Fall 2024: CSCI 181RT
Real-Time Systems in the Real World

Lecture 3

Tuesday, September 3, 2024
Edmunds Hall 105
2:45 PM - 4:00 PM

Professor Jennifer DesCombes

Agenda

- Schedule Announcement

- Go Backs

- Discussion on Reading

- A Simple Set of Requirements

- A Simple Real-Time System Design

- Lab Preparation

- Assignment

- Look Ahead

- Action Items

Schedule Announcement

Due to a family memorial service on the East Coast, I cannot make the lecture on Tuesday, November 26th, 2024. This is the week of Thanksgiving (the 28th), and thus, there will be no class activity that week as the Wednesday lab and Thursday lecture are already canceled due to the Thanksgiving recess.

Go Backs

- General?

- Rule Change
  - Lecture starts promptly at 2:50

- Action Item Status
  - AI240829-1: Send out reading assignments via dedicated email with proper links and including the assignments from Lecture 1 - OK to Close?
  - AI24-0829-2: Send out class list with names and email addresses - OK to Close?

Discussion on Reading

- K & R

  - Reasonable Amount of Reading?

  - General Questions?

- Assignment: Please send me one discussion topic from either of the articles listed below for the assigned reading.

A Simple Set of Requirements - Elevator Music Controller

- On Button, Off Button, Volume + Button, Volume - Button
- Requirement
  - If the On Button is pushed, turn the audio on
  - If the Off Button is pushed, turn the audio off
  - If the Volume + Button is pushed, increase the audio level
  - If the Volume - Button is pushed, decrease the audio level
- Hardware Design is Already Completed, But Not Yet Fabricated
- Four Spare Buttons

A Simple Real-Time System Design - Elevator Music Controller

- Complexity?

- Timing Requirements

- Machine State Storage/Preservation

- Growth Potential

- Schedule

Assignment - Lab Preparation

- Online C Compilers - A Quick Survey
  - https://www.onlinegdb.com/online_c_compiler
  - https://www.jdoodle.com/c-online-compiler
  - https://www.scaler.com/topics/c/online-c-compiler/
  - Others?
- If you are just learning C:
  - Try some simple control logic and variable use
- If you are competent at C (self rated 5 or above):
  - Work with each of these tools to determine which ones are best as character input from a keyboard - no timeouts, etc.

Assignment - Readings

- Lecture Reading

    Google topic - software requirements analysis
      Spend about 10 minutes on this - just get an idea on the scope of products available.

    Software Requirements Analysis for Real-Time Process-Control Systems
    https://www-users.cse.umn.edu/~heimdahl/csci8801-fall06/readings/jaffe-tse.pdf

    K&R - Page 67 - 83
    NOTE: I still have two K&R Texts Available…

- Lab Reading - Ongoing, No New Assignments

Look Ahead

- Discuss Readings
- More Simple Real-time Systems
- Lab Discussion

Action Items and Discussion

AI#:	Owner	Slide #	Document	Action