

Intergalactic Symphony

Have you ever wanted to program a robot to play music from one of your favorite space movies? With the help of Python (and maybe the force) you to can have your own robot symphony!

Project submitted by Prof. Jessica Kaufman.

Instructions

1) The first step we need to do is set up Create 2 with your computer.

A) Mac Users:

Stick with Python 2 (it's pre installed) and use a forked version of [create.py](#)

B) PC Users:

Follow the guidelines located [here](#).

2) Play one note at a time:

In a Python shell, test out the playNote command to see how it works.

1. r.playNote (62, 12, songNumber=0)

2. r.playNote (72, 12, songNumber=0)

3) Use for loop to play song:

```
iRobot_Song.py - C:/Python27/Scripts/iRobot_Song.py
File Edit Format Run Options Windows Help
#Import libraries and modules needed for this script
from serial import *
from create import *
from decimal import *
import time

#Connect to local iRobot (make sure to update port)
robot=Create(10)

#Define song as three lists for notes and beats and rests
#If you don't include time.sleep command, all three notes play together
notesList = [72,62,84]
beatsList = [12,12,48]
restsList = [.24,.24,.96]

#Play song with for loop that goes through list
for i in range(3):
    robot.playNote(notesList[i],beatsList[i],songNumber=0)
    time.sleep(restsList[i])
```

STEM Skills:

- Python 2

Experience Level:

Advanced

Supplies:

- Create 2 Robot
- Communication cable
- Mac or PC Operating system

Additional Resources

[Python Implementation for Create OI](#)

- 4) Now look up the sheet music for your favorite song. Here is one example of a public domain sheet music site: http://www0.cpdll.org/wiki/index.php/Main_Page

You can look up the numerical value of each note on [Page 12 of this guide](#), but the numbers correspond to Arduino notes, too. If you find an example script for playing a song with the Arduino buzzer, you can copy the notes.