Intro to Observability
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Quantifying Observability
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Observability Properties
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Controllers & Observers Design
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Observer-Based Control
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Example 1

- Consider a dynamical system defined by:

$$A = \begin{bmatrix} 1 & -1 & 0 \\ 1 & -1 & 0 \\ 0 & 0 & 0 \end{bmatrix}, B = \begin{bmatrix} 1 & 0 \\ 0 & 0 \\ 0 & 1 \end{bmatrix}, C = \begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

- Is this system controllable?

- Is this system observable?

- **Answers:** Yes, Yes!

- MATLAB commands: `ctrb, obsv`