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Field Day Logging Database

The idea behind this project is to provide platform independent amatuer radio field day (FD) logging software that does not require the end user (FD participants) to install special software. The goal of this software to to provide an interface through a web browser that can be accessed via laptop, tablet, or even a smartphone. The software and source code will be accessible to anyone via the Unallocated Space github. The software will be licensed under the GNU Public License (GPL). The software will be designed to be hosted on a local network such as the amatuer radio High Speed Multimedia Mesh (HSMM). The software should be capable of running on low power hardware such as the Raspberry Pi.

This software should do the following:

- The web interface needs to be mobile friendly
- Require all participants to register with the system. Each user should be required to provide first name, last name, call sign, license class, and a password. *Unlicensed participants will not be required to register as they will not be using the primary station.
- Upon sitting at a station a user will select an available band and mode. Once that band/mode combination is selected it should become unavailable to other users until it is released.
- When logging a contact the user should be able to type the call sign and section in one line. (“W3UAS MDC”). The server will split that into two fields, call sign and section, and then notify the user of either a successful log entry or duplicate for that band-mode. The software should also be capable of handling callsigns with prefixes or suffixes (“VE2/W3UAS” or “W3UAS/1”)
- If possible, the web page should perform real time dupe checks. Ex: I type “w3uas” and when I hit space the form should alert me that W3UAS is already in the log for that band and mode.
- When entering logs, there should also be an optional comments field.
- The server should perform input validation on all fields. “ ‘drop table log;” is not a call sign.
- The GOTA log submission page should ask for a person’s name and optional call sign once. There should be a “I’m done operation button” to end the session.
- The GOTA logs cannot contain any more than 500 QSOs as per rule 7.3.13.1.1.
- Please see 7.3.13 for all GOTA rules and requirements.
- The software should prompt users every 30 to 60 minutes asking if they are still on the same band/mode. It would suck if you changed bands without telling the software and all of your contacts for the last 2 hours were wrong. If possible, the prompt should not appear while the user is typing.
- Provide an admin interface for easily fixing errors caused by the previously mentioned scenario.

- Provide a FD summary page with an output that makes it easy to transfer data to the following site: http://www.b4h.net/cabforms/fielddayentry.php
- The summary output should make it easy to comply with section 8.3 of the 2016 Field day rules.
- The admin should be able to grant access rights to other users such as the control operator and log submitter. There should be varying levels of access permissions.

The software will be built around a relational database that includes, but is not limited to the following tables:

- Users: This table will hold the account information for the FD participants. Unique user ID, call sign, first name, last name, license class, and a hash of the user's password.
- Inventory: This table is to keep accountability of equipment at field day. All radios that go on the air should go into this table to be referenced by other tables. Unique Radio ID, Model, User ID of owner, power output, and possibly other fields.
- Log: Some may argue this is the most important table. This table will store the entire FD log which will include: Time stamp, band, mode, call sign of contact, section of contact, user id of participant, and comments.
- Bands: This is just a list of bands. Maybe there is a better way to reference this?
- Point values: List of each mode, as well as all of the FD bonuses and their point values.
- Radios in use: This table will keep track of who used what radios at what time, and also provide information to alert other participants of what bands are currently in use. This is a dual purpose table providing both real time data as well as statistical data for later reference.
- Pictures: A table of images uploaded by FD participants. This will provide a convenient channel for both people submitting images, as well as the person gathering them all.
- Guest book: Anyone who visits the FD site should be encouraged to sign the guest book. Unique guest ID, first name, last name, optional email address, comments
- GOTA log: This will be the log that unlicensed participants will sign when using the Get on the Air (GOTA) station

The web interface should include the following pages:

- Home page with noticeable registration button
- Login page
- Statistics/log viewing page
- Admin interface
- About page
- Field day rules and information
- Guest book
- Band/mode selection page
- Log submission page
- Log post processing page

Skills required:

- Database management
- SQL
- Responsive web design (RWD)
- Real time data validation
- JavaScript
- Regular expressions
- HTML5
- PHP
- Web server administration

References:

- ❏ https://developers.google.com/web/fundamentals/design-and-ui/?hl=en
- ❏ http://www.arrl.org/files/file/Field-Day/2015/2015%20Rules.pdf
- ❏ http://www.ntu.edu.sg/home/ehchua/programming/sql/relational_database_design.html
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