

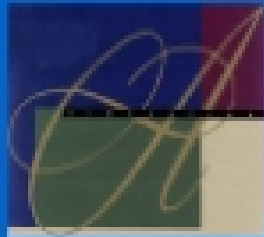
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Chapter 2 Fundamental Simulation Concepts



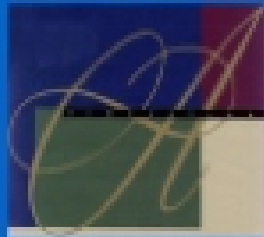
Dr. Jason Merrick

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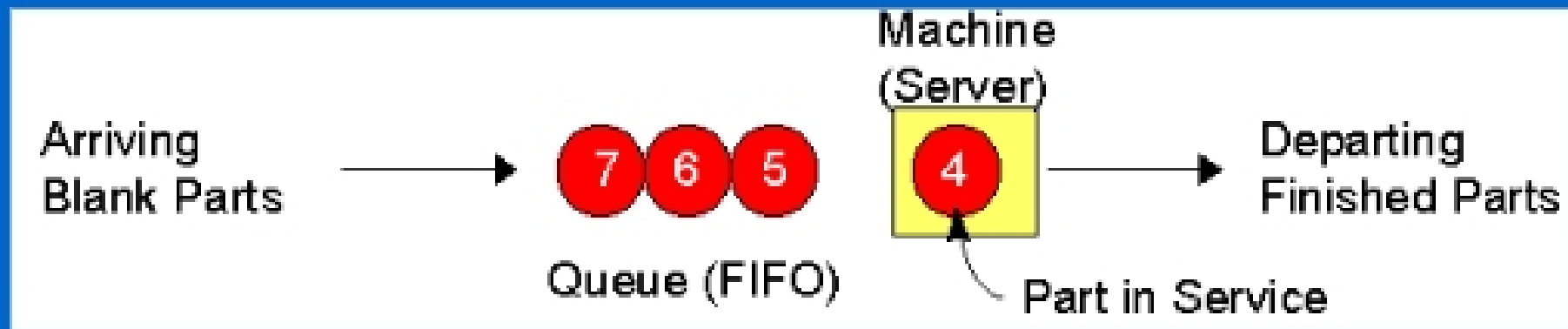


What We'll Do ...

- **Underlying ideas, methods, and issues in simulation**
- **Software-independent (setting up for Arena)**
- **Centered around an example of a simple processing system**
 - Decompose the problem
 - Terminology
 - Simulation by hand
 - Some basic statistical issues
 - Overview of a simulation study



The System: A Simple Processing System



- **General intent:**
 - Estimate expected production
 - Time in queue, queue length, proportion of time machine is busy
- **Telecommunications**
 - Be consistent (simulation doesn't know)
 - Be reasonable (interpretation, roundoff error)