

#### **Prof: Peter Stone**

#### Department of Computer Science The University of Texas at Austin

## **Good Morning, Colleagues**



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Are there any questions?





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- Check piazza for:
  - Doodle poll for new TA office hours
  - Opportunity to submit questions for coverage in discussion (perhaps at a slower pace than in class)



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- Pressure to participate
- Dr. Stone says um a lot



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- Applications



• 5-color theorem details



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- More formal versions of module proofs



#### **Eulerian and Hamiltonian Graphs**

1. Eulerian Path?



- 1. Eulerian Path?
- 2. Eulerian Circuit?
- 3. Hamiltonian Path?
- 4. Hamiltonian Circuit?



If every vertex in a connected (multi-)graph has even degree, then the graph is Eulerian. (Consider graphs with 2 or more vertices)

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- Induction on the number of vertices
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- Consider the longest simple path  $W = v_0, ..., v_r$  (there are a finite number of these paths, so the longest one certainly exists; if it's not unique pick any old one). Prove that W is an Eulerian circuit.

#### **Assignments for Thursday**

• Module C1

