NAO Pyrobot Interface Documentation

Motion

Commands for `self.robot`

- `slaveAll()`
  engage all motors
- `unslaveAll()`
  disengage all motors
- `slaveJoint(`*`joint`*`)`
  engage a single motor or joint chain
- `getAngle(`*`joint`*`, `*`angle`*`)`
  read a single joint or joint chain
- `setAngle(`*`joint`*`, `*`angle`*`)`
  control a single joint or joint chain
- `goNeutral(kneeAngle=40, torsoAngle=0, wideAngle=0)`
  set robot to a ready position
- `hand(`*`hand`*`)`
  open or close 'LHand' or 'Rhand'
- `sit()`
  sit down from any position
- `stand()`
  stand up from any position
- `wave(arm='both')`
  wave 'left', 'right', or 'both' arms

LEDs

Commands for `self.robot.leds[0]`

- `setEyeLed(number, color, time=0.2)`
- setEyeLeds(color, time=0.2)
- `eyeProgression(percent, colorA=0x00ff00, colorB=0x0000ff)`
  use robot's eyes as a progress meter
- `fadeRGB(group, color, speed=0.0)`
  fade a specific set of LEDs to a color over time (see API reference for LED names)

Note on colors: all colors must be in hexadecimal RGB format, e.g. 0xRRGGBB where RR, GG, and BB are 2-digit hex values from 00 to FF

Speech

Commands for `self.robot`

- `say(string, shaping=0, speed=0, wait=False)`
  string: the string to say
  shaping: voice pitch modulation, defaults can be set in the tts device window
  speed: voice speed, defaults can be set in the tts device window
  wait: allow string to queue behind other tts calls (default is False)

Commands for `tts[0]`

- `voiceType(voice, speed=100, shape=100)`
  sets default voice for say() command, where *voice* is 'normal', 'deep', 'female' or 'custom'
  If 'custom', takes *speed* and *shape* as extra parameters.
  These parameters can be set in the device window as well.

Camera

`self.robot.camera[0]` functions to Pyrobot specifications
(note that motion detection filters will not function when in dual-screen mode)

Functions exclusive to NaoCamera:

- disableAuto(): disables automatic comor correction (default is enabled)
- enableAuto(): enables automatic color correction (default is enabled)

Sonars

`self.robot.sonar[0].readData()` returns left and right sonar readings

Sonars drain the battery faster if enabled. Readings are greatly affected by surface differences and ambient noise, so may appear random at times. Use conservatively and with caution.

Other

Access http://marvin:9559 for the NaoQi API reference.
ALMotion can be accessed as `robot.motion`
ALMemory can be accessed as `robot.memory`
Device proxies can be accessed as *`device`*`[0].proxy`