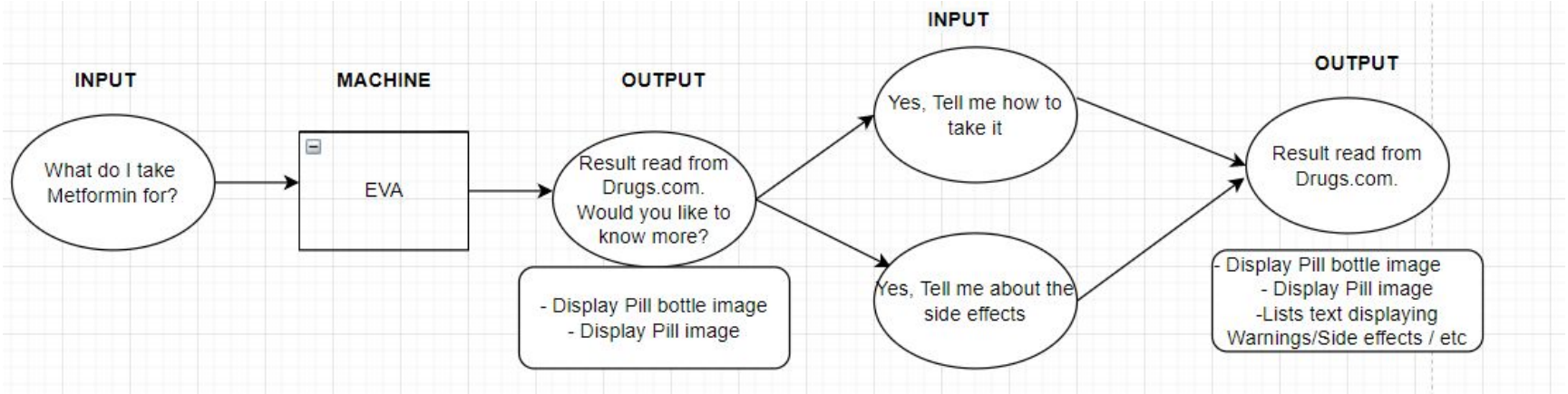
US3:
As a physician, I want to be able to monitor my patients medicine taking habits, so that I can appropriately make adjustments to their medicine / treatment plan to improve their health and well being.

US4:
As an elderly adult, I want to utilize a device to take my medicine appropriately, so that I can be more independent and take some responsibility off of my family members caring for me.

Design Diagrams



Design Diagrams (continued)



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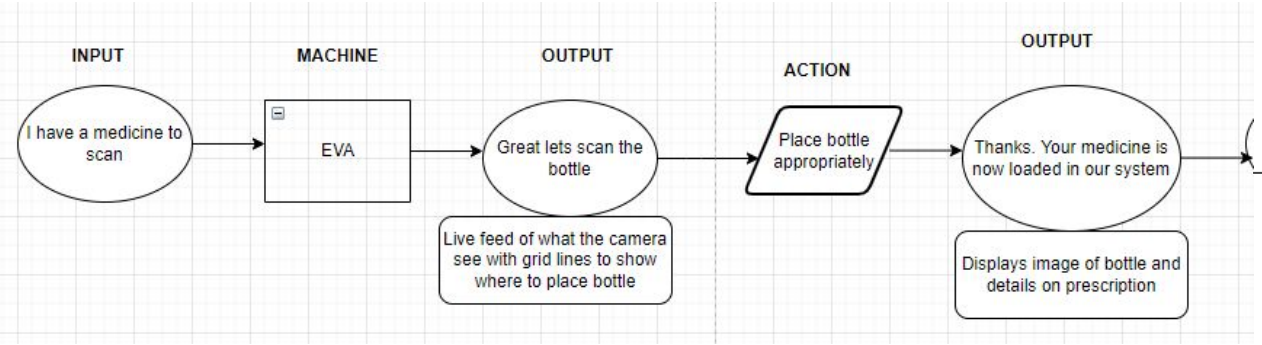

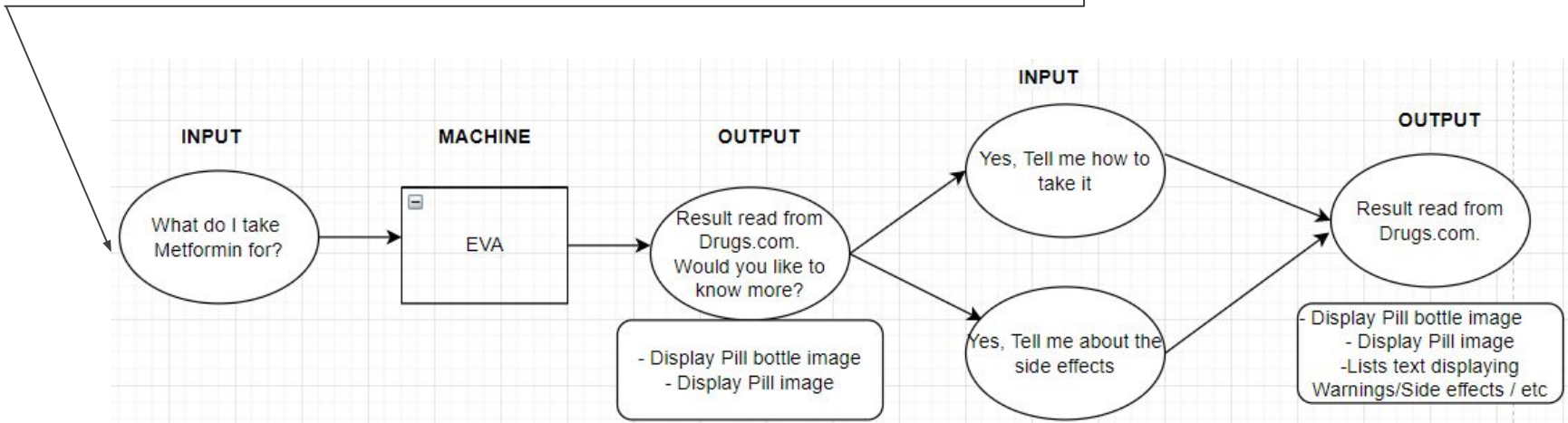

Major Design Constraints

Security:

- Device is always listening/eavesdropping on you. Will be resolved with mute button option.
- Only store information pertinent to medical well being, keep that very secure (encrypted) and all other info wipe from the device (conversations, video footage that's not the pill bottle, etc.

Scope:

- Other topics like: voice/ video calls, grocery services, cognitive skills, fall detection and many more.
- Must limit scope so we can deliver

Diversity/Cultural:

- Accents / Different languages need to be supported.
- Will be tested thoroughly across team with 8 different language/accents represented

Current state of project Progress

The device currently has parts selected, and is able to recognise a human's voice and talk back. It can also scrape Drugs.com for information on a specific medicine and read it to the user. We have a nearly final design that we'd like to use as well. Speech recognition and user startup needs to be ironed out but is roughly 75% done (Alex). Ram has started researching Image recognition and experimenting with it. He is roughly 25% of the way there. Yugo is working on making CAD models to 3D print using our components.

Expected accomplishments by first of year

We'd like to fully deliver on the startup process and speech recognition aspects by the end of the year. Ram would like to be roughly ⅔ of the way there with the image recognition, being able to read from the cylindrical surface and detect all the information we need. Yugo would like to have a completed CAD model for the device, waiting to be printed by the first of the year.

Division of work

Andrew: Researching HIPAA compliance, working towards getting our device certified

Yugo: Needs to model our parts in CAD, Design a housing for the components, and 3D print the design for us to use in our final product

Software

Task	Assigned to:	Time
Obtain basic information	Alex	3
Take pics of bottle labels	Ram	25
Store labels from pill bottles	Ram	1
Display labels on screen	Alex	1
Medication Reminders	Alex, Ram	25
Record if and when medication is taken	Ram	2
Take picture of consumer taking medications	Ram	4
Compliance Reporting	Alex	25
Drugs.com Information	Alex	10
Prescription Finish reminder	Alex	2
Prescription Refill Reminder	Alex	2

Expected Demo at Expo

We’d like to showcase different features of our device at the demo, specifically a process that would look like how the user interacts with the device on a day to day basis.

That would look like: being reminded to take medication, giving information on medicine from Drugs.com, scanning prescription bottle (showcasing image processing), and interacting with the device in general.