

Fall 2024: CSCI 181RT

Real-Time Systems in the Real World

Lecture 7

Tuesday, September 17, 2024

Edmunds Hall 105

2:45 PM - 4:00 PM

Professor Jennifer DesCombes

Agenda

- Go Backs
- Discussion on Reading - Delayed to Thursday
- Documenting Processing Flow/Sequence
- Initial Discussions of Tasks
- Assignment
- Look Ahead
- Action Items

Go Backs

- General?
- Lab Discussion
- Action Item Status
 - AI240910-2: Find recommended book on computer architecture.
 - AI240912-1: Correct error in assignment for discussion topic - OBE (Overcome By Events) - Close?

Documenting Processing Flow/Sequence

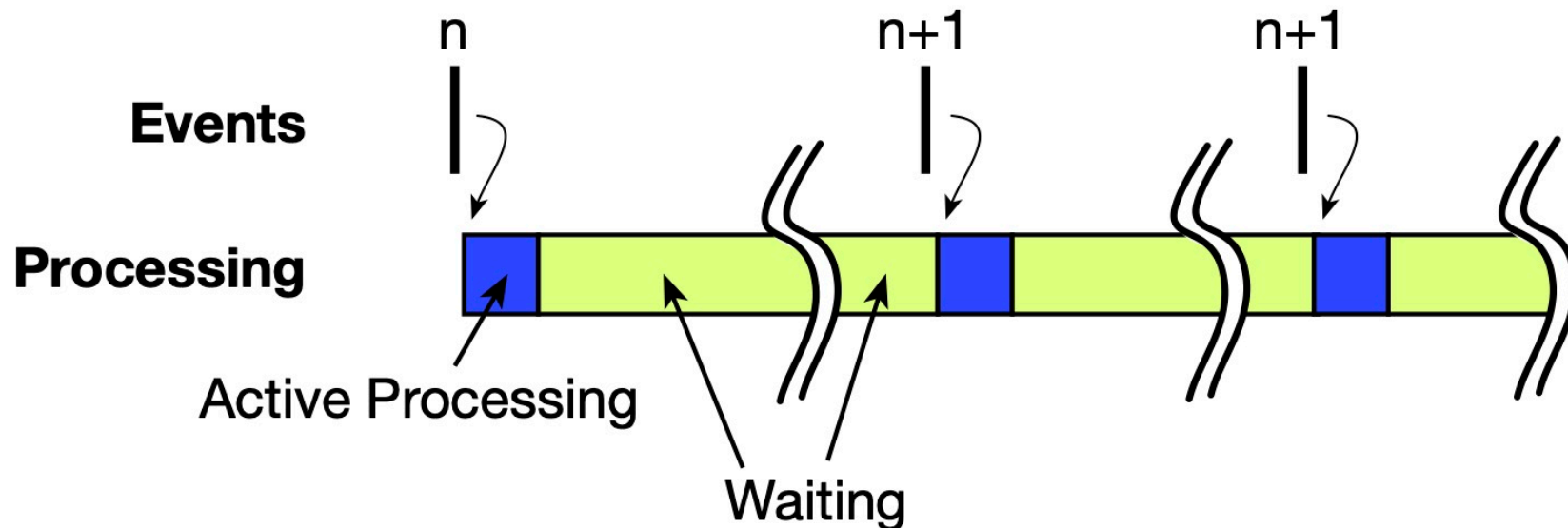
- How to Discuss Complex Processing Sequences
- How to Document Complex Processing Sequences
 - Simple Cases - Synchronous
 - Complex Cases - Asynchronous or Multi-synchronous

Discussing Complex Processing Sequences

- Why
 - Share With Other Designers
 - Present to Managers or Customers
- Clear Representation of What is Happening / Planned
 - Will Recieve Better Feedback
 - Will Headoff Questions
 - Allows Tailoring of Presented Data

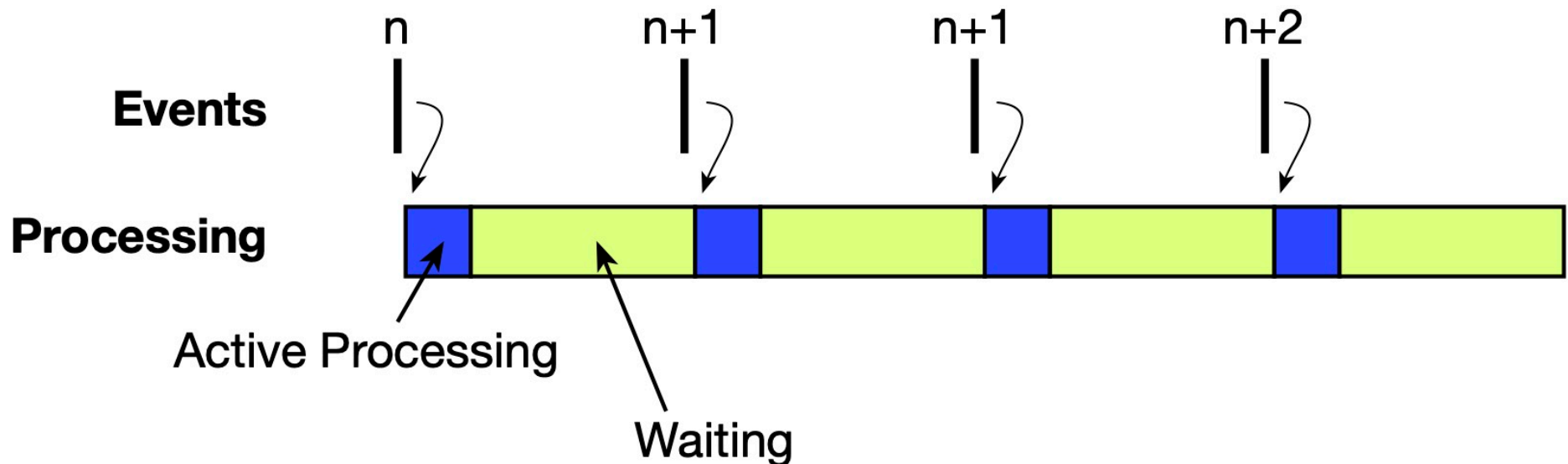
Documenting Complex Processing Sequences

- Graphically - 1 Image is Worth 100 Words (Inflation)
 - Event Marks
 - Processing Bars
- Graphically - 1 Image is Worth 100 Words
- Example - Asynchronous



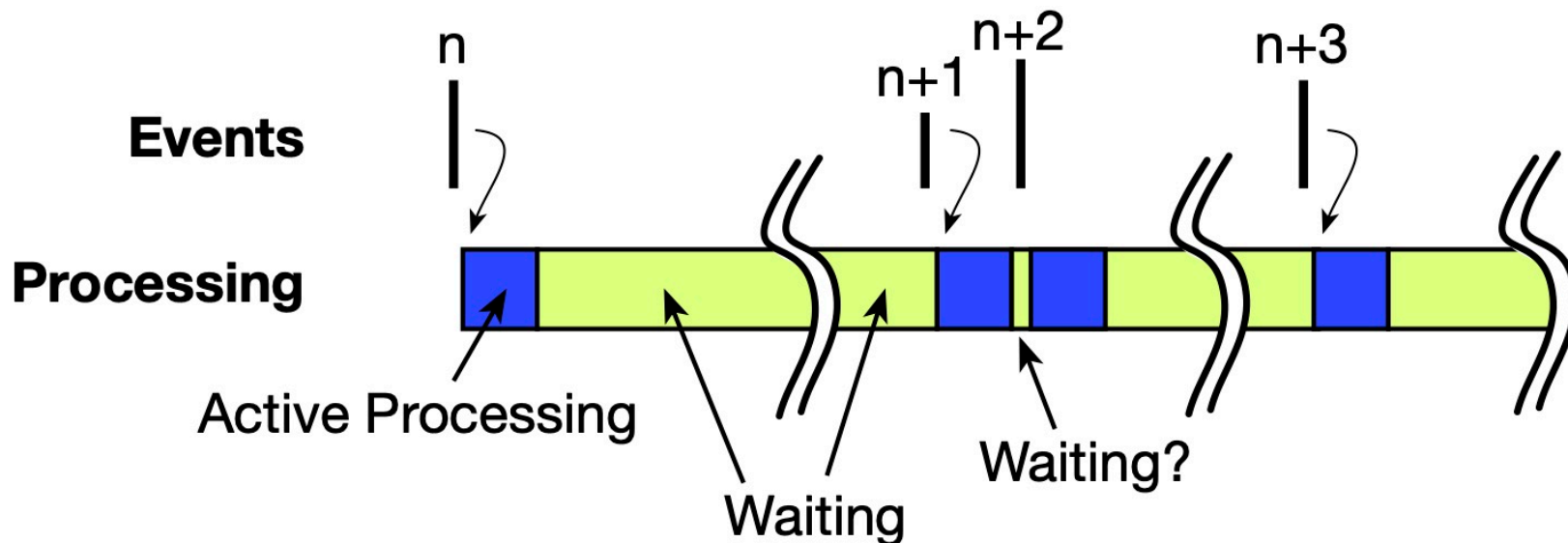
Processing - Simple Cases - Synchronous

- Repetition at a Fixed Rate
- Events and Processing are Locked to Each Other



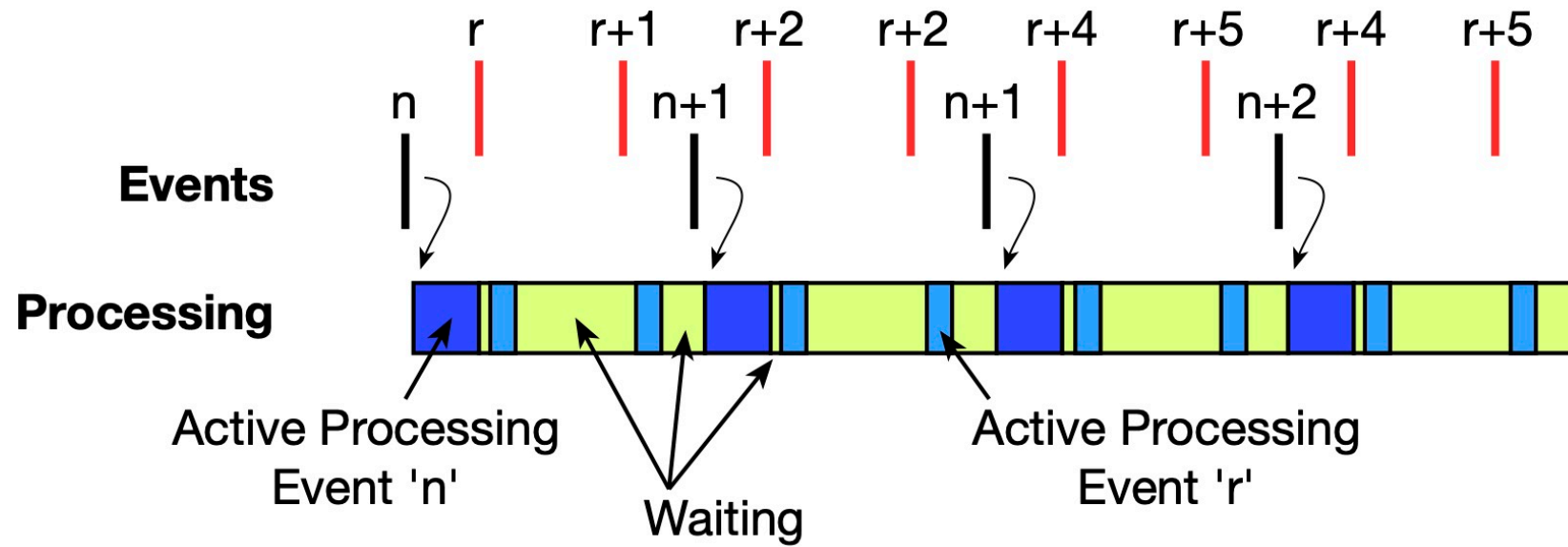
Processing - Complex Cases - Asynchronous

- Repetition at a Variable Rate
- Repetition of More Than One Event at Different Rates
- Events and Processing are Still Typically Locked to Each Other



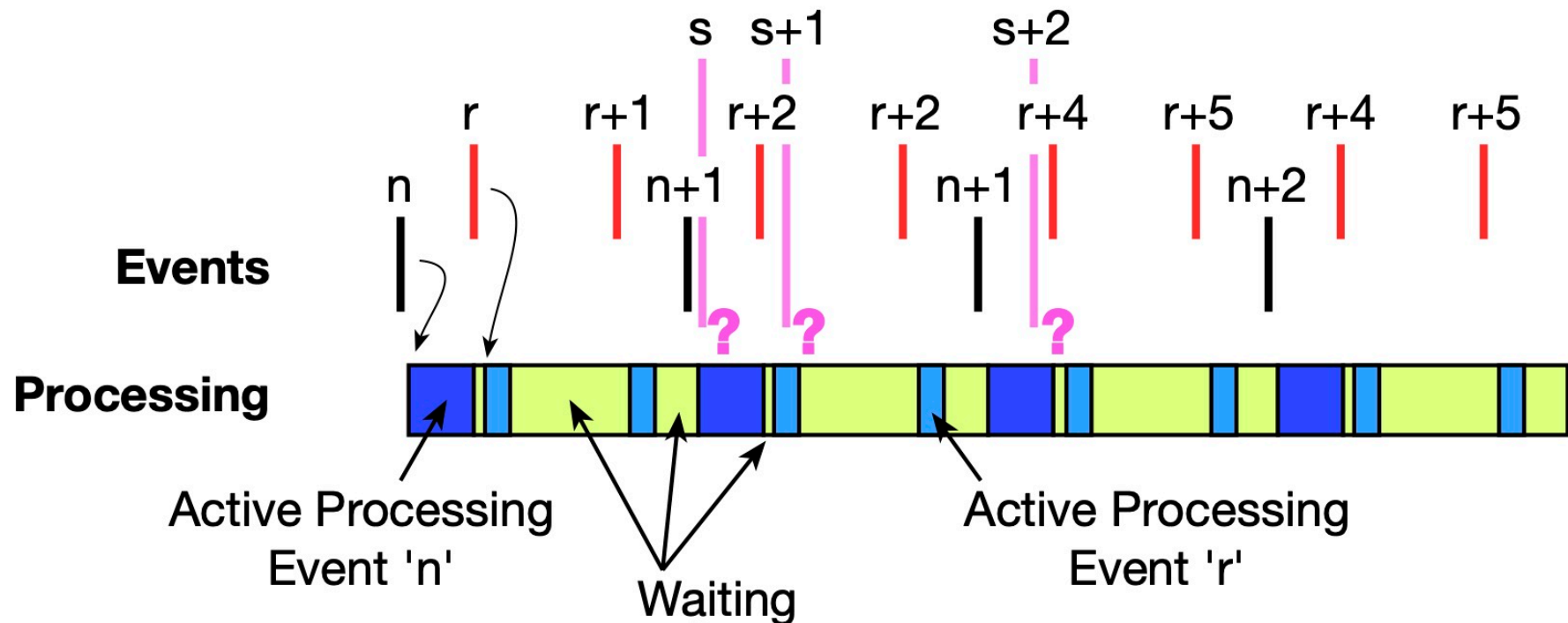
Processing - Complex Cases - Multi-synchronous

- Repetition at a Variable Rates
- Repetition of More Than One Group of Events at Different Rates
- Events and Processing May be Locked to Each Other
- Events and Processing May be Locked to Multiple Events



Processing - Complex Cases - Fully Mixed

- Everything at Once
- Issues?

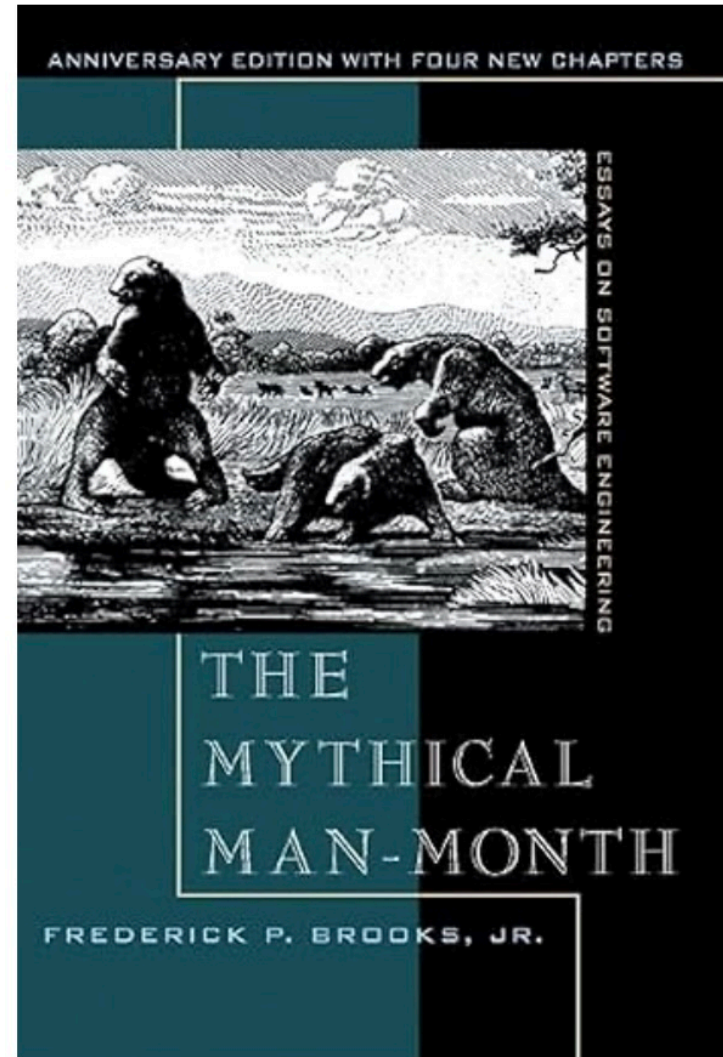


Initial Discussions of Tasks

- Why Create a Task
- What Defines a Task

Assignment - Readings

- The Mythical Man Month
 - All Introductions and Forwards
 - Chapter 1: The Tar Pit
- Send Me Discussion Topics by 10:00 on Thursday.



Assignment - Lab Preparation

- Google “pulse width modulation”
 - Spend 20 Minutes Researching this Topic
 - Advantages / Disadvantages
 - Ways to Implement Via Software on Evaluation Boards

Look Ahead

- Full Moon and Partial Eclipse
 - A Chill Day
 - Go With the Flow
- Review of Reading
- More Discussions of Simple Task Design
- Discussion of Lab 3

Action Items and Discussion

AI#:	Owner	Slide #	Document	Action