Python: Alarm Clock Workshop

**Learning Objectives:**

* Understand basic Python coding
* Use a Raspberry Pi
* Navigate linux in terminal
* Use apt-get

**Materials Needed:**

* 6 Raspberry Pi’s with power supplies and HDMI cable
* 6 Monitors with sound output/headphones
* 6 Keyboards and Mice
* USB drives with sound file downloaded
* Multi outlet

**Lesson Plan:**

* Introduction (5 minutes)
  + Name, description of Techlab and what we do. Verify each person has materials.
* Navigation (5 minutes)
  + Open terminal
  + Sudo apt-get schedule
  + Cd to Documents
  + Mkdir for this project: “alarm”
* Brainstorming
  + What will we need to create an alarm?
    - Some kind of scheduler
    - Something to play audio
    - Something to locate sound file on system
* Modules
  + Open IDE
  + Import list dir/pygame/time/schedule modules and explain what they are.
* Creating Function
  + Explain what a function is (container of a set of instructions)
  + Explain what a variable is (and why you want to use them)
  + Create variable in function to locate sound file and print
  + Do job thr While True at bottom of function
* Playing a Sound file
  + Initalize pygame and mixer
  + Load audio file
  + Code pygame to play
  + Test in While True
* Schedule
  + Utilize schedule format
* Conclusion
  + Go over what else can be done with Pi’s
  + Talk about checkout kits
  + Thanks for coming

Code:

from os import listdir

import pygame

import schedule

import time

def job():

location = 'home/pi/Documents/alarm/alarm.wav'

#ensure file name is the same

pygame.init()

pygame.mixer.init()

pygame.mixer.music.load(location)

pygame.mixer.music.play(0)

#loads sound

schedule.every().day.at("15:00").do(job)

#schedule.every(1).minutes.do(job)

#for quick schedule testing

while True:

schedule.run\_pending()

time.sleep(1)

#job()

#for quick sound testing