

**Ex:**

Write a Matlab® function called `fiddle` that accepts as an argument a vertical, one-column array called `wave` and does the following:

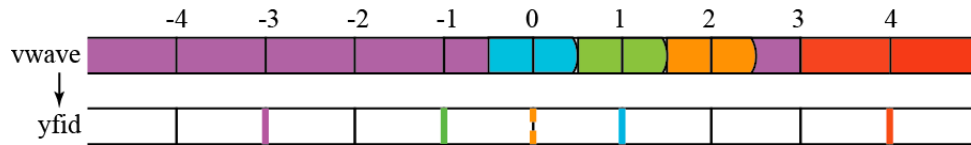
- i) Replaces each value greater than 3 with the value 4.
- ii) Replaces values that round off to 0 with 1.
- iii) Replaces values that round off to 1 with -1.
- iv) Replaces every second value that rounds off to 2 with 0.
- v) Otherwise sets the value to -3.
- vi) Returns the resulting array in a horizontal, one-row variable called `yfid`.

For example, `fiddle([2.1; 0.1; 2.4; 3.1; 1.4; 0.5; 2.1; 3.2; 1.9])` produces the following returned array:

`ans =`

-3 1 0 4 -1 -1 -3 4 0

SOL'N:



```
function yfid = fiddle(vwave)
% fiddle.m Modifies a waveform
% Replaces value > 3 with 4
% Replaces value that rounds to 0 with 1
% Replaces value that rounds to 1 with -1
% Replaces every second value that rounds to 2 with 0
% Otherwise, sets the value to -3
%
% yfid = fiddle(vwave)

% The compact approach (but hard to decipher):
yfid = vwave;
yfid(yfid > 3) = 4;
yfid = round(yfid);
yfid(yfid <= -1) = -3; % Other things get set to -1 so do this now.
yfid(yfid == 3) = -3; % Finish all things mapped to -3.
yfid(yfid == 1) = -1; % Do this before step that sets entries to 1.
yfid(yfid == 0) = 1;
twos = find(yfid == 2);
yfid(twos(2:2:end)) = 0; % Set every other 2 to 0
yfid(twos(1:2:end)) = -3; % Set other every other 2 to -3

yfid = yfid';

% The more conventional approach:
yfid = vwave;
second_2 = 0; % Flag that toggles for every other 2 found.
for index = 1:length(vwave)
    if vwave(index) > 3
        yfid(index) = 4;
    else
        switch round(yfid(index))
            case 0
                yfid(index) = 1;
            case 1
                yfid(index) = -1;
            case 2
                if second_2 == 1 % Check flag that changes every other 2.
                    yfid(index) = 0;
                    second_2 = 0;
                else
                    yfid(index) = -3;
                    second_2 = 1;
                end
            otherwise
                yfid(index) = -3;
        end
    end
end
yfid = yfid';
end
```