Control systems and Computer Networks

Assignment Roadmap

Dr Alun Moon

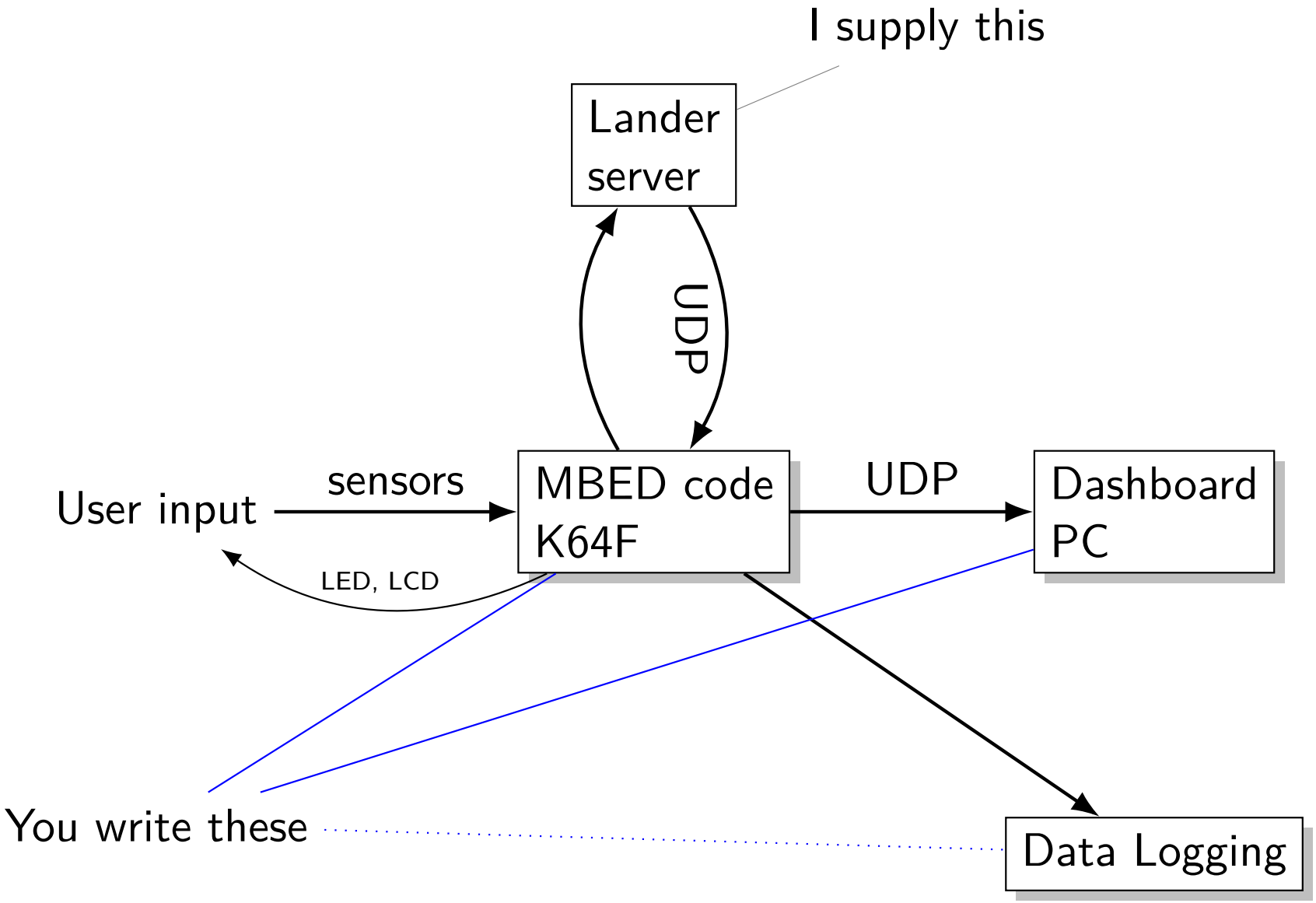
Lecture

Scenario

Lunar lander

Write components of a game system:

- game controller/human input – using the K64F and application shield
- User interface/dashboard – on PC
- Communications UDP based with server and Dashboard
- Data logging


I supply this
Lander
server
UDP
User input
sensors
MBED code
K64F
UDP
Dashboard
PC
LED, LCD
You write these
Data Logging

What you need to know

Handling Sensor input	readings from accelerometer and buttons	✓**Done**
Output	use LEDs, LCD, and Speaker to provide some information back to the user.	✓**Done**
Timing and Events	Threads, EventQueues, and callbacks, needed to manage periodic events and asynchronous events	✓**Done**
Communications	UDP packets over IP	**Todo**
Control and Feedback	using the computer to aid control (stability)	**Todo**
Data Logging	logging data on some server for later analysis	**Todo**

Timescale

Submission Monday 30 April 2018 via github/blackboard

Marking During the exam weeks Monday 30 April 2018 to Friday 18 May 2018, using the timetabled sessions from teaching weeks, **by demonstration of the working program**.

Marking

I'll be using a Criterion based approach:

1. List of criteria published with guidance on what counts as *fail*, *3rd*, *1st*, etc.
2. each marked on scale of 0-5
3. each has a scale, what contribution to the total mark it makes.

- Easy to mark – tick off criteria
- Instant feedback – you'll get a good idea as you do the demonstration
- Clear notes on what you have to do to get a pass, first, etc

I'll give you a guide on what you have to do to get a pass (40%) and additional extras to improve your mark up from there

my inspiration:

- Lunar lander game `https://en.wikipedia.org/wiki/Lunar_Lander_(video_game_genre)`
- Apollo Guidance Computer `https://en.wikipedia.org/wiki/Apollo_Guidance_Computer`