

## Software Roadmap

1. Base Station
  - a. Power provided by computer through USB – wait to be turned on.
  - b. Initialization between computer-side program and base station for USB communication and power.
  - c. Managing the PAN for the classroom which will be expounded on in the networking protocol document.
  - d. The LCD interface will be available through a library of functions written to provide text output to the
2. Radio Node
  - a. After power on, the node looks for networks to join and asks the user which network to join.
  - b. After network association the node waits for a question to be pushed from the base station.
  - c. If a question is asked, the user then has the options presented and the node returns the users response to the base station.
3. Computer Base Station Software
  - a. Communicate to the base station through USB
  - b. Message Types (Over USB)
    - i. From Base Station
      1. User mapping messages containing addressing info
      2. Answer messages
    - ii. To Base Station
      1. Question messages
      2. Valid/Invalid user messages
      3. Network setup info
  - c. Functionality
    - i. Network Information
      1. Registers users
      2. Network Name
      3. Max Users
      4. Access List
    - ii. User Data
      1. Questions and Answers
      2. Quiz Scores
      3. Attendance Information / Timestamps (& Date)
  - d. Interface
    - i. GUI showing statistics with input options
4. Computer Handheld Software
  - a. Communicate to the handheld device through USB
  - b. Functionality
    - i. Registration
      1. Get device identifier
      2. Associate device with enrolled classes
    - ii. Updating

1. Push firmware updates to the device
- iii. Charging
  1. Charge Li-ion battery through USB