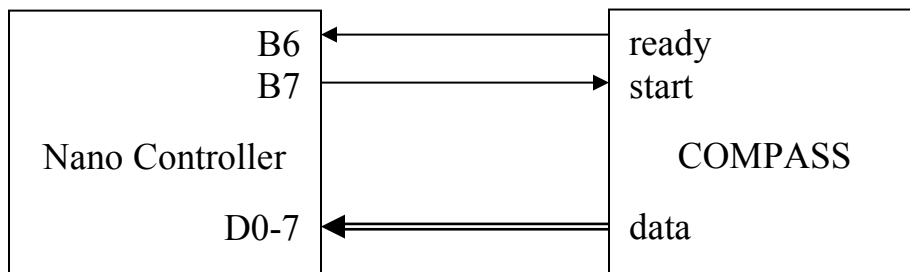Digital and Embedded Systems
Professor Thomas Bräunl

Tutorial 7 – Application Programming in C
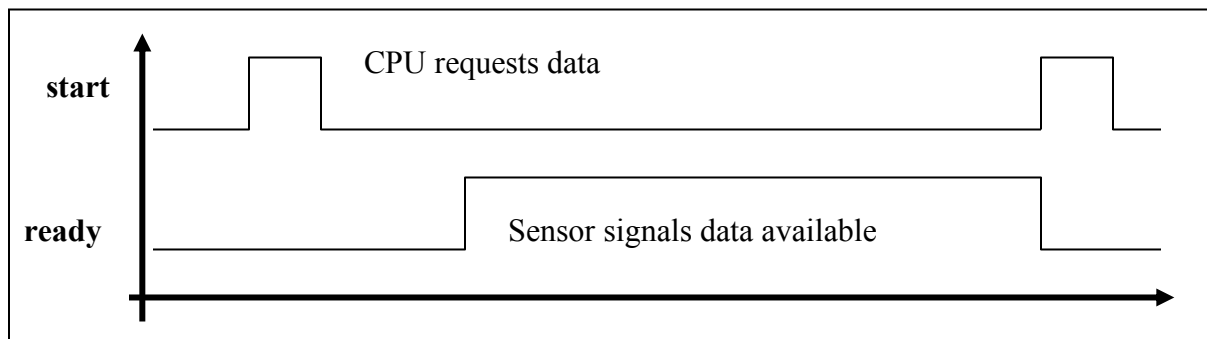
Sensor Connection
An external digital compass has been connected to the Nano controller in the following way:

- Port B, bit 7 (output) is connected to the compass Start line
- Port B, bit 6 (input) is connected to the compass Ready line
- The compass' 8-bit data output has been connected to port D

TIMING DIAGRAM
The CPU can request a data value from the compass sensor by raising and subsequently lowering the **Start** signal. The compass will indicate that a valid sensor value is available at its output by raising the **Ready** signal.

Write a **C subroutine** to do a single data request/ wait / read cycle. Assume that "start" and "ready" are active high.