

1. Describe two differences between I2C master and slave devices?
 - Master devices initiate communication with slave devices.
 - Slave devices can respond to a master device when requested, but can't start a new transaction on their own.
2. What are the two connections in an I2C bus? Describe their purpose.
 - SDA(Serial Data) – The slave device uses the SCL clock signal from the master device to receive and transmit data.
 - SCL(Serial Clock) – Master device produces clock transitions on this line.
3. What is the difference between open-drain and push-pull outputs?
 - Push-pull outputs have drive transistors that allow the device to push the output line "high" by connecting to the supply rail of the device, as well as pulling it "low" by connecting to ground. It can source or sink current depending on the voltage of the external system.
 - Open-drain outputs have a single transistor and can only pull the output to a low state. Open-drain systems require an external influence such as a pull-up resistor such as a pull-up resistor to return the line to a high state when no device is pulling it low.
4. What is the purpose of the I2C restart condition?
 - Prevents the bus from being stolen from other devices during a chained transaction when a stop condition has been initiated.
5. What peripheral register would you use to set the read/write direction of the next I2C transaction?
 - The RD_WRN bit inside of the I2C_CR2 register.
6. The 10-bit SADD bit-field holds the slave device address. Since standard I2C addresses only use 7 bits, to which bits in the bit-field would you write the shorter address?
 - Bits [7:1]
7. Name one thing you found confusing or unclear in the lab.
 - It was very well written, I just find the topic or the restart condition and stealing a bus a little confusing.