Integrating STT and TTS in Melissa

As discussed in Chapter 1, you are past the stages of learning concepts and prototyping STT and TTS; now it's time to integrate the STT engine as well as the TTS engine in Melissa in a proper, reusable fashion.

First, let's put the TTS in place, because the TTS engine is complete and does not require any changes or additions to the code. Put this in a file called tts.py, and place it in the following location:

```
GreyMatter/
        SenseCells/
                __init__.py
                tts.py
                __init__.py
        ...
```

You may remember this directory structure from the "Designing Melissa" section of Chapter 1. Now the TTS is in a package and can be called from other Python files after importing it. Next, edit the main.py Python file:

```python
import sys

import yaml
import speech_recognition as sr

from GreyMatter.SenseCells.tts import tts

profile = open('profile.yaml')
profile_data = yaml.safe_load(profile)
profile.close()

# Functioning Variables
name = profile_data['name']
city_name = profile_data['city_name']

tts('Welcome ' + name + ', systems are now ready to run. How can I help you?')

def main():
    r = sr.Recognizer()
    with sr.Microphone() as source:
        print("Say something!")
        audio = r.listen(source)

    try:
        speech_text = r.recognize_google(audio).lower().replace("'", "")
        print("Melissa thinks you said '" + speech_text + "'")
    except sr.UnknownValueError:
        print("Melissa could not understand audio")
```