3. Pin 12 can be an analog input, a comparator input, a change notification input (which can generate an interrupt when an input changes state), or a digital input or output and it is not 5V tolerant.

4. TRISC sets to 1.

5. 00C3

6.

SYSCLK: clocks the CPU at a maximum frequency of 80 MHz, adjustable down to 0 Hz

PBCLK: used by many peripherals, and its frequency is set to SYSCLK's frequency divided by 1, 2, 4, or 8

PORTA: Analog

PORTB to PORTG: Digital I/O ports

Timer 1-5: A counter counts the number of pulses of a signal

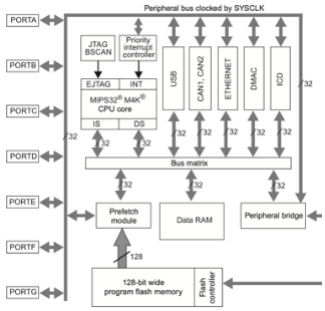
10-bit ADC: analog-to-digital converter (ADC) with 16 different pins connected to it

PWM OC 1-5: used to generate a single pulse of specified duration, or a continuous pulse train of specified duty cycle and frequency

Data RAM Program Flash Memory: Flash is generally more plentiful on PIC32's, nonvolatile (meaning that its contents are preserved when powered off, unlike RAM), but slower to read and write than RAM

Prefetch Cache Mode: it stores recently executed program instructions, which are likely to be executed again soon (as in a program loop), and, in linear code with no branches, it can even run ahead of the current instruction and predictively prefetch future instructions into the cache

7.



8. largest voltage difference = 3.3V/1024

9. 16 bytes

10. the 128-bit wide data path between the prefetch module and flash memory allows the prefetch module to run ahead of execution despite the slow flash load times

11. An output pin can also be configured as open drain. In this configuration, the pin is connected by an external pull-up resistor to a voltage of up to 5.5 V. This allows the pin's output transistor to either sink current (to pull the voltage down to 0 V) or turn off (allowing the voltage to be pulled up as high as 5.5 V), increasing the range of output voltages the pin can produce.

12.

Program Flash = 0x1F800000 - 0x1D000000 = 41943040 = 42MB

RAM = 0x1D000000 - 0x00000000 = 486539264 = 487 MB

13.

a. bit 13-12 to '01'

b. enabled: bit 23, postscale: bit 20-16 to '10100'

c. bit 2-0 to '001'

14. Since one should draw no more than 200-300 mA to the board, R = V/I = 5V/200mA = 25 ohm

15. Around 3.3V would be ideal even though the board has a 5V regulator and can do up to 9V (regulator would heat up).

16.

LED 1: pin 58

LED 2: pin 59