

# Criteria A: Planning

## I. Synopsis

My client is Ms. Gloria Benny, co-founder of godreams.org (Guardians of Dreams) which is a non-profit organization that works with children who grow up in child care institutions like orphanages.

The organization is associated with 132 children's homes in three cities (Bangalore, Chennai, Cochin) in South India. It has four main projects: tutoring after school, scholarships for bright students, grant for eligible children to purchase supplies, and upgrade of infrastructure of centres.

Volunteers of different age groups, mostly students and young working professionals assist in these activities. Currently, although the organization has a dedicated website all of the data for different programs, volunteers, centres, classes, etc. are being manually maintained in spreadsheets (Google Sheets).

In my conversations with the client (see Appendix A) a need for better management of organization's data was identified. She also expressed the desire to have a software for volunteers to manage children's home data and register attendance. After understanding the operations, processes and data needs of this organization, I proposed to design the database model, and an easy to use software with user interfaces for viewing and managing relevant data.

The important features to be part of the software were discussed and finalized with the client based on the organization's current needs and priorities. Considering future enhancements that the software application could potentially have, it was also decided to design the software as easily extensible.

Word count: 230

## II. Rationale

When data is managed in spreadsheet applications they are vulnerable to errors from concurrent access, have data redundancy, do not provide a good user experience, not reliable to maintain important data and are difficult to implement row-based security. It is also hard to implement data constraint changes and reporting on the stored data.

Any organization wanting to store complex interrelated data and needing software applications run on their data should consider using a database management system (DBMS), which allows to store and organize data

efficiently. This specialized software system helps avoid many of the problems associated with managing data in spreadsheets.

I have proposed to design the database model for my client and set up an Oracle DBMS. Oracle DBMS is a very popular, robust, and scalable database management system that is also available for free. Since the client needs a simple and accessible user interface for volunteers for easy data entry, access, and reporting, I proposed a software application with multiple user interface screens that can run as a standalone or deployed on the web.

User interfaces will be mainly developed in Python high-level programming language using the Flask web framework. Python and Flask are free to use, open source, simple and extensible. I have chosen free but proven technologies considering that the software is for a non-profit organization which needs to use their limited funds prudently.

Word count: 228

### **III. Success Criteria**

1. All entities of data in the organization and their relationships are identified and modelled.
2. Oracle DBMS system instance is setup with the database objects created.
3. Structured Query Language (SQL) script templates provided for setting up and manipulating core data
4. Volunteer software with following user interface screens is developed and made available to deploy on the web
  - a) Login screen for user authentication
  - b) Profile page - to see logged in user's own details
  - c) Child care institutions listing page with their details and ability to edit their data - for volunteers having administrator role
  - d) Volunteer listing page – to list contact details of all volunteers
  - e) Page that shows the attendance history of logged in user – for volunteers having teacher role
  - f) Page to register attendance for class taken – for volunteers having teacher role
  - g) Organization details page (About page)
5. Software user manual document created to be given to volunteers