

# Remembrall

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## Engineering Problem

There is a classic problem in Natural Language Processing of Question Answering. That is, creating a program that responds to human questions in a believable way.

I would like to work on a version of this problem with an important constraint: the program only has to be able to answer questions that it's already been told the answer to.

## Motivation

I've been wanting to create something that can remember things for me. The sort of tidbits that I wish I could remember but always seem to forget. For example, "John's fiancée's name is Maria." I would then be able to ask, "What is John's fiancée's name?" or "Who is John's fiancée?"

Additionally, one of the important things I've picked up about AI is that finding the right constraints for your problem can make it drastically more feasible while still allowing the solution to perform a worthwhile function. The proposed constraint on the Question Answering problem makes it much more tractable but, I think, still very useful.

## Ideas to Get Started

My current thought for how to accomplish this is to have a couple of prefixes, such as "Remember that..." that indicates that you are telling the program something it should remember. The program saves all of these "memories." Then, when you ask it a question, it performs a version of maximum bag-of-words similarity between the question and every saved memory. Then, as an answer, it simply regurgitates that memory word for word (perhaps replacing "I" with "you" and "my" with "your").

This method simplifies the problem greatly. Using the memory phrases themselves to answer questions prevents the need to generate coherent sentences or understand the memories.

## Places to Go

### Intelligence Improvements

Ideally, the system should not use simple bags of words. Synonyms need to be accounted for, as well as distinguishing between subjects and objects. For example, the program should be able to differentiate the memory "April likes Andy" from "Andy likes April."

### Interface Improvements

Another direction to go would be improving the interface. Originally, it will just be a textual interface for simplicity. However, I would love to turn it into a Google Assistant add-on so that you could actually tell the program verbally what you would like it to remember and then have it respond to questions.