VITacademics Requirements Specification

Introduction

This requirements specification is a document, that describes VITacademics, a multi-platform application that is a college productivity tools for student attending VIT University. The intent of this document is to highlight the need for this application, and will elucidate on how it intends to address the need, and formulates a possible software solution for achieving the same.

VITacademics, is intended to bring out the functionality present on the existing online academics system academics.vit.ac.in onto largely popular mobile application platforms (Android, iOS, and Windows Phone), thereby greatly increasing the accessibility and usage of the online education system, and at the same time improving visibility of all academic information for the students. The application system is largely going to cover all the basic functionality concerning academics, like attendance, grades, academic content, schedule, and all other relevant functionality. The nature of mobile applications also allows for the possibility of a lot more features be made available.

Description of the problem

Students and professors of VIT University, currently use the online educational environment, academics.vit.ac.in in order to obtain all academic information. This includes a huge array of features, such as attendance tracking in classes, class enrollment, grades, study material, leave applications, class information and updates and a lot of other important features required by students which haven't been exhaustively listed. This online environment however, is made of outdated web technologies. This leads to two main problems, firstly, this makes the entire environment extremely cumbersome to use, and can be really unintuitive, this renders a lot of the content that is available, functionality unused, and students fall back on conventional paper options. Secondly, this entire environment was not built with the forethought of mobile technology becoming ubiquitous. Hence, the entire environment, which is accessible via the internet is absolutely unusable on mobile browsers, because it wasn't designed to scale and work on smaller displays. The end result of both of these problems is that, a perfectly rich set of features are going practically unused because of bad design, and a lot of productivity is being lost out on because students take up obsolete paper options for a lot of logistics that is technically available online.

To add to this, VITacademics intend on adding a lot of features that allow teachers to conduct the logistics of classes, in a more efficient and convenient manner. This includes notifications, scheduling, pushing educational content, polling and many other features that are made possible via a mobile interface. The clients, the students and professors alike have expressed their concerns with using this existing system, and that exactly is what VITacademics intends on fixing. On the one hand, VITacademics has been planned as completely native mobile applications, which are to be designed keeping in mind the systems they run on. This ensures to mitigate exactly the two problems that the existing system has fallen prey to.

Use Cases

Students – Get updates on classes

Professors – Send updates to students

Parents – Get information on child's performance

Description of the software solution

Overall goals

- The application is required to be intuitive and designed for a great user experience for all the users of the system.
- The application is to be comprehensive in extending all the functionality that appears in the existing system in a manner that is natural.
- It will be required to have robust security features for logging in, and authentication as it carries a lot of personal information about students.
- Focus has been required on schedule (and subsequent access to each class' grades, notifications, attendance, reminders, educational material, etc. from the schedule), and a logical manner of presenting features, that is driven by frequency of usage.
- The application should necessarily have easy coordination, and integration with other education related software.
- Emergency information, important reminders, deadlines and other actions requiring timely response should be front and center. For this, a good real-time notification system is essential.
- The software needs to be dynamic in serving the different actors, depending on the role that it is being utilized for, but is all inclusive in one package, offering conformity.

Features and Functional Capabilities

The application has been conceptualized as having features that are delivered using the design principles of the platform it is functioning on. Keeping this in mind, the application will requisition the use of side menu bars, top and bottom action bars, navigation panels that provide easy switch of actions to bring out the planned functionality. The home page, is to carry a schedule, a spotlight of announcements, reminders and information that is contextually the most essential pieces of information for the user in question. Easy integration with the mobile's browser, mailing capabilities, document readers, cloud storage services is functionally necessary for logistics, learning material access and editing, and notifications to students in a class.

Students, expect functionally expect accessibility to all class related information. This will involve the need for simple and informative graphical interfaces that will provide all the information they need at the tip of their fingertips. The application will all provide some quick handy links to all other college related forms, and portals for payment of fees, library book statuses among other necessary functionalities. Professors, expect functionality to communicate with their students, by pushing out messages, notifications, reminders and deadlines. They expect easy access to forms, to fill out student grades,

attendance, publish documents as learning materials. The application is also to present to them class statistics, individual student performance, abilities to carryover of information and material from previous offerings of the class. It should also give them some scheduling functionality to setup office hours, and other events. Parents, require simple functionality of being informed of their ward's performance, progress and possibly contact information of administrators, counselors that they can reach out to. This portion of the application needs to be extremely simple, as their usage is limited and complexity of usage shouldn't inhibit them from utilizing the application.

Software Attributes

The system needs to be reliable and should provide reasonable uptime within acceptable limits, i.e. about 95% of the time. Notifications and critical information needs to be delivered in a timely manner, such that they are still meaningful. It is extremely imperative, that the entire system is secure and well architected to prevent any malicious usage of it. The software is expected to be conforming to native platform design rules, and should focus on user-centered design of interface and functionality owing to the numerous generation of users of the application.

Operational Requirements

The applications should be designed to run on the version of mobile platforms with maximum users, and upwards. For instance, it should run on Android Jelly Bean and upwards, and iOS version 8 and upwards. This will ensure that the application can be used by the most number of people without losing out on the advantages of newer mobile platform versions. The application is required to use secure protocols for communication. The application is required to present enough guidance for new users, in order to get them accustomed to the application and the entire system.

Long Term Plans

Long term plans for the software system is to look at better integration options, looking at updating to widen support to more and more users. The application is expected to keep up with platform updates. Options to explore support for other users in VIT could be explored. Optimizing the features and streamlining the applications can be done after assessing how the usage is being distributed among the different sections of the application.

Maintenance and Support Costs

The system is low on support-costs as it uses open-source software, tools for the development process. Each version pushed to users are ensured to be independent, and robust not requiring a lot of bug fixing and updating. Once the development of the application system has reached some saturation, maintenance can be carried over to the department of tech at VIT University and will incur low overhead, or alternatively can be maintained by a university elected group of student developers. The documents, and original artifacts from the development process will assist in any future and maintenance.