Module 1: Data Entry from Ledger/Card/Label/Catalog/Images

Task ID	Task Name	Explanations and Comments	Resources
T0	Select catalog sheet, individual specimen, specimen drawer or tray, or label image(s) to be databased.	Institutions vary in data entry source. This might be specimens, label images, labels, catalog sheets, images of catalog sheets, etc. Data entry may be effected via database forms, spreadsheets, or other medium for later upload. Some institutions image labels or cards, attach the image to an empty database record, and enter data into the record from the attached images.	
T1	Determine data elements to be entered for each specimen.		This is usually controlled by an institution-specific protocol and reflects whether all label data or only selected data are entered.
T2	Create and populate record(s).	Data entry may be from keystroke or from a combination of keystroking and voice recognition software. For names not found in the database authority files (taxonomic, geographic, human),	

		data entry technicians not skilled in taxonomy or nomenclature might elevate those names to the curator for quality control and decision making. For systems in which data entry can happen in external datasets (e.g. Specify/Specify Workbench), newly created datasets (e.g., in Excel) are imported into the database at this stage. This process usually validates data, highlights errors, and requires correction in order for the data to be successfully imported.	
T3	Rectify duplicate catalog numbers (if needed).	Ensure that catalog numbers are unique. Duplicate numbers are usually caught at the time a record is saved or as an external dataset (e.g., Excel) is imported. Methods vary. Possible rectifications include: ● adding a suffix, ● lining out ansd replacing number, ● linking previously	Rectifying duplicate catalog numbers is usually governed by institutionally specific policy or protocol.

		published numbers within database.	
T4	Clean/verify (QC) data.	This step can also be performed later as a separate, disconnected step following data entry. When performed here, review by an expert (curator, researcher, collection manager, or other) usually follows initial keystroking by the data entry technician.	Requires skills of both a data entry technician and knowledgeable expert. In most institutions, this step is iterative and continuous.
T5	Enrich and augment data from external sources.	This includes adding data from field notebooks, monographs, reports, publications, etc.; updating and annotating taxonomy; georeferencing. For some institutions, data augmentation (such as adding georeferences) is accomplished via a separate workflow.	● Technicians. ● Ancillary software (such as GEOLocate).
T6	Spot-check data.	QC is ongoing. In most institutions, a data or proofing expert selects and spot checks records for accuracy and completeness. This may be done with direct visual inspection or by executing database queries that reveal errors, such as unexpected null or blank fields or fields	Data or proofing expert.

		that have been populated with inappropriate or incorrect data.	