STUDENT IT ARCHITECTURE COMPETITION - III

Recognizing and Promoting the Art and Science of IT Architecture

Problem Statement

1 BACKGROUND OF THE ORGANIZATION

Finance to Education (F2E) is a non-profit organization that supports financial needs for the education of students. F2E supports education needs from high school through Ph.D. The primary goal of F2E is to support students that may not be able to continue education primarily due to financial constraints. Starting with a modest number in 2010, the organization is currently supporting over 200 students. Some highlights of the process followed by F2E are:

- Pre-verification of the family and environment support for the student: A coordinator of the organization visits the home of the student who is seeking assistance. The coordinator verifies that the students needs help and has the family support to pursue education. Once this is verified the student is asked to submit a formal application to F2E.

- The student has to maintain a certain level of academic performance in order to continue the funding. He/She is responsible to submit a report at end of every semester and attach certified summary of the academic performance.

- Fees are paid directly to the educational institution. The student may receive an allowance for routine expenses, if needed. There are checks and balances in place to ensure that the allowance is not misused.

- All donors receive an annual progress report of the student(s) they are supporting.

The details of functioning of F2E are as below :

1.1   Selection:
A student in need submits the pre-verification form, a coordinator from F2E is assigned to the case. The coordinator makes an assessment using the information on the form and visiting the applicant's home, talking to their parents and relatives, etc. The coordinator also makes an assessment of the intent and willingness of the student to learn. Based on this information the candidate is approved as a viable candidate or rejected for not meeting the required criteria.

1.2   Allocation:
There are various types of funds that can be granted to a candidate, these are tuition fees, lodging and boarding expenses, and other miscellaneous expenses. The tuition fees are directly paid to the schools/colleges. All other funds are provided via remittance in a bank account. Student can access these funds as required by withdrawing it from the bank.

1.3   Tracking:
Students are required to remain in good academic standing for them to remain in the F2E program. Students are also required to send a grade status report every semester to F2E. The information includes subjects covered in the semester, credits for the subjects and the grades earned.

The fund usage is also tracked in a separate report where the student provides a proof of expenses and withdrawals for the semester.

Both these reports help to track the student's academic progress as well as their use of the funds. The student's lack of consistent grades or misuse of the funds can result in the student being disqualified from the F2E program.

1.4 Career & Education Guidance Services (CEGS) :

Financial aid is an important but not the only one aspect for a student's overall development. The leadership of F2E is looking to expand the services in the form of providing mentorship and guidance to the students. The goal is to build a network of mentors who can work with students to actively guide and assist in academic as well as career related issues and questions.

The CEGS function is to maintain a catalog of professionals from various backgrounds who are willing to be a mentor. This catalog will include the expertise of the mentors and their interests. The students can avail of this facility by connecting with these mentors to seek advice as necessary.

1.5 Graduation:

Students are required to submit a Graduation status at the end of their academic program, this includes a certificate or a transcript from the school/college. The documents need to be verifiable with the school/college and will denote the end of the lifecycle for the F2E program.

2 THE NEED AND THE OPPORTUNITY TO BUILD AN IT SOLUTION:

All the activities of F2E are managed manually, there is a great need and opportunity to develop an information system to streamline entire operations. F2E leadership is specifically looking for the following functionality:

- Automate the gathering and storage of following data

    ○ Initial applications by the student applicants

    ○ Database of details of a student from the time of funding to the time of graduation

    ○ Records of financial transactions for each student

    ○ Reports submitted by students during their education

    ○ Creating and managing mentor information as well as the mapping of students to mentors

    ○ Catalog of current and possible donors with relevant details

- An administration module to manage all functional modules: Selection, Allocation, Tracking, Career Guidance, etc.

- Ability for the student to submit their application online

- Ability to set and send auto reminders to students for reports and other deliverables

- Mobile app and web browser interface for students to submit progress reports online

- Mobile app and web browser interface for mentor connection and communication

- Ability to send group emails to mentors, students, donors, etc.

- A website to showcase the activities, statistics and provide generic information about F2E

2.1 Technology and other constraints:

- The solution must be deployed in the cloud at the lowest possible cost

- Appropriate security mechanisms to protect personally identifiable information must be maintained

- System should work for all levels of browsers and mobile operating systems

- It should be possible to translate information pages into multiple languages since the families may not be able to communicate in English

- The staff and leadership as well as many users of the mobile apps are non-IT people. It is important that the solution be very easy to learn and use.

- The system is expected to grow in the number of users by 25% per year and volume of data by 40% per year.