o++o

OttO Class Methods

Include

```
#include <OttoMatrix.h>
```

Class instance

```
OttoMatrix Otto;
```

Constants

```
#define FORWARD    1
#define BACKWARD   -1
#define LEFT       1
#define RIGHT      -1
#define SMALL      5
#define MEDIUM     15
#define BIG        30
#define PIN_Buzzer  13
#define PIN_Trigger 8
#define PIN_Echo    9
#define PIN_NoiseSensor A6
```

Motion functions

void jump(float steps=1, int T = 2000);

Parameters: **steps**: Number of steps / **T**: Period

void walk(float steps=4, int T=1000, int dir = FORWARD);

Parameters: **steps**: Number of steps / **T** : Period / **dir**: direction: FORWARD / BACKWARD

void turn(float steps=4, int T=2000, int dir = LEFT);

Parameters: steps: Number of steps / T: Period / dir: direction: LEFT / RIGHT

void bend (int steps=1, int T=1400, int dir=LEFT);

Parameters: **steps**: Number of bends / **T**: Period of one bend / dir: RIGHT=Right bend LEFT=Left bend

void shakeLeg (int steps=1, int T = 2000, int dir=RIGHT);

Parameters: **steps**: Number of shakes / **T**: Period of one shake / **dir**: RIGHT=Right leg LEFT=Left leg

void updown(float steps=1, int T=1000, int h = 20);

Parameters: **steps**: Number of jumps / **T**: Period / **h**: Jump height: SMALL / MEDIUM / BIG (or a number in degrees 0 - 90)

void swing(float steps=1, int T=1000, int h=20);

void tiptoeSwing(float steps=1, int T=900, int h=20);

void jitter(float steps=1, int T=500, int h=20);

void ascendingTurn(float steps=1, int T=900, int h=20);

void moonwalker(float steps=1, int T=900, int h=20, int dir=LEFT);

void crusaito(float steps=1, int T=900, int h=20, int dir=FORWARD);

Parameters: **steps**: Number of steps / **T**: Period / **h**: height (Values between 20 - 50) / **dir**: Direction: LEFT / RIGHT

void flapping(float steps=1, int T=1000, int h=20, int dir=FORWARD);

Parameters: **steps**: Number of steps / **T**: Period / **h**: height (Values between 10 - 30) / **dir**: direction: FORWARD, BACKWARD

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OttO Class Methods

Otto at rest position

```
void home();
bool getRestState();
void setRestState(bool state);
```

Sensor functions

```
float getDistance(); //UltraSonic sensor
int getNoise();      //Noise Sensor
```

Mouth & Animations

```
void putMouth(unsigned long int mouth, bool predefined = true);
```

mouth = zero,one,two,three,four,five,six,seven,eight,nine,smile,happyOpen,happyClosed, heart,bigSurprise,smallSurprise,tongueOut,vamp1,vamp2,lineMouth,confused, diagonal,sad,sadOpen,sadClosed,okMouth,xMouth,interrogation,thunder,culito,angry

```
void putAnimationMouth(unsigned long int anim, int index);
```

anim = littleUuh,dreamMouth,adivinawi,wave,otto

```
void clearMouth();
```

Sounds

```
void _tone (float noteFrequency, long noteDuration, int silentDuration);
void bendTones (float initFrequency, float finalFrequency, float prop, long noteDuration, int silentDuration);
void sing(int songName)
```

songName = S_connection, S_disconnection, S_buttonPushed, S_mode1, S_mode2, S_mode3, S_surprise, S_OhOoh, S_OhOoh2, S_cuddly, S_sleeping, S_happy, S_superHappy, S_happy_short, S_sad, S_confused, S_fart1, S_fart2, S_fart3

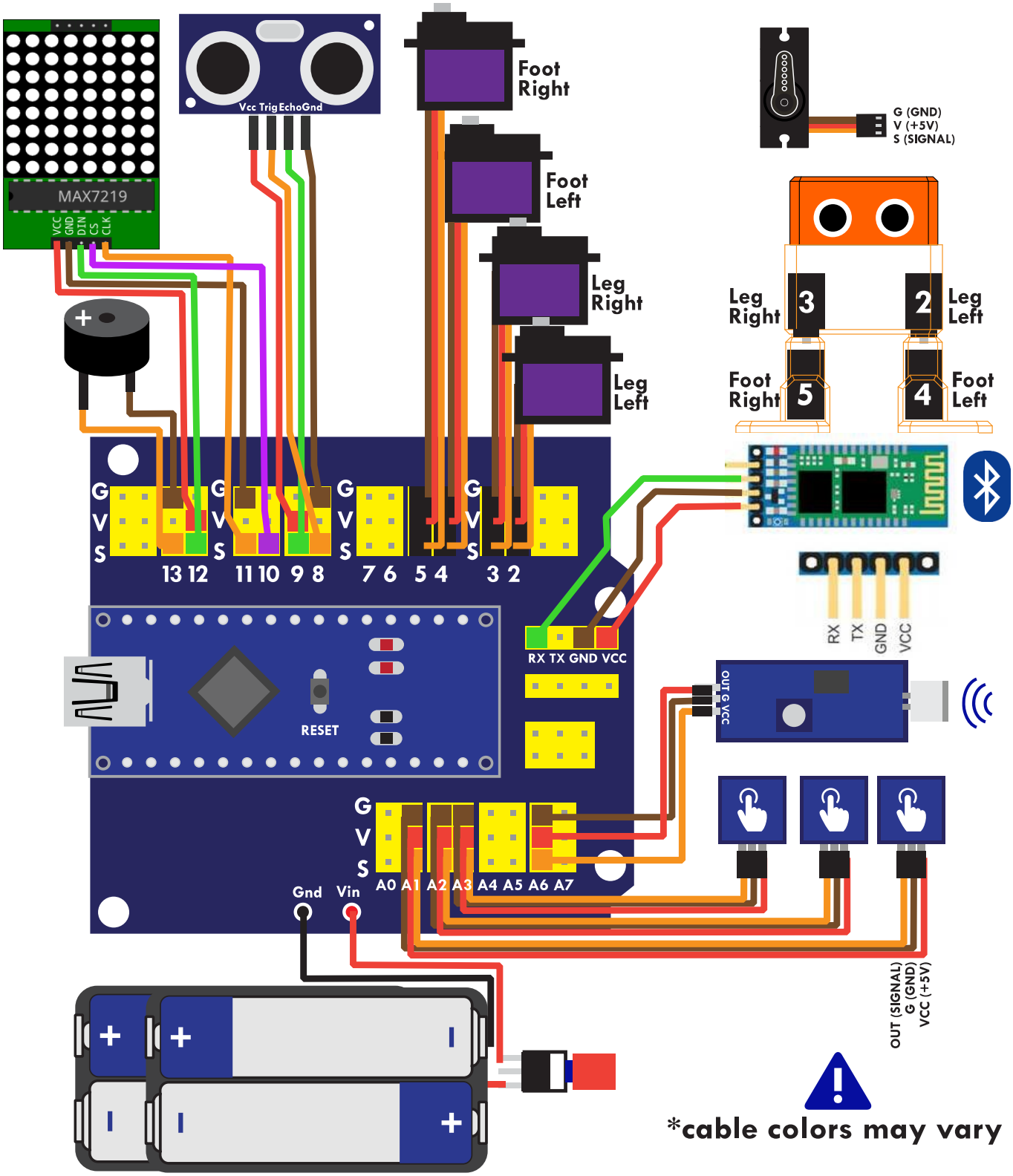
Gesture

```
void playGesture(int gesture);
```

gesture = OttoHappy, OttoSuperHappy, OttoSad, OttoSleeping, OttoFart, OttoConfused, Otto-Love, OttoAngry, OttoFretful, OttoMagic, OttoWave, OttoVictory, OttoFail,

Battery functions

```
double getBatteryLevel();
double getBatteryVoltage();
```


ARDUINO
MAX7219
VCC GND DIN CS CLK
Vcc Trig Echo Gnd
Foot Right
Foot Left
Leg Right
Leg Left
G (GND)
V (+5V)
S (SIGNAL)
Leg Right 3
2 Leg Left
Foot Right 5
4 Foot Left
G V S
13 12 11 10 9 8 7 6 5 4 3 2
RX TX GND VCC
RESET
OUT G VCC
A0 A1 A2 A3 A4 A5 A6 A7
Gnd Vin
OUT (SIGNAL)
G (GND)
VCC (+5V)
*cable colors may vary