Leadership In Team Engineering

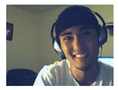
LITE

Child Security Project

Jeff Graves, Aleksey Khivrenko, Kurt Olsson, Ben Sack, Nik Sumikawa, Swapneel Uhalkar, Karun Vijay, Dave Welch








Camp Information

- Largest Summer Camp in Santa Barbara
- Runs for 8 weeks from June through August
- Over 250 children attend per day
- Targeted Age group: 3 – 12
- Approximately 20 – 30 counselors work during the duration

Challenges facing Current System

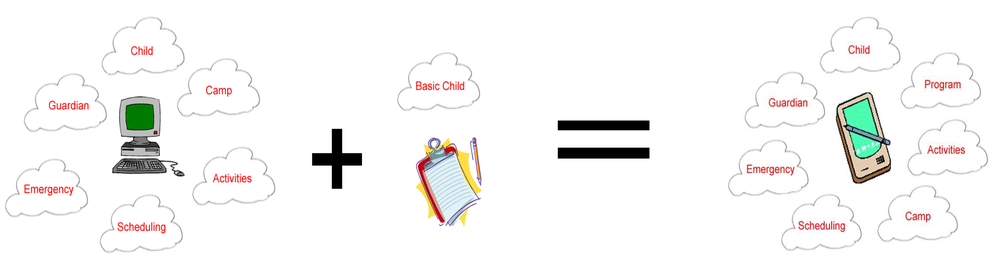
- **Efficiency**
  - Releasing over 250 children in short period of time (~ 15 minutes)
- **Information Management:**
  - Counselor carrying information of 20 – 25 campers on clipboard
- **Safety**
  - Returning child to proper guardian



New Implementation: Digital Solution

Personal Digital Assistant: *Simple method of storing important camp information on one device.*

Size: Replaces a large, unwieldy clipboard
Mobility: Reference information *anywhere*
Versatility: Can host a range applications
Organization: Large volumes of data on one device
Functionality: Easy use, information look-up

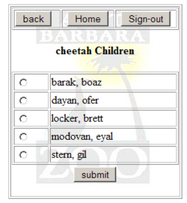


Wireless Implementation: Web Based Solution

Motivation: *Provide the Zoo and counselors a means to track when a child was picked up and by whom using a web enabled PDA phone.*

Program Design: Technical

- Coded in PHP
- GUI – HTML
- Data I/O – Web based
- Benefits of PHP/HTML
  - Simple to program and use
  - Works on any web based device
  - Track groups in the zoo
  - Not hardware based
- Challenges
  - Getting GPS info from the PDA



Solution: Motivation

- Track groups, Contact parents using phone,
- Simple, secure, efficient
- Web based administration

Program Design: Requirements

- Simple web interface
- Internet access

Future Applications

- Pictures, Digital Signatures, GPS

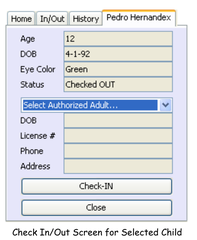
Non-Wireless Implementation: Localized Execution

Motivation: *Eliminate the need of network dependency by creating a program which runs locally on the PDA*

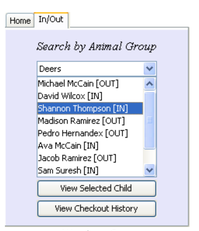
Program Design: Technical

- Coded in JAVA
- GUI – Swing based
- Data I/O – XML Dependant
- Benefits of Java
  - Good graphics package
  - Logical coding structure
  - Xml compatibility
- Challenges
  - JVM compatibility on PDA

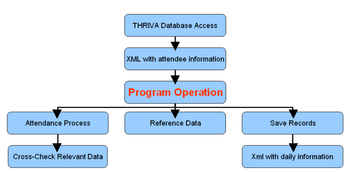
Home Screen



Check In/Out Screen for Selected Child



Attendance Screen



Program Flow Chart: (a) Access xml file with camp data from Thriva database, format, load into program. (b) Program operation: Xml data is read into the program. Conduct attendance check, reference data, and save records. Process occurs with the need for external networks

Solution: Motivation

- Inexpensive: Low cost, reliable PDA.
- Practical: Suitable replacement for incumbent

Program Design: Requirements

- Simple GUI -> Easy to Use
- Memory Efficient

Future Applications

- Extend functionality beyond the zoo: Implement to other appropriate situations