

Unit 9: Control Systems (Robotics)

Lesson 2: Programming with Sensors

U09_L02_03-H2-Sparki_Command_List

Standard Commands

```
#include  
#include <Sparki.h>  
void setup() {}  
void loop() {}
```

Variable Declaration Commands

```
float          for decimal values  
int           for integer values
```

Time Delay Command

```
delay(time in milliseconds)
```

Conditional Statement Commands

```
if(conditional statement) {}  
else {}
```

Loop Commands

```
for(initialization; condition; increment)  
{ }  
while(conditional statement) { }
```

Conditional Operators

- && - and
- || - or
- == - equal to
- != - not equal to
- > - greater than
- < - less than
- >= - greater than or equal to
- <= - less than or equal to

Serial Output Monitor Commands

```
Serial.begin(9600)  
Serial.print()  
Serial.println()
```

Accelerometer Commands

```
sparki.accelX()  
sparki.accelY()  
sparki.accelZ()
```

Buzzer Command

```
sparki.bEEP()  
sparki.bEEP(frequency)  
sparki.bEEP(frequency, duration)
```

IR Sensor Commands

```
sparki.lineCenter()  
sparki.lineLeft()  
sparki.lineRight()  
sparki.edgeLeft()  
sparki.edgeRight()
```

Gripper Commands

```
sparki.gripperClose()  
sparki.gripperOpen()  
sparki.gripperStop()
```

Light Sensor Commands

```
sparki.lightCenter()  
sparki.lightLeft()  
sparki.lightRight()
```

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Magnetometer Commands

```
sparki.magX()
```

```
sparki.magY()
```

```
sparki.magZ()
```

Wheel Commands

```
sparki.moveBackward()
```

```
sparki.moveBackward(cm)
```

```
sparki.moveForward()
```

```
sparki.moveForward(cm)
```

```
sparki.moveLeft()
```

```
sparki.moveLeft(degrees)
```

```
sparki.moveRight()
```

```
sparki.moveRight(degrees)
```

```
sparki.moveStop()
```

Ultrasonic Sensor Command

```
sparki.ping()
```

RGB LED Command

```
sparki.RGB(red,green,blue) , where  
red, green, blue are percentages between  
0 and 100.
```

```
sparki.RGB(predefined color  
command)
```

Servo Motor (Sparki Head) Command

```
sparki.servo(angle in degrees)
```

Terms to Define

- closed loop control
- comment
- code
- feedback
- flowchart
- loop
- microcontroller
- millisecond
- open loop control
- program
- pseudocode
- robot
- variable