Version Control System (Git)

You use Git for version control of your software as you work on it, to avoid losing work due to hardware failure or system administrator mistakes. You can use GitHub to upload your Git repository to an online server. You can check whether you have Git installed on your system by issuing the following command:

```
$ git --version
```

This command gives me the following output:

```
git version 2.6.2
```

If you do not have Git installed, you can install it using the instructions at http://git-scm.com/downloads.

PortAudio

PortAudio is an open source input/output library. It is cross platform and is available in the form of source files that can be downloaded from www.portaudio.com/download.html. It can be compiled on many platforms such as Windows, OS X, and Unix. PortAudio provides a simple API for recording and playing sound that is used by some of the speech-recognition modules in future chapters.

PyAudio

PyAudio provides Python bindings for PortAudio. With the help of this software, you can easily use Python to record and play audio on a variety of platforms, which is exactly what you need for your STT engine. You can find the instructions for installing PyAudio at http://people.csail.mit.edu/hubert/pyaudio/.

You also need a microphone via which you can speak to your computer (and perform voice recording) and speakers to hear the output. Most modern laptops have these installed by default. For a Raspberry Pi, you need an external microphone and speakers/earphones.

Designing Melissa

You will follow the DRY (don't repeat yourself) and KISS (keep it simple, stupid) principles and use modular code to design Melissa. Doing so helps maintain your code properly and makes it easier to scale the code in the future when you want to add cool features to your existing codebase. So, let's first design the structure of your code directories:

```
gitignore
GreyMatter/
   SenseCells/
      __init__.py
```