VATOOL BRIEF DESCRIPTION

Purpose: VA Dashboard application (VATOOL) is a web based application aimed at providing visualisations of VA data and COD reports and summaries, obtained after successfully running/executing OpenVA pipeline. VA and COD data summary will help in monitoring and evaluating VA data collection and also provides information that is informative on VA data quality and also CSMF based on aspects like age group and sex in a specific year. VA Data and COD information are extracted from OpenVA pipeline end results are saved in PostgreSQL database, where the dashboard will pick them for further data management tasks and analysis and finally displayed in the web portal.

Data Flow: The dashboard is composed of:

- python script – This is an automated program that takes VA Data and corresponding COD information and does the following:
    - merge the 2 datasets and save the final result to PostgreSQL database table "vadata".
    - Runs data quality checks and saves the errors found in the database table "errors" which can be accessed via the web portal.
    - Runs various analysis and produces results of VA and COD analysis for reporting purposes and VA tracking.
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- web portal – This is the dashboard web application displays the analytics, and other useful reports/charts based on the merged "vadata" table (central table/repository) from the PostgreSQL database.

Software Implementation: The VATool web application is written in PHP/CSS/HTML, and requires a web server for hosting purposes. It also depends on other programming languages and tools including Python, R , ODK briefcase and PostgreSQL (database application).

- GitHub link: https://github.com/homabay2016va/VATOOL_Demo
- Documentation link: https://github.com/homabay2016va/VATOOL_Demo/blob/master/files_to_run/VATOOL_documentation.pdf

Current system modules:

1. **Creating account and adding users:** This allows for creating and adding of users of the system. In future the system will include role based access to the system modules**.**
2. **Home page:** Summary of VAs done by age group and total of VAs done so far, Cumulative summary of VA submissions by months.
3. **VA DATA module: Browse/view Individual VA responses for completed VAs.** This gives a simple interface to preview individual VA data question by question as labels are indicated in the WHO 2016 VA Questionnaire
4. **COD analytics module:**
    - ✓ COD CSMF overall, CSMF by major age groups (Child, Adult, Neonate) and CSMF by sex. All these aspects are being displayed by year of death and the option ***ALL*** is selected if data is to be displayed regardless of the year of death.

- ✓ Another aspect being displayed here are frequency of undetermined cases by interviewer. This is to help monitor undetermined cases being produced by an interviewer to indicated need for retraining and control data quality from interviewers.

5. **VA analytics module:** Provides distribution by month of deaths that occurred in a specified year by sex and age group. Additionally, you can also monitor VA submissions by month across the specified year for each interviewer**.**

Future modules:

1. Data manipulation/cleaning module. This is meant to offer a platform for data cleaning of various error profiles as produced during the data quality checks as this may affect final COD.
2. Embed data quality checks to the pipeline after VA data download but before COD analysis. This is meant to improve the quality of COD information by excluding inconsistency VA data for further review.
3. User management and role based access: Have modules that are accessible according to user rights/roles. This is to make sure usability among VA supervisors, VA technical team and system administrator.
4. Any other useful requirement that may arise.