

S.A.R.A.H.

Version 0.1

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Welcome

This is the User's Manual for the devdaily.com **SARAH** ("Sarah") software application.

Sarah is a voice interaction application for the Mac. In short, you can tell your computer what to do by talking to it, and it will respond to you by voice as well.

In addition to working in a back-and-forth mode like that, Sarah also has "agents" that can run in the background, and do things like check your email, and let you know if you have new messages from the people you specify.

You can think of Sarah as being a little bit like Siri for the Mac, but it's more limited than Siri in most ways. For instance, it can only respond to known commands; it can't try to understand complete sentences you say. (More on the "known commands" shortly.)

Cautions about using Sarah

Working with voice-driven applications is tricky. I've only tested Sarah in quite environments, such as my apartment and various offices. It won't work well in loud environments, such as a restaurant.

Caution: This is the 0.1 release of Sarah. As that number implies, this software is very new and rough around the edges. This release is intended primarily for computer programmers, hobbyists, and enthusiasts who are willing to try Sarah and give me feedback. If you can't edit a couple of text files to get Sarah working well for you, this release probably isn't for you.

Installing Sarah

Installation instructions are in a separate file named, "Installing Sarah.pdf".

Using Sarah

Using Sarah is generally pretty easy. Just click the Sarah icon to start it, like any other application. When it starts it should say “Hello” to you. (Actually, it will probably say, “Hello, AI”, but you can change that.)

Once Sarah is running, try saying simple phrases like the following:

- Computer
- What time is it?
- What day is it?
- Current time
- Good morning
- Good afternoon
- Good evening

You can put Sarah to sleep with this command:

- Go to sleep

You wake Sarah up from sleep mode with this command:

- Wake up

Sarah currently knows a few iTunes commands, and can also start a DVD:

- Play music
- Next track
- Stop music
- Play video

As you should see, when Sarah is a) doing nothing, or b) listening to you, the main window is green. When Sarah is speaking, the window turns yellow, and when Sarah is working on something for you (such as checking email), the screen turns a light gray color.

Sleep Mode

Sarah is pretty good at not listening to songs and videos that are playing, but in general, you'll probably want to tell Sarah to "go to sleep" when you play music or videos. This puts Sarah into a state known as "sleep mode."

Sleep mode is a special mode where Sarah only responds to one command: "Wake up." Sarah actually listens to all your commands, but that's the only one it responds to.

In sleep mode, Sarah's window will turn a dark gray color.

Changing Sarah's Voice

In the future I'll let you control Sarah's voice through the user interface, but for now, the only way to control the voice is by changing the default voice on your Mac.

You can change the default voice like this:

1. Click the Apple icon in the menu bar.
2. Select System Preferences...
3. Click the Speech icon in the System group.
4. Click the "Text to Speech" tab.
5. The default voice is the "System Voice" setting on this panel. Experiment with different voices, but my favorites are Alex and Vicki.
6. Quit the System Preferences app when you're finished.

Sarah Plugins

Hopefully, a great thing about Sarah is that it can be extended by adding *plug-ins* (“plugins”).

Plugins are little pieces of code that many computer programmers can write to make Sarah smarter. Currently, when you say “What time is it?”, “Current weather”, or some other phrases, the intelligence behind the scenes is actually handled by plugins that I’ve written.

Plugin Ideas

To give you an idea of the power of this approach, here are some ideas for other plugins that can be written for Sarah:

- Check email (this is already working, a little)
- “Top news” (top sports, top business, etc.)
- Twitter trends (included in the current distribution)
- Check Facebook
- Stock market checker
- Create reminder
- Send email (dictate email)
- Interact with physical devices around your home, such as “Turn on kitchen lights”, and so on.

Installing plugins

If you have a plugin for Sarah that you want to use, such as the Twitter plugin that ships with Sarah 0.1, installing it is pretty easy. Just copy the plugin to Sarah’s plugin directory. On my computer, Sarah’s plugin directory is located here:

```
/Users/Al/Sarah/plugins
```

To get the Twitter plugin to work, just copy the DDTwitter folder into that plugins folder, right next to the other plugins that are already installed. Once this is done, restart Sarah, then say “current trends”. Sarah should then read the latest list of Twitter trends.

Customizing plugins

Many plugins can be customized, and other plugins, such as the email plugins, definitely need to be customized.

Hopefully this process is also simple. To customize a plugin, look in the plugin's folder, and you should find a file that ends with the extension ".properties". This is a plain text file that you'll need to edit to use that plugin.

For example, looking at the DDInteractiveEmailClient plugin that ships with Sarah, if you look in the DDInteractiveEmailClient folder, you'll see a file named InteractiveEmailClient.properties. On a Mac, you can edit that file by right-clicking on it, choosing "Open With..." on the popup menu, then selecting TextEdit from the Applications folder.

When you edit that file, you'll see some text like this:

```
{
  "whatYouSay" : "check email"
  "accountName": "Ymail Account",
  "username": "YOUR USERNAME",
  "password": "YOUR PASSWORD",
  "imapServerUrl": "imap.mail.yahoo.com",
  "protocol": "imaps",
  "mailbox": "inbox",
  "usersOfInterest": ["barney_rubble", "betty_rubble", "Wilma"]
}
```

In all of these properties files, you'll want to edit the values on the right side of the ":" character on each line. Here's some documentation for this properties file:

- whatYouSay is the text you want to say to the computer to tell it to check your email account. (Note that if you change this phrase here, you'll also have to change it in the `sarah.gram` file, as explained later.)
- accountName doesn't matter too much, but it can say something like "Yahoo Mail", "Gmail", or whatever email account you want to use. (In the future this plugin will support multiple email accounts.)
- username and password are the values you use to login to your email account with.
- The imapServerUrl, protocol, and mailbox shown are the correct values for Yahoo Mail. For Gmail, the imapServerUrl should be "imap.gmail.com".
- usersOfInterest is a list of the people you want to be notified about when the email plugin checks your email. The example shown will notify you if email has been received from Barney, Betty, or Wilma. (I may change this in the future, but that's the way it works right now. Let me know what changes you'd like.)

Customizing Sarah

Even if you're not a programmer who wants to write plugins, you can customize Sarah's behavior by editing the files in the "Sarah/data" directory. As a warning, it's easy to mess things up by doing this, but once you understand what's going on in that directory, you can add new behaviors to Sarah by editing those files.

For example, if you know a little bit of AppleScript (or you're willing to search the internet, like I did), you can add a behavior like "Start screensaver". I've already added this command to Sarah's files, and here's a quick review of what I did:

1) First, add this line to the `sarah.gram` file:

```
public <SCREENSAVER> = start (screen saver | screensaver);
```

2) Add these two lines to the `custom.c2p` file:

```
SCREENSAVER : start screensaver  
SCREENSAVER : start screen saver
```

3) Add this line to the `custom.commands` file:

```
SCREENSAVER : tell application "ScreenSaverEngine" to activate
```

(Again, sorry about the duplication in the first two files. I hope to fix this at some point down the road.)

The "tell application" part of that last edit is actually an AppleScript command. Sarah has the ability to run most AppleScript commands, though I should say that I've only tried commands that I'm interested in.

If you make a change like this while Sarah is running, you'll need to restart the app. (Just quit it and restart it like any normal Mac app.)

Over time I'll add more instructions in a "programming" or "customizing" document, but for now, I hope this will help you get started.

Built-In Voice Commands

As mentioned in this document, Sarah supports the following keyboard commands:

Command	Description
“Computer”	Use this command to check if Sarah is listening.
Just checking	Use this command to check if Sarah is listening.
Go to sleep	Puts Sarah into Sleep Mode.
Wake up	Wakes Sarah up from Sleep Mode.
What time is it?	Gets the current time.
What day is it?	Gets the current date.
Current weather	Gets the current weather from the Yahoo weather service. You can set your own zip code in the “WeatherPlugin” in the Sarah/plugins folder.
Weather forecast	Gets the weather forecast for the next two days.
Start screensaver	Starts the screensaver on your computer.
Good morning, Good afternoon, Good evening, Good night	Miscellaneous phrases you can say, if you want.
Play music	Start playing iTunes.
Stop music	Stop iTunes.
Next track	Play the next track in iTunes.
Play video	If you have a DVD in your Mac, Sarah will start playing it.
Thank you	In case you ever feel like thanking Sarah for something.

Frequently Asked Questions (FAQs)

1) When it starts, Sarah says, “Hello, AI”; how do I change that to my name?

In the “Sarah” folder in your home directory (like “/Users/AI/Sarah”), there’s a file named `Sarah.properties`. Change the value of the `your_name` field in that file to your name, or whatever else you want Sarah to say.

2) When Sarah first starts, it doesn’t seem to be listening to me, what can I do?

There is a known problem that every once in a while when Sarah first starts, it doesn’t listen to you. The temporary solution is that if you keep trying to give it commands, it usually starts in about thirty seconds.

Sarah logs a lot of information, so you can see that it’s ignoring you, if you want to. To do this, follow these steps:

1. Click your Applications folder, scroll down if need be, then click the Utilities folder.
2. In that folder, click the Console app icon.
3. If the app has an icon named “Show Log List”, click it.
4. In the panel on the left side, under the “FILES” section, click `system.log`.
5. In the panel on the right side, you’ll see all the debug information Sarah is writing. If this is the problem you’re experiencing, Sarah will output a message that says something like, “heard a noise, but couldn’t interpret it.”

6) Sarah keeps hearing herself speak, and responds to herself, talking in an endless loop. What can I do to fix this?

If this happens, the first thing you can do is to press the mute button on your keyboard so Sarah will quit listening to herself, and get out of that loop. Either that, or quit the Sarah application.

The second thing you can do is edit the `Sarah.properties` file in the “Sarah” folder in your home directory, and change the `sleep_after_speaking` value to something longer. The default is 1500 milliseconds, and you can increase that to 1750, 2000 ms, or more if need be.

7) Sarah runs in full screen mode, and I don't like that. Can I change this?

Not yet. Most people I know use the “Spaces” feature on the Mac, where you can have multiple desktops, so I initially wrote Sarah to run in full screen mode to completely occupy one of these spaces. The plan was to add some interesting animations to the Sarah UI, and make it work like a screensaver. As a result, it currently only runs in full screen mode.

As a result, you can't minimize the Sarah window, but you can hide it, just like you can hide any Mac application. Just press *[command][h]* to hide the Sarah window. To “un-hide” the Sarah window, just click the Sarah icon in your Mac Dock.

Additional Information

For additional information, visit my Sarah web page at this URL:

<http://www.devdaily.com/sarah>

If you like using Sarah, please link to that URL; more links will make it easier for people to find Sarah, and the more people that use Sarah will make it easier for me to spend more time on this project.

If you have other questions, comments, or suggestions, please use my contact form, at this URL:

<http://www.devdaily.com/contact>

I hope you enjoy using Sarah as much as I do!

Attributions

If you've followed me on Twitter or Facebook, you know that the name Sarah comes from the smart house named "S.A.R.A.H." on the fun tv show, Eureka.

I've also written there that the voice-recognition capability of the application comes from the excellent open source Java *Sphinx-4* project. Sarah could not exist at all without that project.

When Sarah speaks, it talks through the AppleScript "say" command. Many thanks to Apple for providing AppleScript, including this speaking command.

I don't remember where I got the big microphone image that is shown when Sarah is active. I will change that image, and the splash screen image, in the next release. (Actually, what I'm planning to do is let you use your own images.)