CSE 537S

Homework #1: Wireless Communication Protocol.

Develop a simple wireless communication protocol intended to support communication among a set of devices that reside in a single room. Each device is equipped with a radio transmitter powerful enough to cover just the room and is using a single dedicated transmission channel. Devices may be brought in or taken out at arbitrary points in time and they may be turned on and off while still in the room. Otherwise, the configuration remains stable for relatively long periods of time. The communication load is relatively light, but the number of devices may grow and shrink over time. Because the time to market is very short, the protocol must be simple to implement. Using a TDMA protocol is recommended, but you are expected to propose a custom solution tailored to the specifics of this problem and not to simply summarize an existing communication standard.

Instructions:

1. Provide a simple and elegant description of your proposed solution. Use graphics to explain it, if appropriate.
2. State all the assumptions you are making and their rationale.
3. Make sure to cover all aspects of the protocol, e.g., initialization, discovery, connection, communication, disconnection.