Key Concepts from Last Time

- Difference equations are the DT equivalent of ODEs
- Cutoff frequency is defined the same in DT as CT — but only for the range of $0 \rightarrow -\pi$ rads/sample
- Step response is useful for characterizing lowpass filters and LTI control systems
- Filters of higher order (closer to perfect) generally have a longer delay
- DT filters are divided into two groups: FIR and IIR
- There are four common, practical IIR filters that can be designed with MATLAB
- Can trade passband or stopband ripple for lower filter order (cheaper)
- DT filters have many applications (e.g., audio, trend removal, noise removal)

Lecture Overview

Last Time

- DT Filters

This Time

- Begin sampling
- Exam 2 returned
Exam 2 Statistics

Possible : 50.0  
Mean : 26.8 (53.5%)  
Median : 26.5 (53.0%)  
Std. Dev.: 9.3 (18.6%)  
25th Prct: 19.5 (39.0%)  
75th Prct: 33.0 (66.0%)  
Min : 7.0 (14.0%)  
Max : 45.0 (90.0%)  
No. : 40

• You must notify me of any grading errors within one week of today
• Will post solutions by tomorrow afternoon

Exam 2 Distribution

Score Statistics

Possible : 100.0  
Mean : 57.0 (57.0%)  
Median : 56.8 (56.8%)  
Std. Dev.: 13.0 (13.0%)  
25th Prct: 47.0 (47.0%)  
75th Prct: 65.0 (65.0%)  
Min : 30.7 (30.7%)  
Max : 87.1 (87.1%)  
No. : 40

Score Distribution