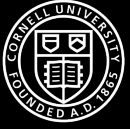# ECE 5725
Principles of Embedded Operating Systems
Lecture 9

Prof. Joseph F. Skovira
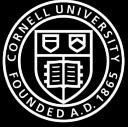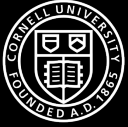
A few items

Lab1

Lab 2, Homework 2

Space!

vira, 2021

Lab 1

```
sudo SDL_VIDEODRIVER=fbcon SDL_FBDEV=/dev/fb1 mplayer -vo sdl -framedrop
/home/pi/bigbuckbunny320p.mp4


sudo mplayer -input file=/home/pi/video_fifo
/home/pi/bigbuckbunny320p.mp4


sudo SDL_VIDEODRIVER=fbcon SDL_FBDEV=/dev/fb1 mplayer -vo sdl -framedrop -
input file=/home/pi/video_fifo /home/pi/bigbuckbunny320p.mp4
```
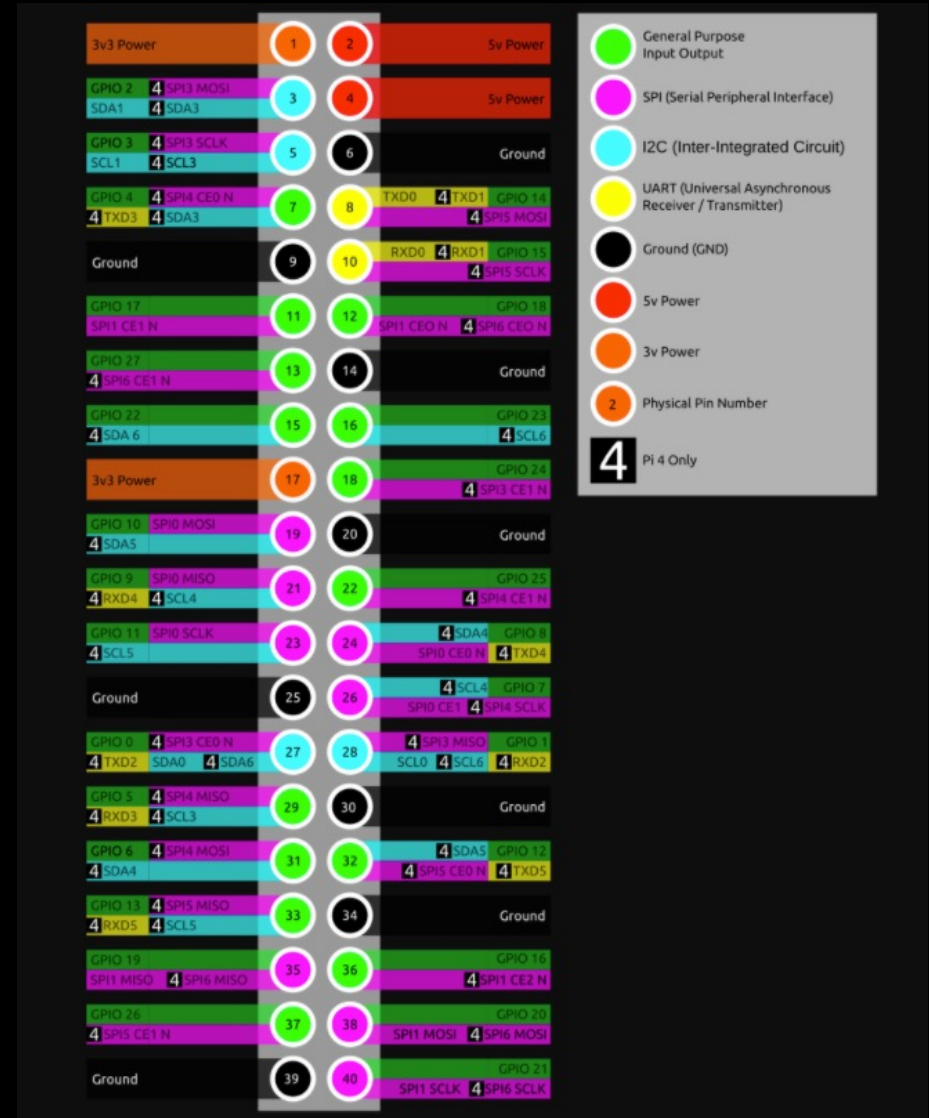
First Rule of Bugs

Scp hates me!
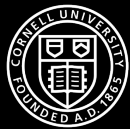
Pi Shutdown

ECE5725 Systems

Development Environment

GPIO

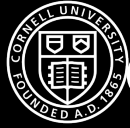| GPIO#	2nd func	pin#		pin#	2nd func	GPIO#
N/A	+3V3	1		2	+5V	N/A
GPIO2	SDA1 (I2C)	3		4	+5V	N/A
GPIO3	SCL1 (I2C)	5		6	GND	N/A
GPIO4	GCLK	7		8	TXD0 (UART)	GPIO14
N/A	GND	9		10	RXD0 (UART)	GPIO15
GPIO17	GEN0	11		12	GEN1	GPIO18
GPIO27	GEN2	13		14	GND	N/A
GPIO22	GEN3	15		16	GEN4	GPIO23
N/A	+3V3	17		18	GEN5	GPIO24
GPIO10	MOSI (SPI)	19		20	GND	N/A
GPIO9	MISO (SPI)	21		22	GEN6	GPIO25
GPIO11	SCLK (SPI)	23		24	CE0_N (SPI)	GPIO8
N/A	GND	25		26	CE1_N (SPI)	GPIO7
	(Models A and B stop here)					
EEPROM	ID_SD	27		28	ID_SC	EEPROM
GPIO5	N/A	29		30	GND	N/A
GPIO6	N/A	31		32	-	GPIO12
GPIO13	N/A	33		34	GND	N/A
GPIO19	N/A	35		36	N/A	GPIO16
GPIO26	N/A	37		38	Digital IN	GPIO20
N/A	GND	39		40	Digital OUT	GPIO21

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GPIO

Function	Pin Number	Pin Number	Function
3V3	1	2	5V
SPI3 MOSI/SDA3	3	4	5V
SPI3 SCLK/SCL3	5	6	GND
SPI4 CE0 N/SDA 3	7	8	TXD1/SPI5 MOSI
GND	9	10	RXD1/SPI5 SCLK
	11	12	SPI6 CEO N
SPI6 CE1 N	13	14	GND
SDA6	15	16	SCL6
3V3	17	18	SPI3 CE1 N
SDA5	19	20	GND
RXD4/SCL4	21	22	SPI4 CE1 N
SCL5	23	24	SDA4/TXD4
GND	25	26	SCL4/SPI4 SCLK
SPI3 CE0 N/TXD2/SDA6	27	28	SPI3 MISO/SCL6/RXD2
SPI4 MISO/RXD3/SCL3	29	30	GND
SPI4 MOSI/SDA4	31	32	SDA5/SPI5 CEO N/TXD5
SPI5 MISO/RXD5/SCL5	33	34	GND
SPI6 MISO	35	36	SPI1 CE2 N
SPI5 CE1 N	37	38	SPI6 MOSI
GND	39	40	SPI6 SCLK
I2C			Ground
UART			5V Power
SPI			3V3 Power

GPIO pin

Input or Output

Internal Pull-up or Pull-down

Alternate functions

3.3 Volts