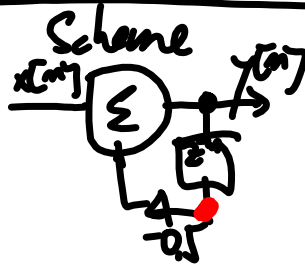


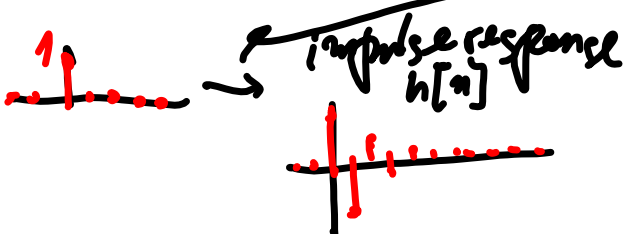
Digital filters - a summary.

→ freq. char?
→ stability?

Dif. equation
 $y[n] = x[n] - 0.5y[n-1]$



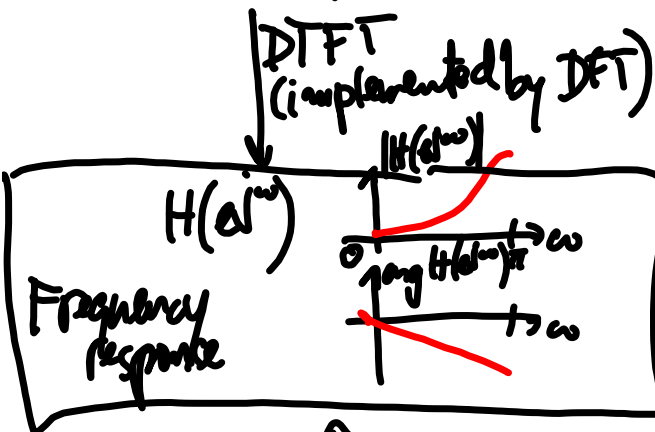
```
Code
float iir (float x[n]) {
    static float ym1;
    float ym;
    ym = x[n] - 0.5 * ym1;
    ym1 = ym;
    return ym;
}
```



z-transform

$$H(z) = \frac{B(z)}{A(z)}$$

transfer (system) function

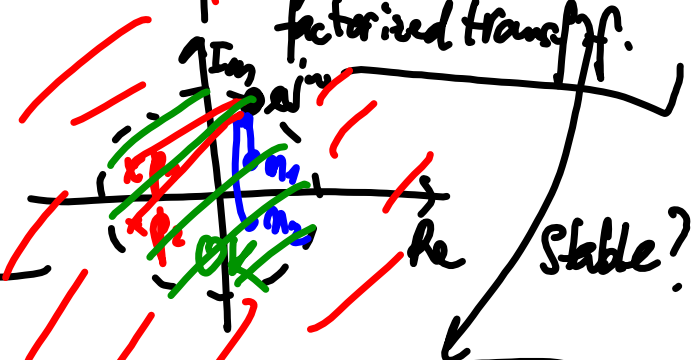


$z = e^{j\omega}$
 freq. mp. freq. z

factorization roots z plane

$$H(z) = b \frac{(z - m_1)(z - m_2) \dots (z - m_N)}{(z - p_1)(z - p_2) \dots (z - p_M)}$$

factorized transfer f.



doing by hand
 $|H|$
 ang.

CZSa

Stable?

$$|p_k| < 1$$