

# SINGAPORE DATABASE WORKSHOP 2012

## DAY 1 – Wednesday Sept. 19

- I. Introduction – Presentation of participants
- II. Install programs and software. Copy datasets for exercises.
- III. Show current MySQL database structure
  - a. Highlight differences from previous database structure
- IV. Review some database concepts
  - a. 3 normal forms
  - b. Advantages and disadvantages of having a completely normalized database
- V. SQL
  - a. Why MySQL ? PHP?
  - b. Review basic SQL commands
    1. SELECT syntax
  - c. Practice some exercises

## DAY 2 – Thursday Sept. 20

- VI. SQL continued
  - a. Joining tables
  - b. Subqueries
  - c. Review other SQL commands:
    1. INSERT,
    2. UPDATE
    3. DELETE
    4. CREATE / DROP
    5. LOAD
  - d. Practice with exercises

## DAY 3 – Friday Sept. 21

- VII. Introduction to the Data Entry program

- a. Using the Data Entry screens to enter data
  - 1. Purpose of the 3 different forms
  - 2. Practice entering data
- b. Double data entry screening
- c. Using imageJ/pointpicker to digitize scanned maps
  - 1. Using R program to convert pixels to meters

#### **DAY 4 – Saturday Sept. 22**

- VIII. Screening program
  - a. What is screened
  - b. How to make edits – save all steps in a text file
- IX. Practice correcting errors from Screening
- X. Report program
  - a. Explain ViewFullTable
    - 1. Why and when to upgrade
  - b. How to download

#### **DAY 5 – Sunday Sept. 23**

FIELD TRIP TO BE ANNOUNCED

#### **DAY 6 – Monday Sept. 24**

- XI. How to upload data when data entry screens not used?
  - a. Preparing text files in correct format
  - b. Loading text files into temp tables
  - c. Screening data in temp tables
  - d. Writing scripts to correct errors
  - e. Uploading data in order (old trees, new recruits)
  - f. Creating View table

## **DAY 7 – Tuesday Sept. 25**

- XII. Making changes to permanent data in production tables in database
  - a. Making updates to tree data, stem data, dbh, species, location etc.
  - b. Inserting new records into production tables
  - c. Deleting data from production tables
  - d. Creating history records
  
- XIII. Species corrections
  - a. Difference between species misidentifications and taxonomic changes
    - 1. When to use TaxonEd
  
- XIV. TaxonEd
  - a. Demonstration of how software works

## **DAY 8 - Wednesday Sept. 26**

- XV. Working with own database
  - a. List of errors to check in own database
  - b. Writing scripts to fixing errors in database by editing their data

## **DAY 9 - Thursday Sept. 27**

- XVI. More practice using SQL commands to edit/update permanent data.
  
- XVII. Backup practices – mysqldumps and tape backups.
  - a. mysqldump syntax
  
- XVIII. General Discussion concerning having the database on the Harvard server or on own servers. Mirroring databases.
  
- XIX. Database versions
  - a. When to update databases – once a year or every two years for the “official” database, as many times as necessary for the “working” database.