Package 'Rduino'

January 20, 2025

Version 0.1

Date 2017-10-28

Title A Microcontroller Interface

Description Functions for connecting to and interfacing with an 'Arduino' or similar device. Functionality includes uploading of sketches, setting and reading digital and analog pins, and rudimentary servo control. This project is not affiliated with the 'Arduino' company, <https://www.arduino.cc/>.

Author Chris Suh, Peter Hoff

Maintainer Peter Hoff <peter.hoff@duke.edu>

RoxygenNote 6.0.1

License GPL-3

Depends serial

LazyData true

NeedsCompilation no

Repository CRAN

Date/Publication 2017-10-30 12:16:46 UTC

Contents

BoardControlIno *BoardControlIno*

Description

Board control file for the arduino and similar devices

getApin *Get analog pin*

Description

Get the value of an analog pin

Usage

```
getApin(pin)
```

Arguments

pin	the number of the pin to get (integer)

Value

the value of the pin.

Examples

```
## Not run:
rduinoConnect()
# set position of servo to position of potentiometer
off<-getDpin(4)
while (!off)
{
  angle<-getApin(5)
  angle<- 1.68 * angle + 575
  setServo(9,angle)
  off<-getDpin(4)
}
offServo()

rduinoClose()

## End(Not run)
```

getDpin *Get digital pin*

Description

Get the value of a digital pin

Usage

```
getDpin(pin)
```

Arguments

pin	the number of the pin to get (integer)

Value

the binary value of the pin.

Examples

```
## Not run:
rduinoConnect()
# LED remains on until button is pressed
setDpin(5,1)
isPressed<-getDpin(4)
while (!isPressed){ isPressed<-getDpin(4) }
setDpin(5,0)
rduinoClose()

## End(Not run)
```

offServo *Off servo*

Description

deactivate a servo

Usage

```
offServo()
```

onServo *Set servo*

Description

Activate a servo and set a value

Usage

```
onServo(pin, value)
```

Arguments

pin	the number of the pin connected to the servo
value	value to set for the servo

Examples

```
## Not run:
rduinoConnect()
# set position of servo to position of potentiometer
off<-getDpin(4)
while (!off)
{
  angle<-getApin(5)
  angle<- 1.68 * angle + 575
  setServo(9,angle)
  off<-getDpin(4)
}
offServo()

rduinoClose()

## End(Not run)
```

rduinoClose *Rduino disconnect*

Description

Disconnect a previously connected Arduino or similar device

Usage

```
rduinoClose()
```

rduinoConnect *Rduino connect*

Description

Make a serial connection to an Arduino or similar device

Usage

```
rduinoConnect(baud = 38400, mode = "n,8,1", upload = TRUE,
  arduino = NULL)
```

Arguments

baud	baud rate
mode	communication mode
upload	if TRUE, upload the ino file to the device
arduino	command used to run arduino as a shell command including the path This function does two things - uploads a .ino file to an Arduino, and acts as a wrapper for the `serialConnection` function of the serial package. The options for the communication mode are available via the helpfile for the `serialConnection` command.

Examples

```
## Not run:
rduinoConnect()
rduinoClose()

## End(Not run)
```

setApin *Set analog pin*

Description

Set a analog pin to on or off

Usage

```
setApin(pin, value)
```

Arguments

pin	the number of the pin to set (integer)
value	the value to which to set the pin (real)

Examples

```
## Not run:
rduinoConnect()
# gradually increase intensity of LED
for (i in seq(1,256,by=5))
{
  setApin(11,i)
  Sys.sleep(0.05)
}
rduinoClose()

## End(Not run)
```

---

setDpin *Set digital pin*

Description

Set a digital pin to on or off

Usage

```
setDpin(pin, value)
```

Arguments

pin	the number of the pin to set (integer)
value	the value to which to set the pin (binary)

Examples

```
## Not run:
rduinoConnect()
# flash LED rapidly
for (i in 0:9)
{
  setDpin(8,1)
  Sys.sleep(0.05)
  setDpin(8,0)
  Sys.sleep(0.05)
}
rduinoClose()
```

```
## End(Not run)
```

Index