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Digital Signal Processing

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CONTENTS

***Abstract*—This manual provides a simple introduction to the digital filter.**

1 Difference Equation

1. Let

$$x(n) = \left\{ \underset{\uparrow}{1}, 2, 3, 4, 2, 1 \right\} \tag{0.1}$$

   Sketch $x(n)$.
2. Let

$$y(n) + \frac{1}{2}y(n-1) = x(n) + x(n-2),$$
$$y(n) = 0, n < 0 \tag{0.2}$$

   Sketch $y(n)$.

Solution: The following code yields Fig. 2.

```
wget https://github.com/gadepall/EE1310/raw/
    master/filter/codes/xnyn.py
```

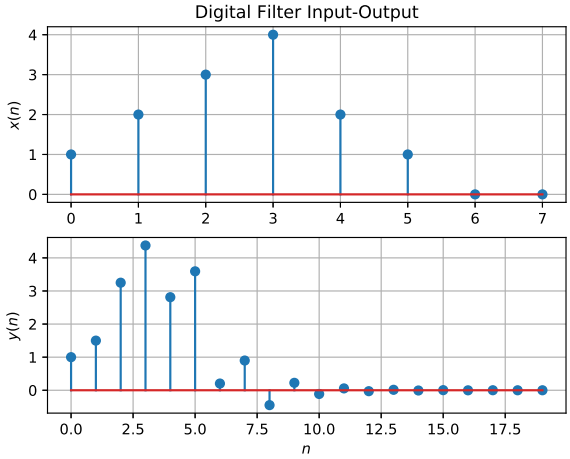

Fig. 2

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