Aakash Developers Portal and Enhancements to Aakash Tech Support Portal

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By

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Under the Guidance of

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DECLARATION

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included. We have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Aakash Portal Team

Date: 30-06-2013

Abstract

The Aakash Portal is a online Portal, which is divided into two modules, Aakash Tech Support and Aakash Developer Portal.

Tech support Provided a Aakash tablet users a platform to discuss the technical Problem that they face with the tablet. Discussion Forum, FAQ, chat, submit ticket and feedback features are provided to the users to help him solve the problem.

The Developer Portal is an online platform which brings developers together and facilitates application development and improvement. Developers can view and help in existing Aakash project or provided new ideas and discuss on them. Video lecture, application and files are made available for them.

Aakash Portal is Open Source software. Therefore it is going to be freely available. It is Platform Independent, easy to operate and maintain.

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1 INTRODUCTION

Aakash Developers Portal and Enhancements to Aakash Tech Support Portal is a MHRD Project developed by summer interns at IITB under the guidance of Prof. Deepak Phatak. Aakash Portal is a place where one can share ideas, discuss issues and effectively collaborate with one another.

1.1 Documentation Purpose

The purpose of this document is to present a detailed description of Aakash portal system. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system .The features discussed in this document are mainly functional requirements. These requirements are described in software development perspective to easily grasp by use. It also covers the non-functional requirements like performance, reliability, availability, security, maintainability etc

1.2 Project Scope

With the continued evolution in technology, portal is becoming more and more essential now-a-days, where user can freely express their thoughts, ideas and discuss their issues that they are currently facing with the technology .Aakash portal provides a convenient and easy-to-use graphical user interface to use.

Here the Aakash portal is divided into two modules

A) Aakash Tech support: Aakash Tech support provided a platform where Aakash tablet user can share and clarify their issues which they are facing with Aakash tablet.

B) Aakash Developer Portal: Here it provided base for the Developers, where they can discuss about the existing and new technology/ideas that can be implemented on Aakash tablet. Developer portal also provided blog and study material, to enhance the coding skill of user.

Aakash Portal is an Open Source software i.e. Aakash Tablet user can utilize the resources available on portal without any cost. Therefore it is going to be freely available. It is Platform- Independent and easy to operate and maintain.

1.3 Intended Audience and Document Overview

This document will be the first guide for prospective software developers, project managers, testers and most importantly users of Aakash tablet. This document contains software functionality, software and hardware requirements and user documentation.

Developer: The developer who wants to read, change, modify or add new requirements into the existing program may need first to consult this document and update the requirements in appropriate manner so as not to change the actual purpose of the system or make the system inconsistent.

User: The user of this program reviews the diagram and the specification provided in the document and check to determine whether the software has all the suitable requirements and if the software developer has the implemented all of them.

***Tester*:** The tester needs this document to validate that the initial requirements of this programs actually corresponds to correctly executable program.

1.4 Definitions, Acronyms and Abbreviations

CMS - Content Management System, is computer programs that allow publishing, editing and modifying content as well as maintenance from a central interface.

Joomla - Joomla is software (CMS) that keep track of every pieces of content on your website. Content can be simple text, photos, music, video, documents, etc.

Android- Android is Linux based operating system for mobile devices such As smart phone, aakash tablet and so on.

1.5 Document Conventions

In general this document prioritizes in writing the requirements of the system and analyzing in details the tools being provided to its users. Every requirement is having its own priority (none conflicting). In addition few figures are also being provided to make requirements more clearly to the reader.

1.6 References

- http://docs.joomla.org/J2.5:Installing_Joomla!#tab=Intro
- http://en.wikipedia.org/wiki/Joomla
- Software requirements specification content and format standard

2. Overall Description

2.1 Product Perspective

The product is supposed to be an open source, under the GNU general Public License. It is a web based system implementing client-server model. The Aakash portal System provides simple mechanism for users to share and acquire knowledge.

The following are the main features that are include in Aakash Portal

- **Cross platform support**: Offers operating support for most of the known and commercial operating systems.
- **Language Support**: offers multiple language support for global use of this site from different location.
- **User account**: The system allows the user to create their accounts in the system and provide many features to update and maintain it.
- **User being supported by the system**: Though the number is precisely not mentioned but the system is able to support a large number of online users at a time.
- **Group discussion**: It offers the facility to the users to ask any query, share their experiences and discuss on the topics or doubts in the forums, also provide option for commenting and also has provision for liking the comments and the post etc.
- **Downloadable materials**: Provided facility to user, where user can download Study material for courses and other tutorial.

- **Search**: search is simply local search engine based on key words.

- **Project:** Have section for project where user can get idea about on-going/completed project's.

- **Blog:** Blog contain Articles for enhancing tablet user coding skill.

- **Problem submitting:** Having facility where user can submit their problem which they are current facing in Aakash Tablet and is not available in frequently asked question section.

- **Problem section:** Frequently asked section contain answer of problem which Aakash tablet user frequently faced.

- **Feedback Section:** Here user can send their suggestion regarding portal.

2.2 User Characteristics

It is considered that the user do have the basic knowledge of operating the internet and to have access to it. The administrator is expected to be Internet literate and to be able to use email with attachments. The administrator should also have proper command over CMS software i.e. Joomla.

2.3 Operating Environment

This is a web based system and hence will require the operating environment for a client and server GUI. This will be operating in the following operating environment:

- Apple Mac OS X
- Linux/Unix
- Microsoft Window

2.4 Dependencies

1. This software highly depends on type and version of browser being installed in the system i.e. browser version should be used which have HTML5 support

2. It also depend on speed and bandwidth of Internet present for video buffering

2.5 Design and Implementation constraints:

This system is provisioned to be built on the Joomla framework (type of content management system) also as the size of data being exchanged or stored is large, so the proper type of data management system should be adopted for efficient performance. For language support apart from the Basic English language it also requires to have multilingual support for making its use worldwide in convenient.

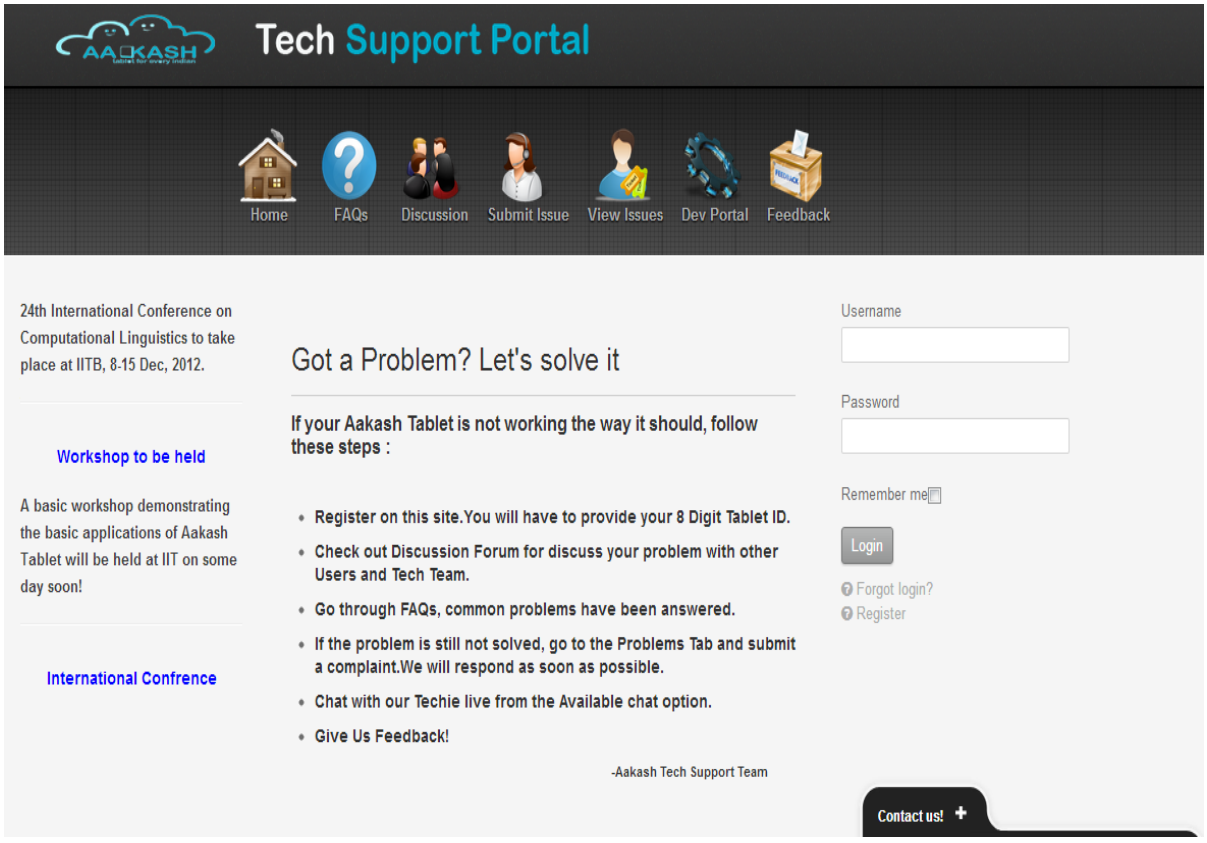
3.0 Specific Requirements

3.1 External user Requirement

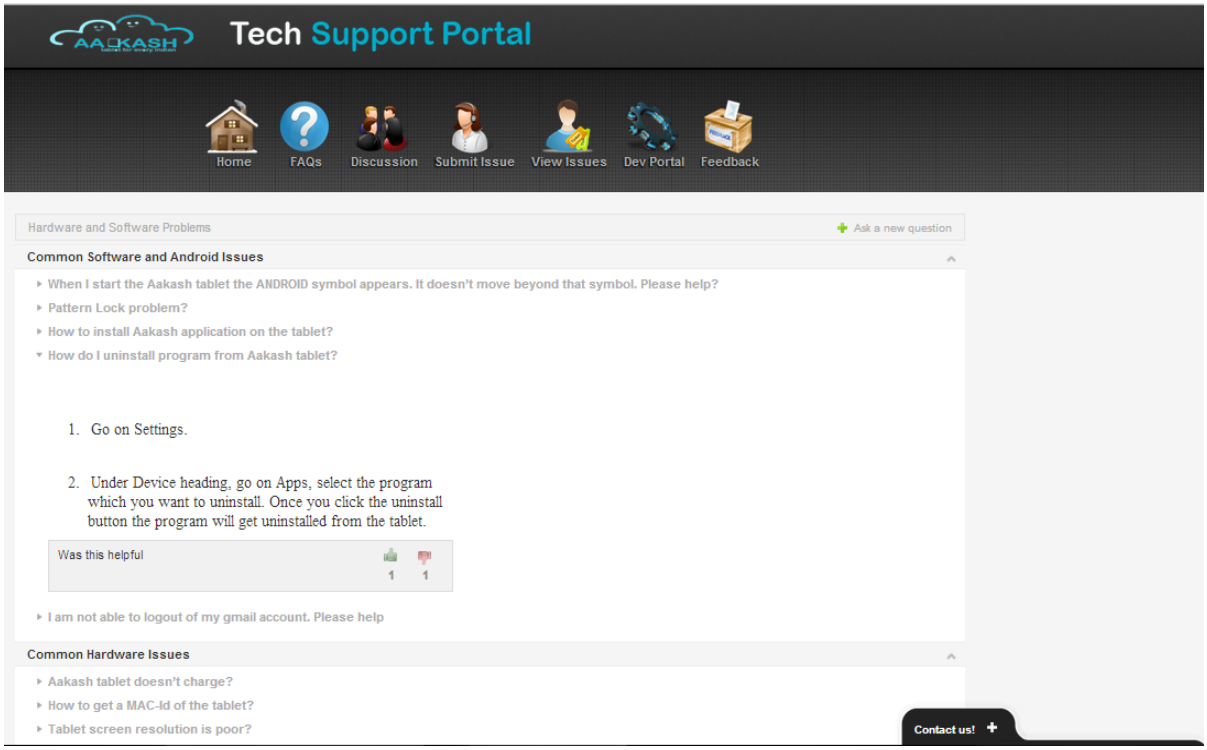
3.1.1 User Interface:

The interface should be user friendly, so that user can access his requirement easily. To provide user friendly interface, Joomla which is a type of CMS (content management system) is used.

3.1.1.1 Tech support Home page

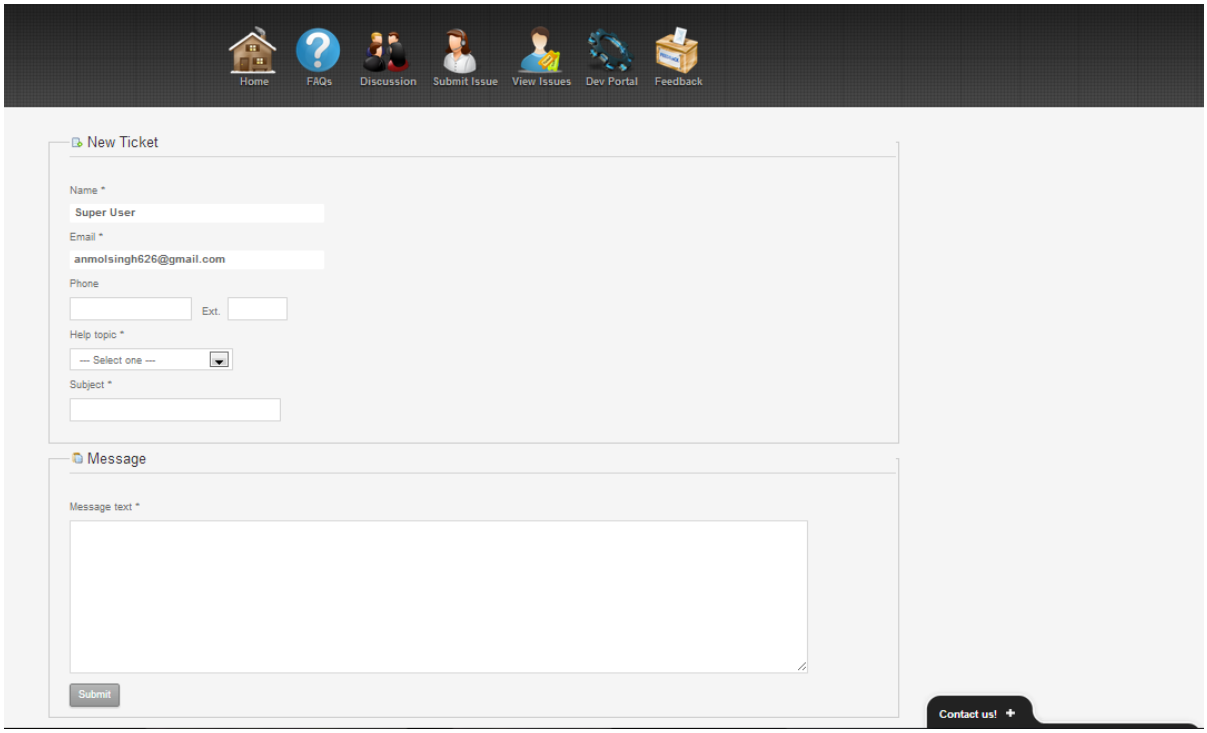


3.1.1.2 Tech Support FAQ section

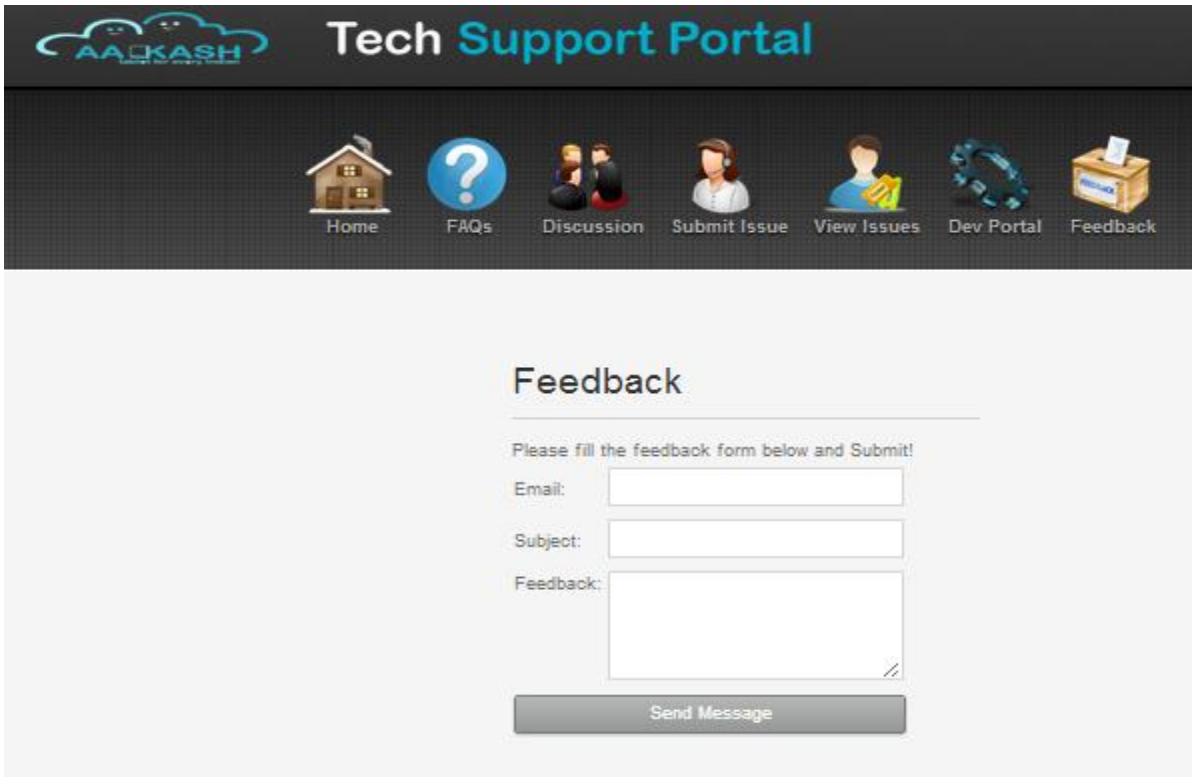


3.1.1.3 Tech support Discussion Forum

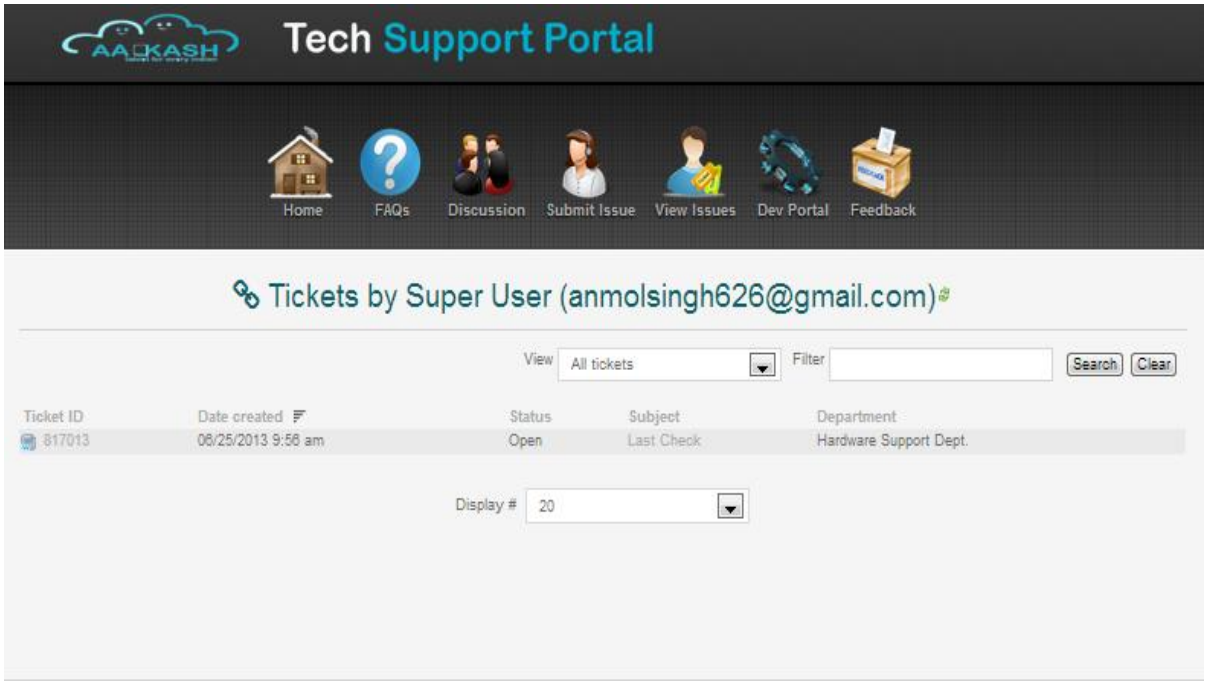
3.1.1.4 Tech Support New Ticket

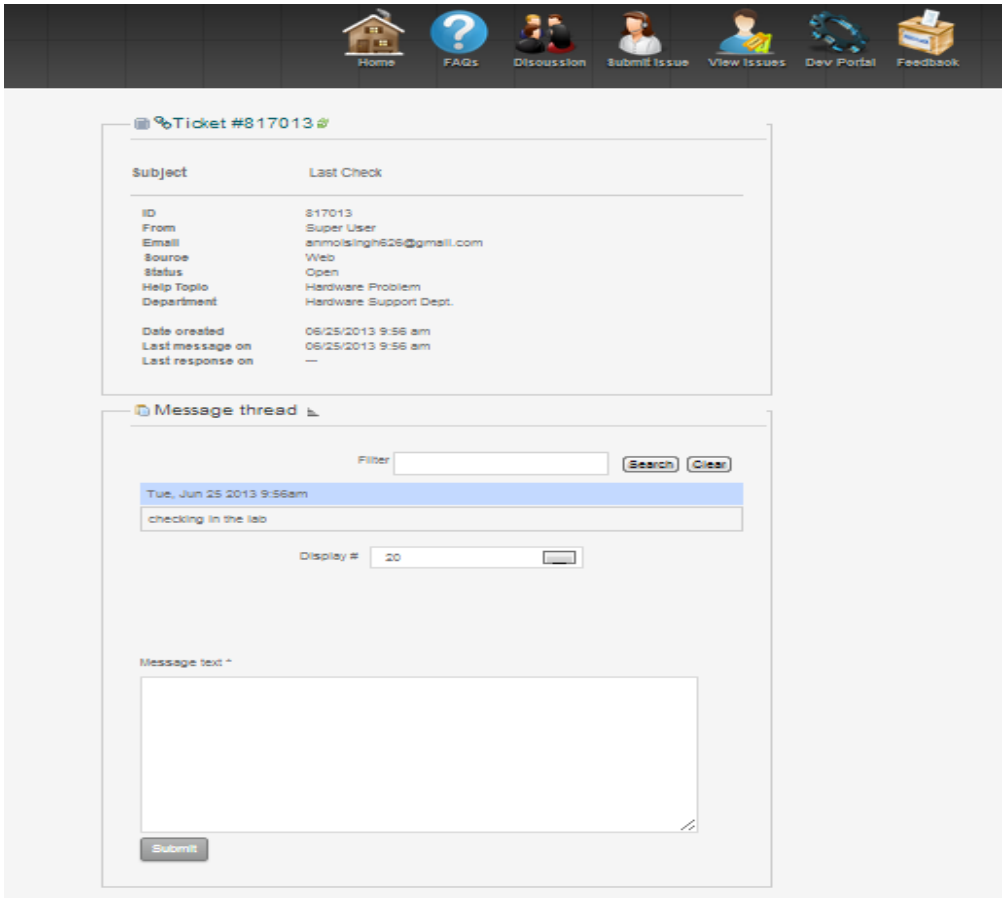


3.1.1.5 Tech Support Feedback



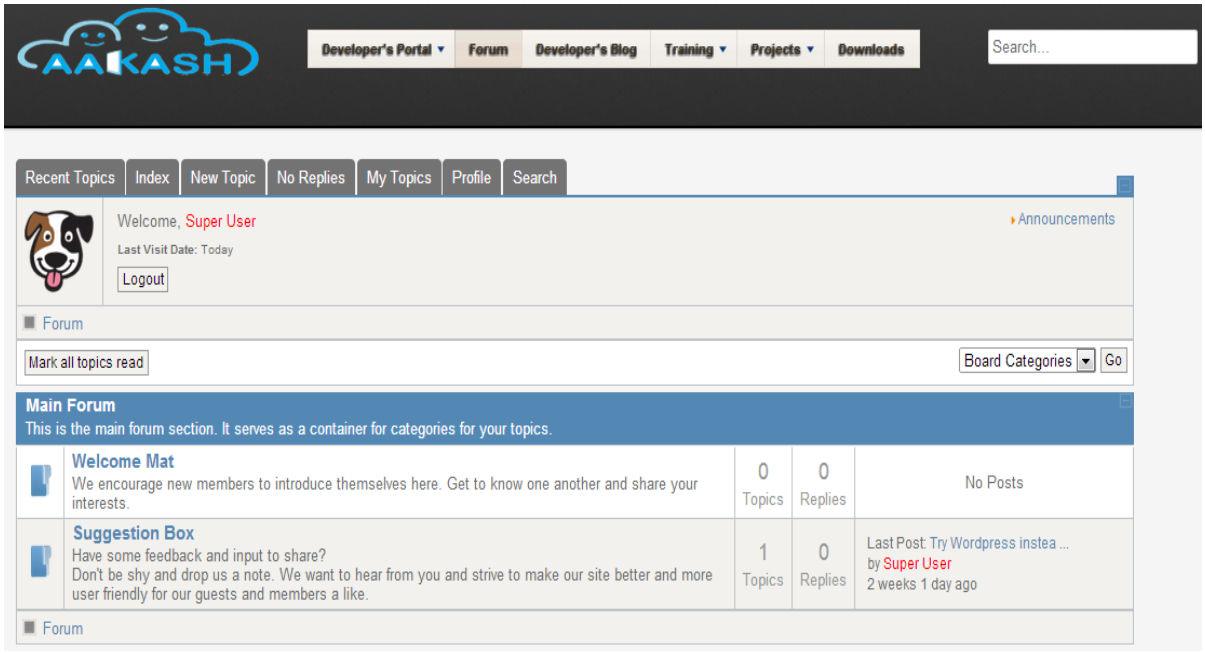
3.1.1.6 Tech support View ticket





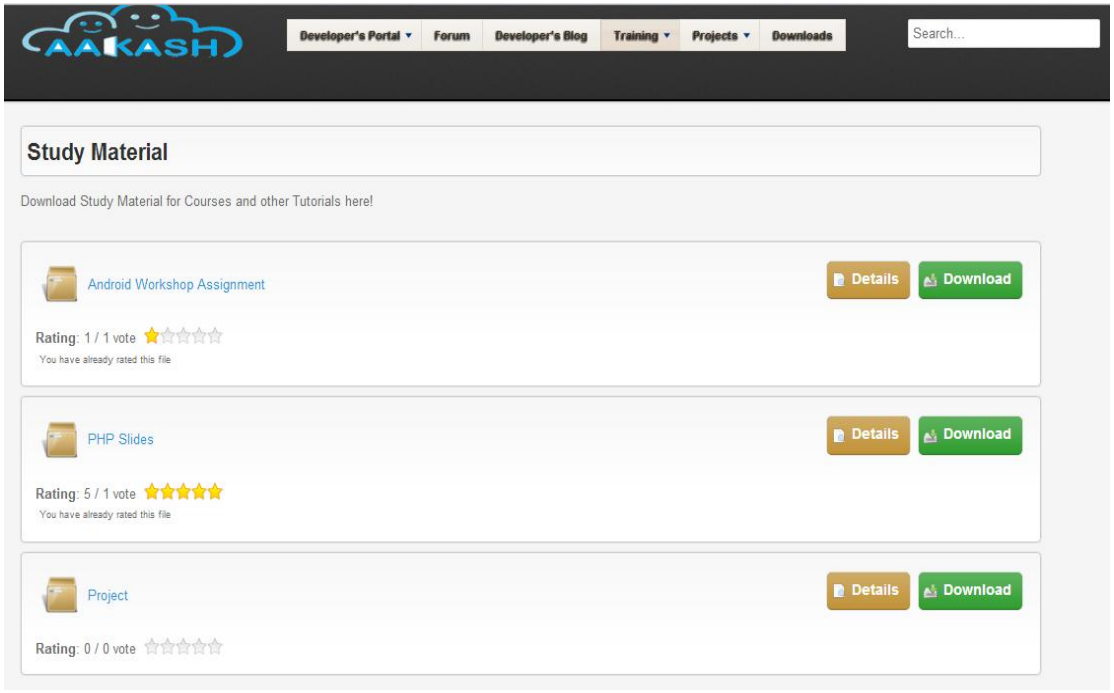
3.1.1.7 Developer Portal Home page

3.1.1.8 Developer Portal Forum

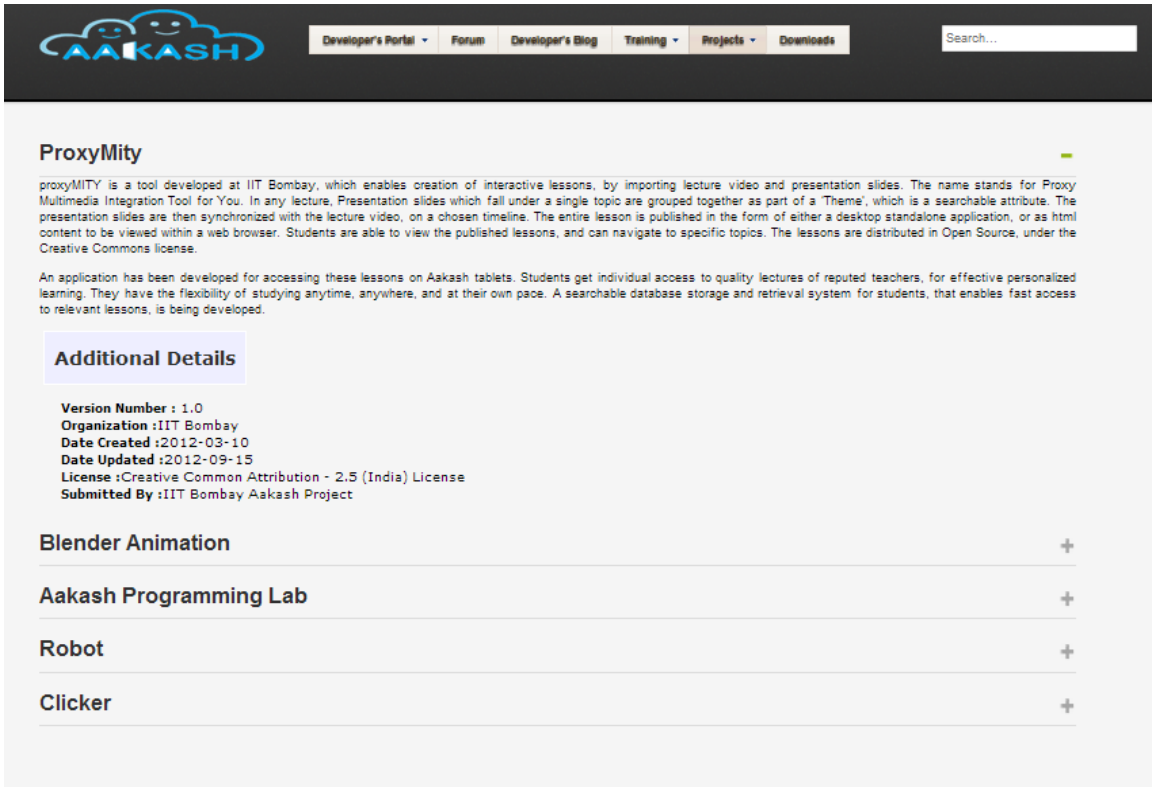


3.1.1.9 Developer Portal Blog

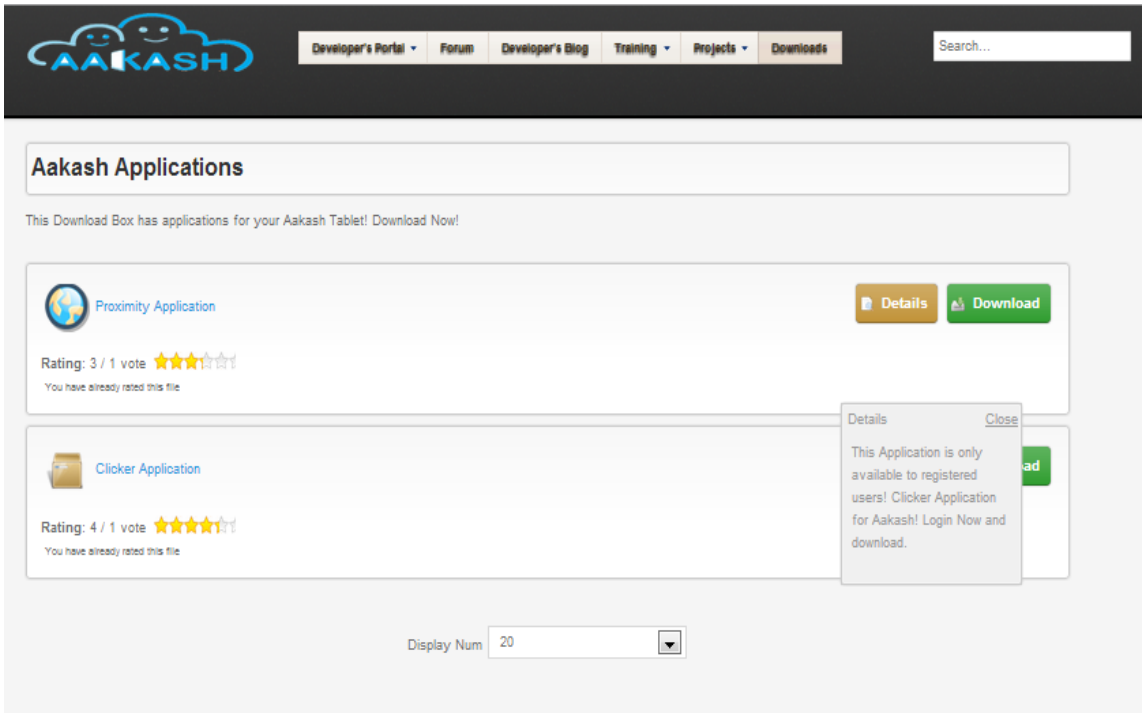
3.1.1.10 Developer Portal Training material



3.1.1.11 Developer Portal Project



3.1.1.12 Developer Portal Download Section



3.1.2 Hardware Interface

Device should be enabled with Internet facilities like Wi-Fi. Storing devices (flash, optical disks etc.) for the user to see a video, application in offline mode.

3.1.3 Software interface

The WAMP software (for window operating system) is used for implementing local server on desktop. The Server for web hosting should have PHP v5.3 +, MySQL 5.04 +, The Joomla 2.5 shall be used as development environment for implementing the modules.

3.1.4 Communication Interface

Setting up the server into server mode requires that there will be open ports for accepting connections from the clients. The connection between the client and the server uses Connection oriented communication, via TCP/IP—Transfer Control Protocol/Internet Protocol, implements reliable delivery of messages. Connection-oriented communication makes programming easier because the protocol includes mechanisms for detecting and handling errors and an acknowledgment mechanism between client and service. For video Streaming UDP connection is established between the client and the video server.

3.2 Functional Requirement

3.2.1 End user:

A) <u>User Registration</u>:

To use the system, user first registers in the site by filling a simple form, create account link is provided in **Forum** Section of tech support.

B) <u>Search Engine :</u>

Here Search Engine is used to Search local key from the Portal.

C) Discussion Forum:

Here user can enter into discussion by commenting or starting new discussion.

Features:

- Logged in user can only start the new discussion or comment in existing Discussion Topic.
- Guest can only see the Discussion topic and comments.
- User can see the number of view and reply made about particular discussion topic.
- "Posted By" and Date is Been displayed on Discussion support.

D) FAQ (frequently asked question):

In this section, solution of General problem that user currently facing in Aakash Tablet is provided.

Features:

- FAQ Contain solution of general problem.
- Both Logged in user and Guest can see the Solution.
- Here Problem is divided into 3 sections they are:

  1) Hardware Problem: Contain solution of Hardware Related Problem.
  2) Software Problem: Contain solution of Software related problem.
  3) General Problem: Here solution of General Problem is provided.

- If user is not satisfied with the solution provided, Logged-in user can report the Problem to the administrator.

E) Blog Section:

- It contain post on various topic to enhance the coding of the user.
- Here both Logged-in user and Guest can see the post.
- Guest can only see the post, whereas logged-in user can see as well as comment on various topic.

F) User login:

The user login in the login window provided in various page (Discussion-forum, report problem) .

Features of Logged-in user

- Logged-in user can only take part in the Group discussion.
- Logged-in user can only submit their problem, if Tablet-id of that user is present in database.
- Logged-in user can comment on the blog post.

G) Training:

- Here administrator posts various videos, slides, Lectures notes and study material for user.
- Here both Logged-in user and guest user can download the study material.
- Here plug-in is provided so that user can view the video online.

H) Project Section:

- Here user gets idea about various existing and new projects.
- Here both logged-in user and guest can comment on new project idea.

I) Downloads

Here various application that run in aakash tablet are been provided for the user by the administrator.

Features:

- Here both logged-in user and guest can download the project.
- Details of Application is been provided beside the Download link.
- User can rate (5 star rating) the application .

J) Feedback

- Here Portal user can send their suggestion to administrator to improve the aakash portal.
- Here both logged-in user and guest can provided the suggestion.
- Email-id is needed to provided the solution.

3.2.2 Administrator:

A) Verify Details:

Admin authenticates all the end users by checking their username and password.

B) Provides login account:

After getting the sign up details from the end user, Admin provides the username and password to the end user that should be kept for future login and also admin checks for uniqueness.

C) Maintains database:

Admin maintains the entire database and he is the only authorized person to add/remove/edit end user records.

D) Adding FAQs:

Admin helps to clear the doubts of user in this section by creating some frequently asked questions and its corresponding answers.

E) Provide solution of user:

User can sent their problem to administrator if they are not satisfied with the solution or solution of problem is not available in FAQ section.

3.3 Behavioral Requirements

Behavioural requirements of the system are described using use case view. The Following use case diagrams summarize the functional and behavioural requirements of the Aakash Portal.

A) Use case diagram of the Tech support Portal

B) Use case diagram of the Developer Portal

C) Use case diagram for Discussion Forum

D) Use case diagram for FAQ (Frequently Asked Problem)

A) Use case diagram of the Tech support Portal

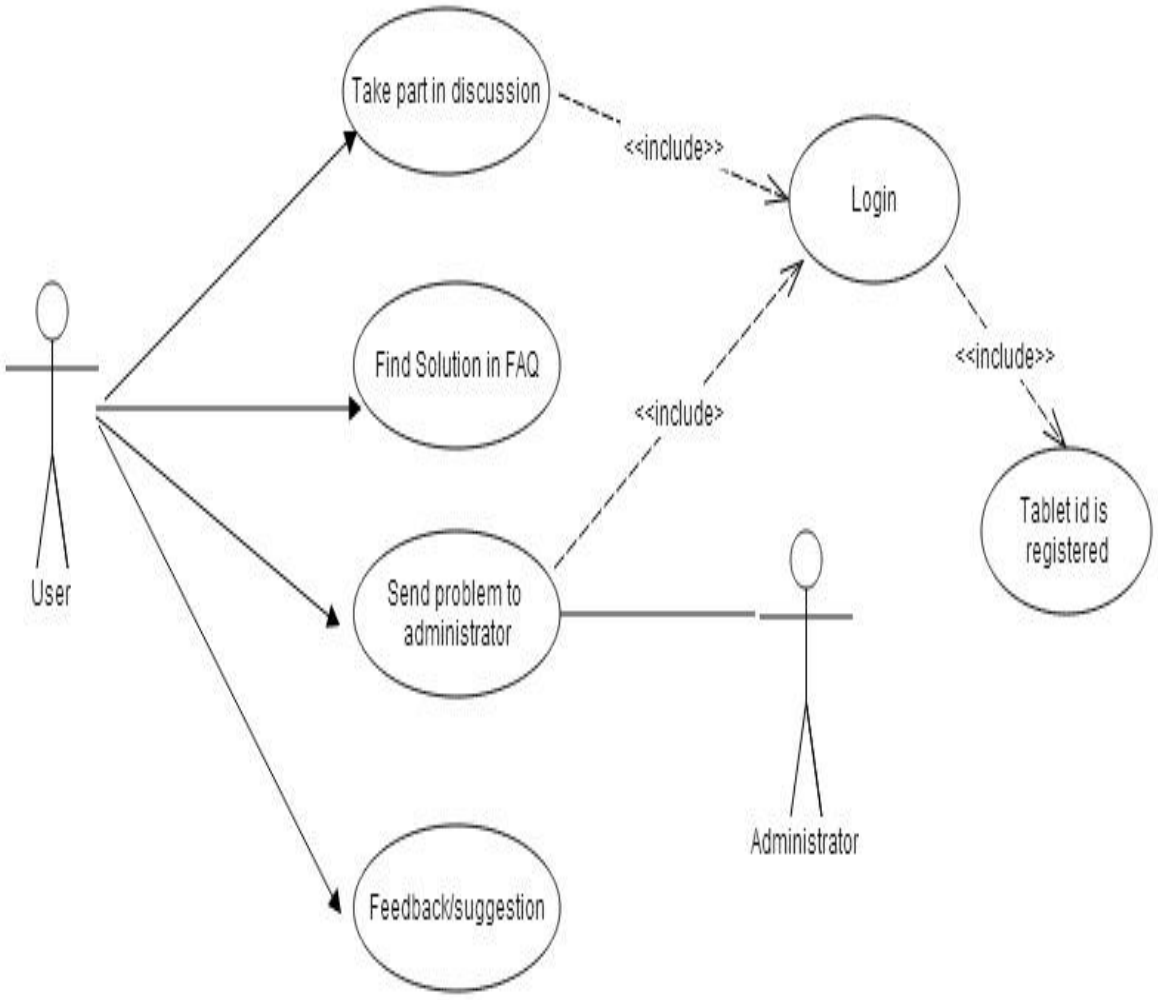


Fig- 3.3.1 Use Case Diagram for Aakash Tech Support

B) Use case diagram of the Developer Portal

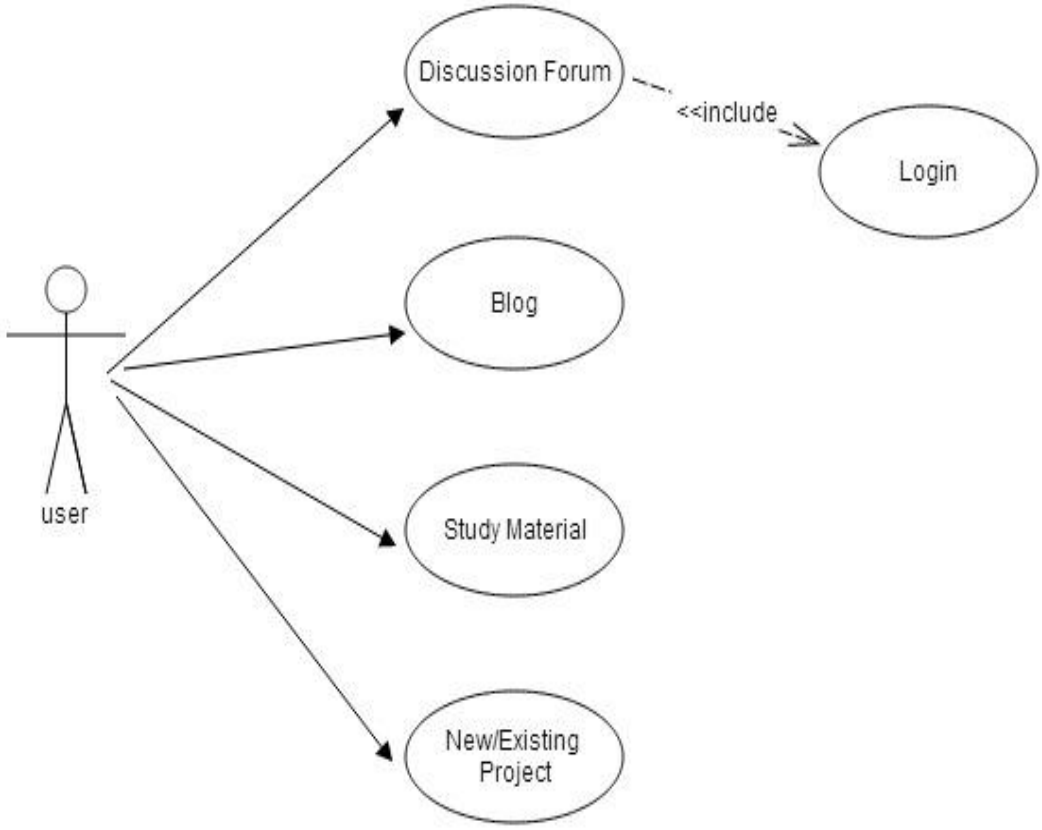


Fig 3.3.2 Use Case Diagram for Developer portal

C) Use case diagram for Discussion Forum

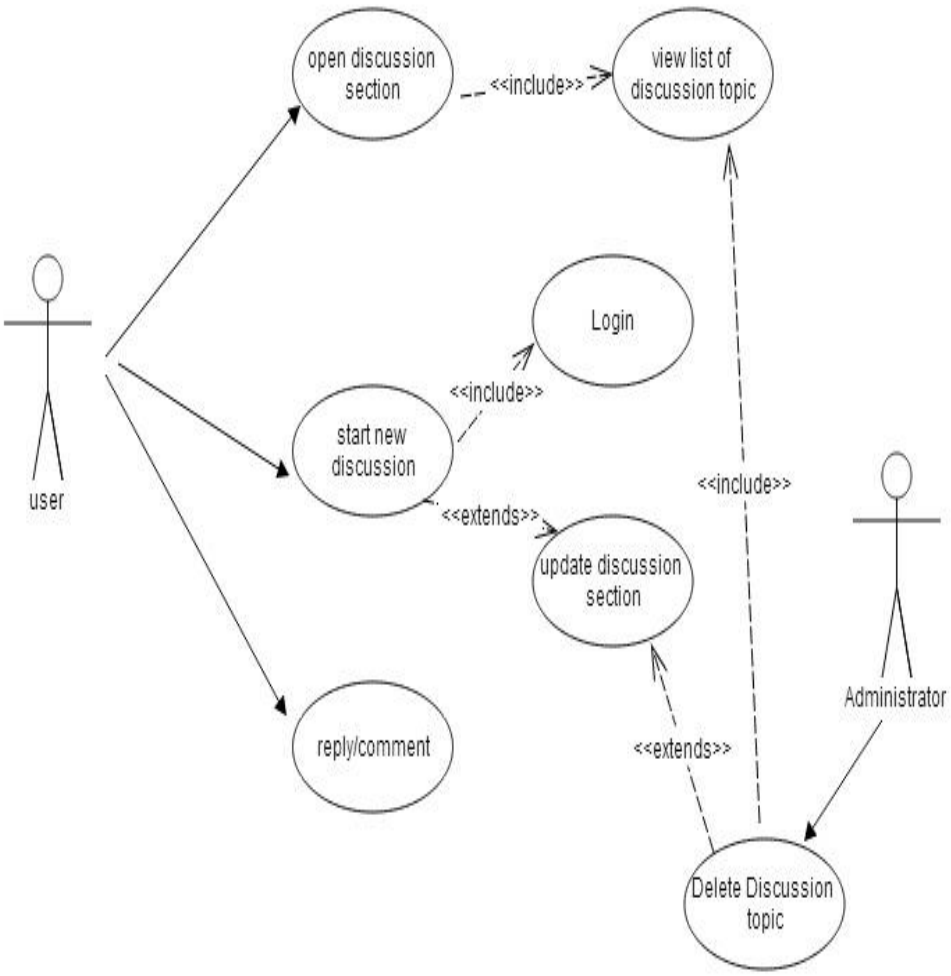


Fig 3.3.3 Use Case Diagram for Discussion Forum

D) Use Case diagram for FAQs

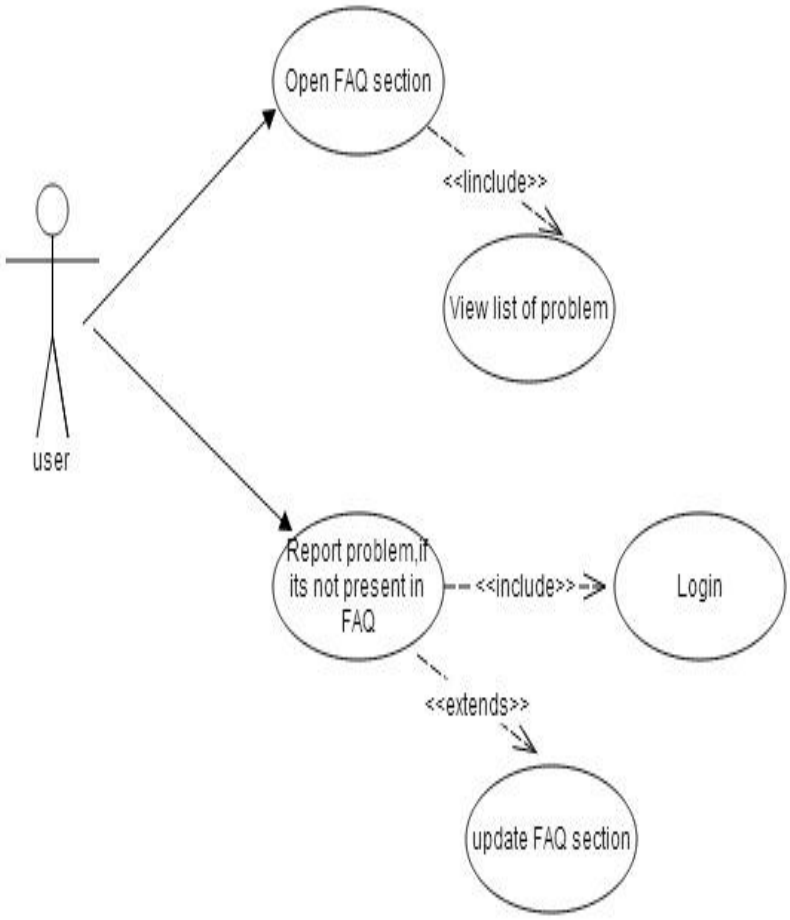


Fig-3.3.4 Use Case Diagrams for FAQs

3.4 Non Functional Requirements

3.4.1 Performance Requirement

1. Performance:

The system must be interactive and the delays involved must be less .So in every action-response of the system, there are no immediate delays. In case of opening windows forms, of popping error messages and saving the settings or sessions there is delay much below 2 seconds, In case of opening databases, sorting questions and evaluation there are no delays and the operation is performed in less than 2 seconds for opening ,sorting, computing, posting > 95% of the files. Also when connecting to the server the delay is based editing on the distance of the 2 systems and the configuration between them so there is high probability that there will be or not a successful connection in less than 20 seconds for sake of good communication.

2. Safety:

Information transmission should be securely transmitted to server without any changes in information

3. Reliability

As the system provide the right tools for discussion, problem solving, editing course materials, videos streaming. It must be made sure that the system is reliable in its operations and for securing the sensitive details.

3.4.2 Software Quality Attributes

1. Availability:

If the internet service gets disrupted while sending information to the server, the information can be sends again for verification.

2. Security:

The main security concern is for users account hence proper login mechanism should be used to avoid hacking. The tablet id registration is way to spam check for increasing the security. Hence, security is provided from unwanted use of recognition software.

3. Usability:

As the system is easy to handle and navigates in the most expected way with no delays. In t hat case the system program reacts accordingly and transverses quickly between its states.

4.0 Diagrammatic Descriptions:

4.1 Data Flow for Aakash Portal:

Level-0:

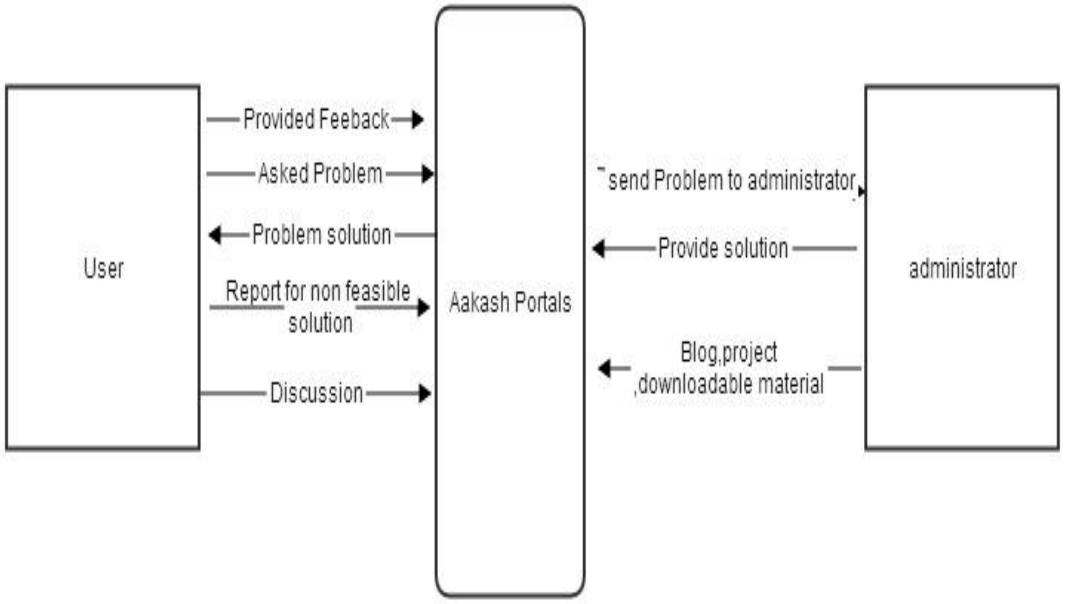


Fig – 4.1.1 Data Flow Diagram for Aakash Portal

Level-1

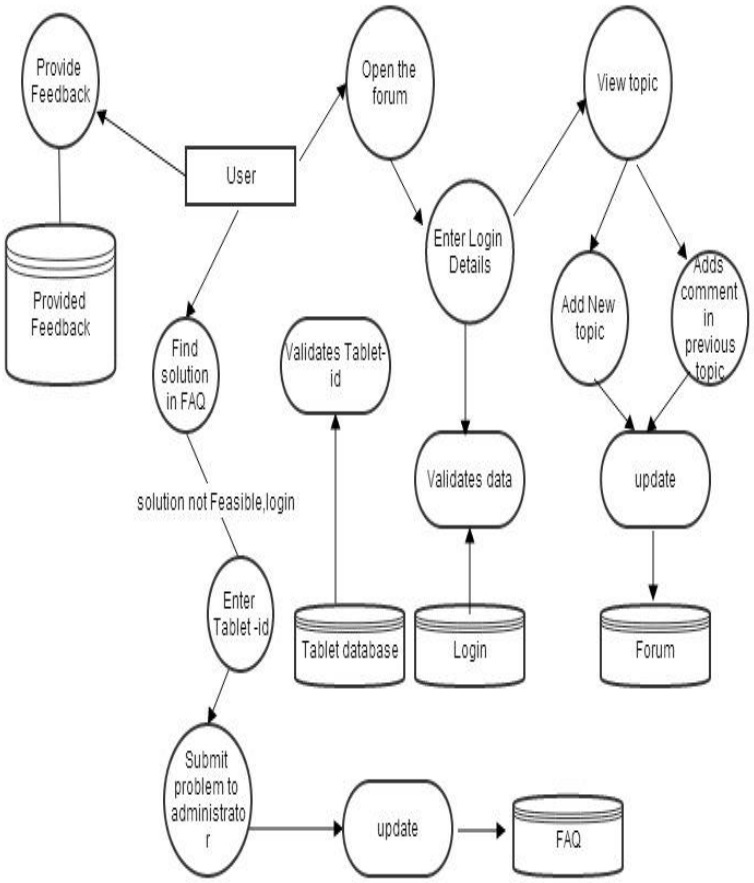


Fig- 4.1.2 DFD Level-1for Aakash Portal

4.2 Sequence Diagram for Reporting a Problem:

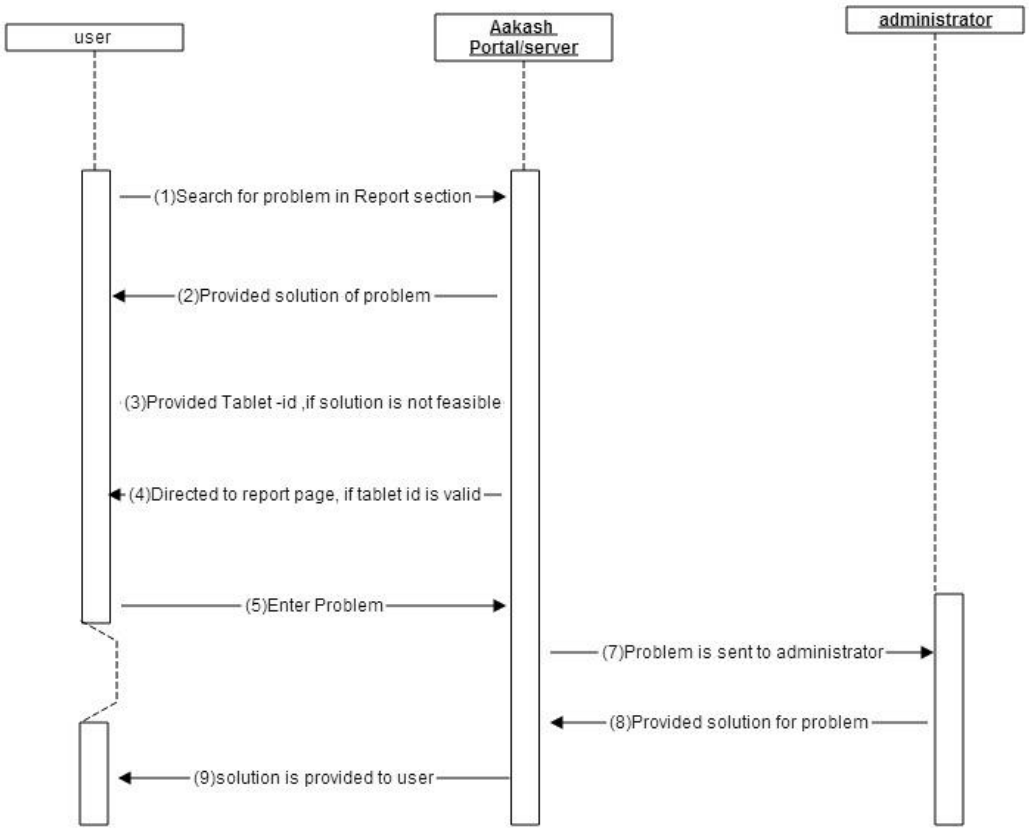


Fig 4.2.1 Sequence Diagram for Reporting a Problem

4.3 Flow Chart for Reporting a Problem:

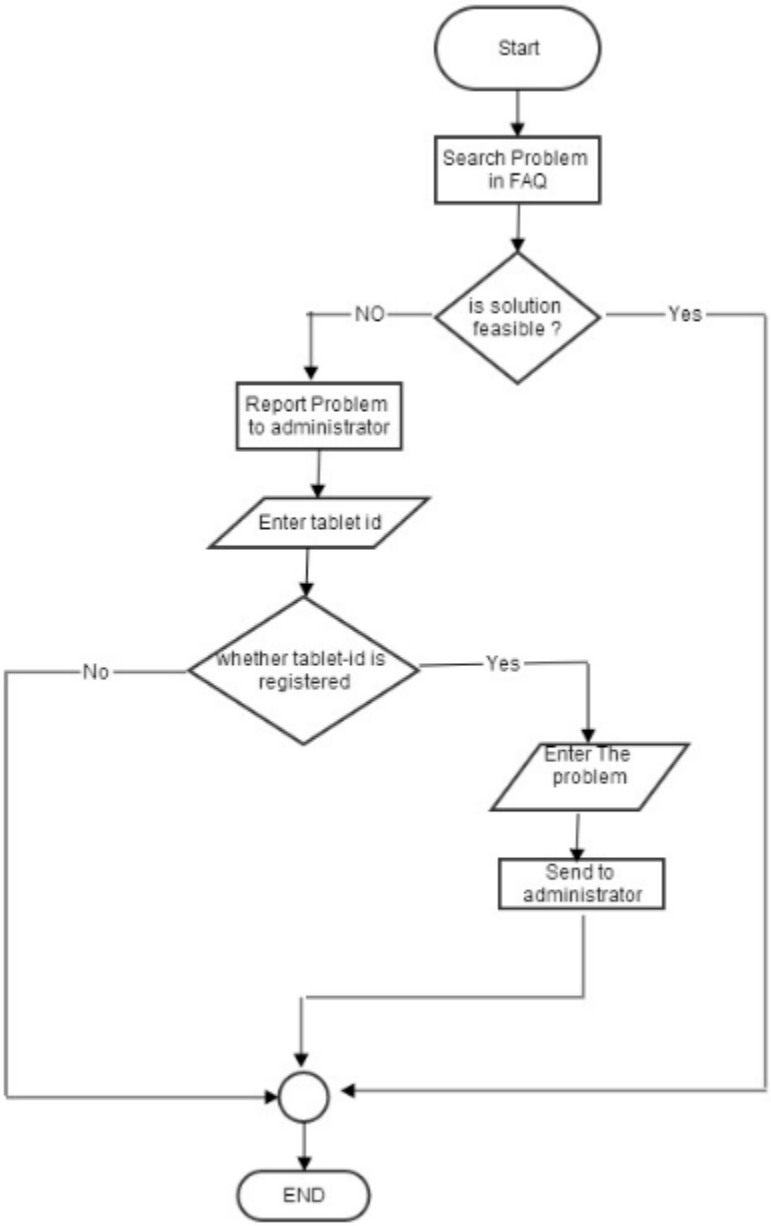


Fig 4.3.1 Flow Chart for Reporting a Problem

4.4 Entity relationship diagram

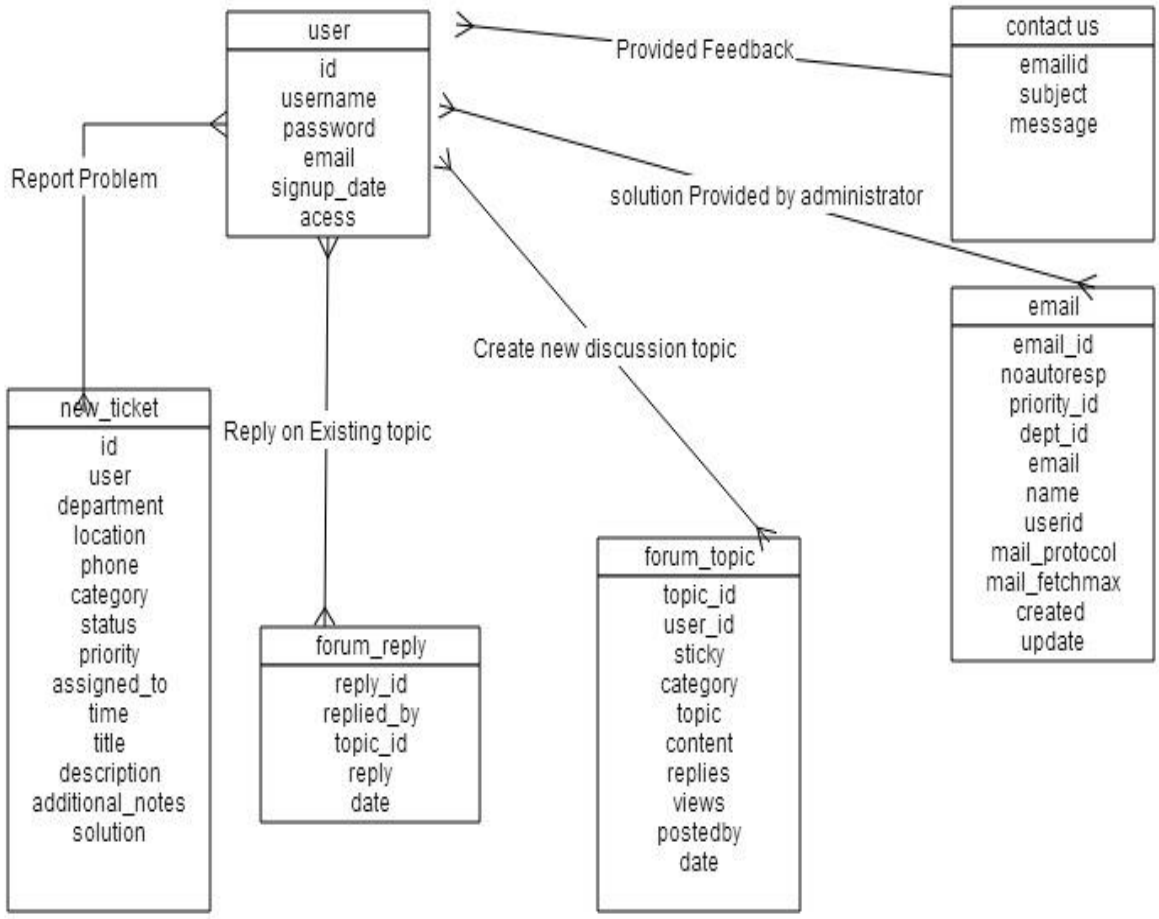


Fig 4.4.1 ER Diagram for Database

5. Conclusion

With the continued evolution in technology, portal is becoming more and more essential now-a-days, where user can freely express their thoughts, ideas and discuss their issues that they are currently facing with the technology, this is where Aakash Portal come in picture ,which provided a platform for Aakash users to discuss their issues that they are facing with the Aakash Tablet, as well as Aakash portal create an online platform which brings developers together and facilitates application development and improvement. Aakash Portal also solves the Problem very precisely and dedicatedly for each and every user .The design of this portal is very simple and user-friendly too, which make it more efficiently. Thus we can say that Aakash portal has a great scope in future for the users of Aakash tablet and Developers too.