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FIR1 is an M-file implementation of program 5.2 in the IEEE %
    .Programs for Digital Signal Processing tape %
                                Author(s): L. Shure %
                                L. Shure, 4-5-90, revised %
                                T. Krauss, 3-5-96, revised %
                                .Copyright 1988-2005 The MathWorks, Inc %
                                $ Revision: 1.15.4.5 $ $Date: 2007/12/14 15:04:36$ %
                                : (Reference(s) %
Programs for Digital Signal Processing", IEEE Press" [1] %
    .John Wiley & Sons, 1979, pg. 5.2-1 %

                                ;(('error(nargchk(2,6,nargin,'struct
                                ('if nargin > 2 && strcmpi(varargin{end}, 'h
                                    ;[] = (varargin(end
                                        ;hilbert = true
                                    else
                                        ;hilbert = false
                                    end

                                Parse optional input arguments %
                                ;({:}Ftype,Wind,SCALING,msg) = parseoptargs(Wn,varargin]
                                if ~isempty(msg), error(generatemsgid('SigErr'),msg); end

                                Compute the frequency vector %
                                ;(nbands,ff,Ftype,msg) = desiredfreq(Wn,Ftype]
                                if ~isempty(msg), error(generatemsgid('SigErr'),msg); end

                                Compute the magnitude vector %
                                ;(aa,First_Band] = desiredmag(Ftype,nbands]

                                Check for appropriate filter order, increase when necessary %
                                ;(N,msg1,msg2] = firchk(N,ff(end),aa,hilbert]
                                    ;(error(msg1
                                        ;(warning(msg2

                                (Work with filter length (= order + 1 %
                                    ;L = N + 1

                                Check for valid window, or assign default if empty %
                                    ;(Wind,msg] = chkwindow(Wind,L]
                                if ~isempty(msg), error(generatemsgid('SigErr'),msg); end

                                Compute unwindowed impulse response %
                                    if hilbert
                                        ;('hh = firls(L-1,ff,aa,'h
                                            else
                                                ;(hh = firls(L-1,ff,aa
                                            end

                                Window impulse response to get the filter %

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