[based on version tjbot-heptathalon.js]

Setup

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* Connections and power for bot, screen, speakers
* Open
  + Console (resize for height)
  + IDE
  + Browser (IBM Research, GitHub, Instructables, Bluemix Logon)
  + /tmp for visual recognition pictures
* Check volume, WiFi

Intro

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* Hi, I am Ron Mauer, and I’d like to show you how I have exercised the TJBot hardware, tjbotlib and Watson cognitive services to perform a robotic heptathalon. My TJBot will:
  + engage in a conversation and recognize spoken intents;
  + Show empathy via voice transformations for the Allison voice;
  + Detect emotions and provide feedback by pulsing LED colors;
  + Translate and speak a simple phrase in a non-English language
  + Communicate with motion using its arm
  + Visually recognize objects in a photo;
  + Lookup and read News headlines using Watson Discovery;

Components

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* Hardware
  + Raspberry Pi 3 with power adapter
  + Raspberry Pi Camera V2, 16GB microSD with NOOBS preloaded
  + USB Audio Adapter (struggled with USB Mic only), self powered speakers and mic with 3.5mm jacks
  + multi-colored LED light and servo motor
  + a couple of jumper wires
  + keyboard, mouse, hdmi monitor
* Software
  + Raspian with Pixel Desktop
  + GitHub, Instructables Slack – parts list, TJBot code, instructions and support
  + Watson services on IBM Bluemix - Conversation, STT, TTS, Tone Analyzer, Language Translator, Visual Recognition, Discovery, Watson Health (future)
  + nodejs script to bring TJBot to life - variation of "Conversation" recipe

Capabilities

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* Conversation (includes listen, speak)
  + Listens for catchword - in this case "Lisa" (change from ‘TJ’)
  + LED flashes green when detected to add visual feedback to speaker
  + launches Watson Conversation to detect intent of utterance
  + Depending on Intent detected (and confidence!)
    - Generate a random spoken response from Conversation
    - Perform other actions based on Intent detected
  + demonstration
    - Lisa Hello (too trite? Consider eliminating)
    - Lisa what can you do, Lisa what are your capabilities, Lisa what else can you do  
      (demonstrates same intent from different utterances, random answers)
    - Lisa please tell me something funny
* Detect Emotion
  + respond differently if speaker is angry vs joyful
  + Tone Analyzer evaluates every utterance with catchword
  + flash LED based on emotion
    - anger = red
    - fear = orange
    - disgust = purple
    - sadness = blue
    - joy = white
  + demonstration
    - Lisa I am mad this is taking so long (anger = red)
    - Lisa I am in danger, Lisa I am afraid of robots (fear = orange)
    - Lisa that is gross (disgust = purple)
    - Lisa I am disappointed the Pirates won’t make the playoffs (sadness = blue) (false positives with Joke intent!!)
    - Lisa I am happy the Pirates won last night (joy = white)
* Transform Voice
  + SSML (Speech Synthesis Markup Language) standard to transform voice by varying pitch, rate, volume, range
  + Demonstration
    - Lisa can you transform your voice
* Translate Languages
  + demonstration
    - Lisa what languages do you know
* Communicate with Motion
  + role of visual input in communication (gestures, expressions)
  + demonstration
    - Lisa can you move your arm?
    - Lisa Goodbye (add wave element to spoken phrases)
* See
  + Ability to recognize objects
  + Demonstration
    - Hold “flashcard” about six inches away, above and left of center)
    - Lisa what do you see
    - Keep flashcard steady and in position
    - See actual photo in /tmp directory
* News
  + Use Watson Discovery service to index, natural language query news sources
  + Demonstration (filter = positive!!)
    - Lisa recent press release from IBM
    - Lisa latest financial news for IBM
    - Lisa news for [Highmark Health / Pittsburgh Steelers / Robotics / Peters Township / Jennifer Lawrence / eclipse]

Close

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Hope you have found my TJBot recipe useful. Have fun with your TJBot project!!