Arduino Signal Filtering Library

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Chapter 1

Class Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Filter 7
firFilter 9
iirFilter 11

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Filter 7
firFilter 9
iirFilter 11

Chapter 3

File Index

3.1 File List

Here is a list of all files with brief descriptions:

Filter.cpp 15
Filter.h 16
firFilter.cpp 16
firFilter.h 17
iirFilter.cpp 18
iirFilter.h 18

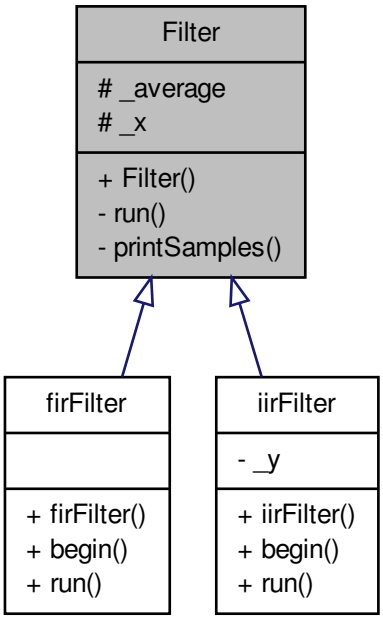
Chapter 4

Class Documentation

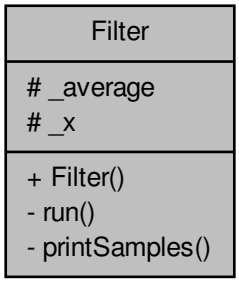
4.1 Filter Class Reference

`#include <Filter.h>`

Inheritance diagram for Filter:



Collaboration diagram for Filter:



Public Member Functions

- Filter ()

  Constructor.

Protected Attributes

- int _average
- int _x [3]

Private Member Functions

- virtual int run (int data)=0
- void printSamples ()

  printSamples: Print out some samples (for debugging)

4.1.1 Constructor & Destructor Documentation

4.1.1.1 Filter::Filter ( )

Constructor.

SignalFilter - Library to Filter Sensor Data using digital filters Available filters: Chebyshev & Bessel low pass filter (1st & 2nd order)

References _x.

4.1.2 Member Function Documentation

4.1.2.1 void Filter::printSamples ( ) [private]

printSamples: Print out some samples (for debugging)

References _x.

4.1.2.2 virtual int Filter::run (int *data*) [private], [pure virtual]

Implemented in firFilter, and iirFilter.

4.1.3 Member Data Documentation

4.1.3.1 int Filter::_average [protected]

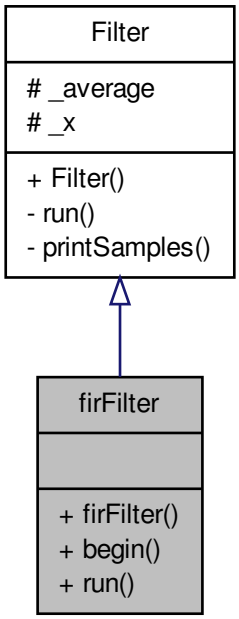
4.1.3.2 int Filter::_x[3] [protected]

Referenced by Filter(), printSamples(), firFilter::run(), and iirFilter::run().

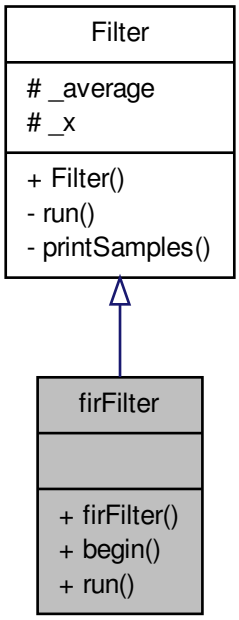
4.2 firFilter Class Reference

`#include <firFilter.h>`

Inheritance diagram for firFilter:



Collaboration diagram for firFilter:



Public Member Functions

- firFilter ()

  Constructor.
- void begin ()

  Begin function: set default filter options.
- int run (int data)

Additional Inherited Members

4.2.1 Constructor & Destructor Documentation

4.2.1.1 firFilter::firFilter ( )

Constructor.

4.2.2 Member Function Documentation

4.2.2.1 void firFilter::begin ( )

Begin function: set default filter options.

4.2.2.2 int firFilter::run (int *data*) [virtual]

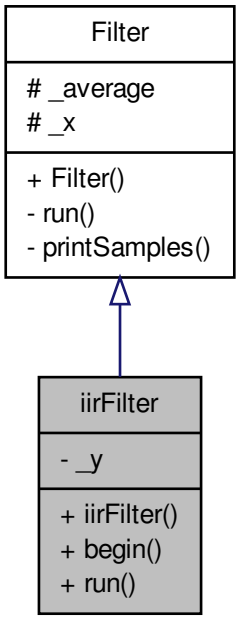
Implements Filter.

References Filter::_x.

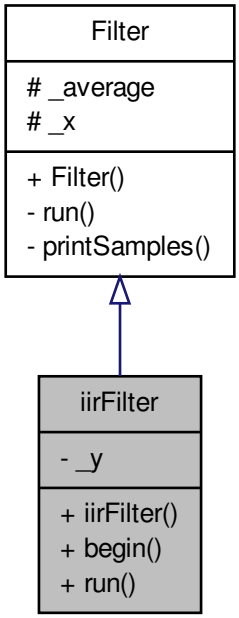
4.3 iirFilter Class Reference

`#include <iirFilter.h>`

Inheritance diagram for iirFilter:



Collaboration diagram for iirFilter:



Public Member Functions

- iirFilter ()

  Constructor.
- void begin ()

  Begin function: set default filter options.
- int run (int data)

Private Attributes

- int _y [3]

Additional Inherited Members

4.3.1 Constructor & Destructor Documentation

4.3.1.1 iirFilter::iirFilter ( )

Constructor.

References _y.

4.3.2 Member Function Documentation

4.3.2.1 void iirFilter::begin ( )

Begin function: set default filter options.

4.3.2.2 int iirFilter::run (int *data*) [virtual]

Implements Filter.

References Filter::_x.

4.3.3 Member Data Documentation

4.3.3.1 int iirFilter::_y[3] [private]

Referenced by iirFilter().

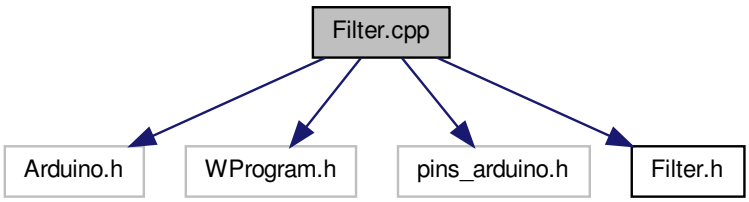
Chapter 5

File Documentation

5.1 Filter.cpp File Reference

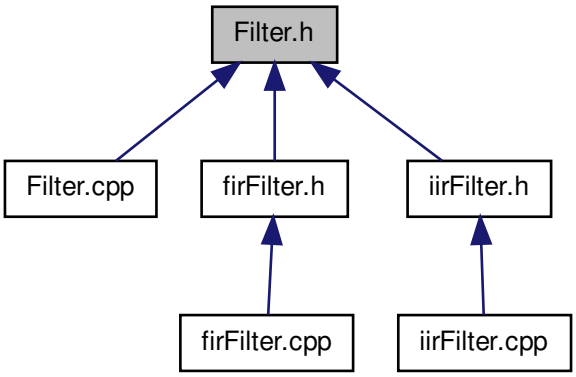
```
#include <Arduino.h>
#include "WProgram.h"
#include <pins_arduino.h>
#include <Filter.h>
```

Include dependency graph for Filter.cpp:



5.2 Filter.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- class Filter

Macros

- #define __cxa_pure_virtual()

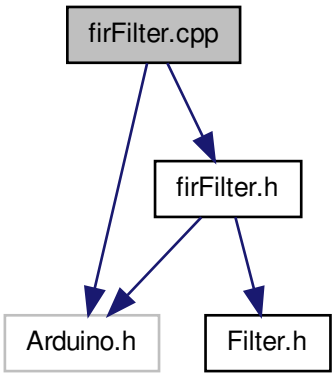
5.2.1 Macro Definition Documentation

5.2.1.1 #define __cxa_pure_virtual( )

5.3 firFilter.cpp File Reference

```
#include <Arduino.h>
#include <firFilter.h>
```

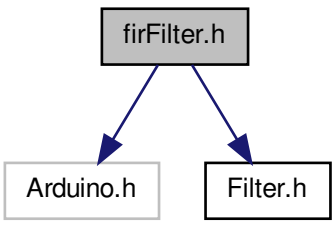
Include dependency graph for firFilter.cpp:



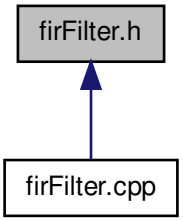
5.4 firFilter.h File Reference

```
#include <Arduino.h>
#include <Filter.h>
```

Include dependency graph for firFilter.h:



This graph shows which files directly or indirectly include this file:



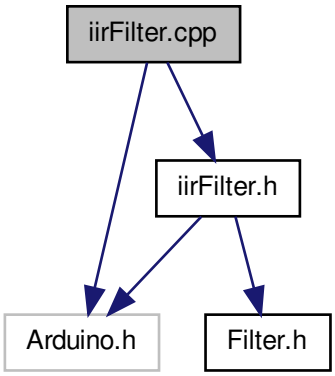
Classes

- class firFilter

5.5 iirFilter.cpp File Reference

```
#include <Arduino.h>
#include <iirFilter.h>
```

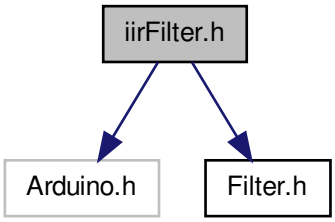
Include dependency graph for iirFilter.cpp:



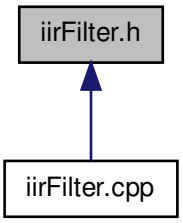
5.6 iirFilter.h File Reference

```
#include <Arduino.h>
#include <Filter.h>
```

Include dependency graph for iirFilter.h:



This graph shows which files directly or indirectly include this file:



Classes

- class iirFilter

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