proxyMITY
ON
AAKASH Tab

Software Requirements Specification

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Abstract

As the name suggests, “ProxyMITY” serves as a “proxy”, i.e. it provides virtual closeness (proximity) without the actual classroom. It is a “proxy Multimedia Integration Tool for You”, that helps teachers create dynamic rich-media lectures.

“ProxyMITY Lectures viewed on Aakash” is an Open source software product. Published lecture that are released under **the Creative Commons License by Attributions 2.5** are edited and prepared for distribution using ProxyMITY.

The main goal of this tool is to develop the ProxyMITY tool on Android Platform using Eclipse, android SDK and ADT Plugins to view the lecture videos present in the SD-Card or on a Server using Aakash tablet. Features such as Bookmarking a video and playing subtitles along with the video have been added. Android SQLite database is used for storing the bookmarked videos. The user will be able to update the bookmarks. The srt files for the videos can also be played by choosing from a list of srt files.

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

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Introduction

1.1 Purpose

As the name suggests, “ProxyMITY” serves as a “proxy”, i.e. it provides virtual closeness (proximity) without the actual classroom. It is a “proxy Multimedia Integration Tool for You”, that helps teachers create dynamic rich-media lectures.

Porting of ProxyMITY on Aakash Tablet helps users to get access to quality lectures of reputed teachers, for effective personalized learning. They have the flexibility of studying anytime, anywhere, and at their own pace. They can also navigate through the topics within the lecture. They can also play the subtitles with the video for better understanding. Bookmarking feature helps users to create and update the bookmarks on the videos.

1.2 Scope

“ProxyMITY Lectures viewed on Aakash Tablet” is an Open source software product. Published lectures that are released under **the Creative Commons License by Attributions 2.5** are edited and prepared for distribution using ProxyMITY.

The main goal of this tool is to view and navigate lecture videos on aakash tablet that may be present in internal and external memory such as a microSD-Card or hosted on a server using Aakash Tablet.

1.3 Intended audience and document overview

Intended audiences of SRS for **proxyMITY** include:

Developers- Developers would use this document to implement functionalities and to ensure the traceability of system.
Testers- Testers would use this document to know the interfaces of the system to test software accordingly.
Users- Users would use this document to verify requirements and implementations of the system.

1.4 Definitions

Android- Android is Linux based operating system for mobile devices such as Smart phones and tablet computers.

WiFi- Wi-Fi is technology that allows an electronic device to wireless data exchange (Using radio waves) over a computer network, including high speed internet Connections.

Micro-SD Card- It is extended memory where we can put any kind of Data or information. It can use any mobile devices such as Smart phones and tablet computers.

1.5 References and Acknowledgments

1. Aakash user manual, Aakash Lab, IIT Bombay.

2. Use case modeling guidelines documents.

3. Software requirements specification content and format standard.

Overall Description

2.1 Product Perspective

Product Functionality

- Students or User can easily view the lecture video present in the Micro-SDCard or on a server.
- The user can easily navigate through the lecture video using the tree functionality of this product.
- Published lectures will provide us virtual class room where students can see and listen any particular topic.

Features

• Android OS 4.0.3.
• Cortex A8, 1 Ghz Processor with HD Video Co Processor.
• 512 MB RAM.
• Storage: (Internal) 4GB Flash / (External) 2GB to 32GB Supported.
• Peripherals: 2 Standard USB Ports (Ver.2.0).
• Audio Out: 3.5mm jack.
• Display and Resolution: 7" Display with 800x480 pixels.
• Supported Document Formats such as PDF.
• Input Devices: Resistive Touch Screen.
• Connectivity through Wi-Fi IEEE 802.11 a/b/g.
• Battery: Up to 180 minutes of battery, AC adaptor 200.240 volts.
These versatile features of Aakash tablet makes this device very advantageous to use in student response system, which can provide more facilities than Clicker.

2.1.1 Operating Environment

There are two ways to operate this tool:

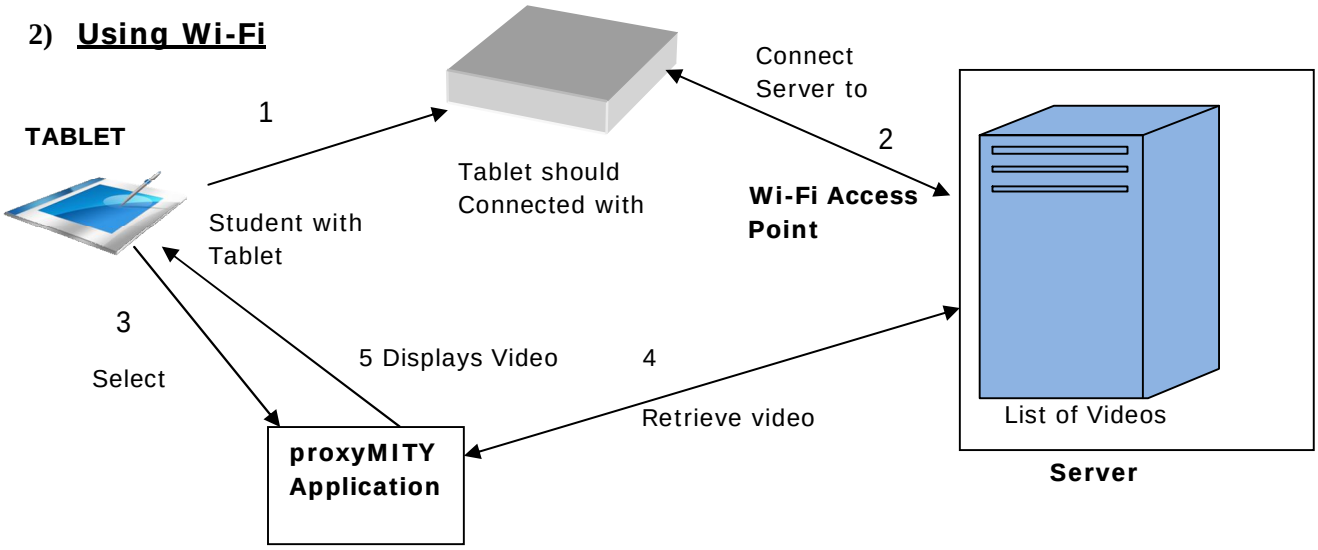
1) Using microSD-Card
2) Using Wi-Fi

1) Using SD-Card

Steps to Play lecture video:

1) Insert microSD-Card in tablet
2) Select proxiMITY Tool
3) You will get List of lecture videos
4) Select Any lecture video to view

2) **Using Wi-Fi**


TABLET
1
Student with Tablet
Tablet should Connected with
Connect Server to
2
Wi-Fi Access Point
List of Videos
Server
3
Select
5 Displays Video
4
Retrieve video
proxyMITY Application

SPECIFIC REQUIREMENTS

3. Specific Requirements

3.1 External Interface requirements

3.1.1 User Interfaces

User interface must be user-friendly. The user interface shall be designed using various in-built components available in android 4.0.3 packages such as VideoView for playing lecture video, ExpandableListView to display the tree structure to navigate through the lecture video, SlidingDrawer for hiding and showing the content etc.

3.1.2 Hardware Interfaces

- Any android operating system supported device
- microSD-Card to view the lecture video.

3.1.3 Software Interfaces

- Eclipse IDE shall be used as development environment for implementing the modules.
- Designing of modules and diagrams is done in UML using MS word and smartDraw.

3.1.4 Communications Interfaces

- WI-FI connectivity will be required to view lecture video present on the server.

3.2 Functional Requirements

3.2.1 External role

3.2.1.1 User Student

- Student Should be able to access lecture video from microSD-Card or Wi-Fi
- If student wants to access lecture video from Server , student tablet has to connected with Access point
- Same access point should be accessible by Server

3.2.2 Behavioral Requirements

Behavioral requirements of the system are described using use case view.

Following use case diagrams and DFDs summarize the functional and behavioral requirements of the proxyMITY tool:

1. Use case diagram of the application
2. Use case diagram to start the lecture video
3. Use case diagram for bookmarking
4. Use case diagram for viewing videos with subtitles
5. Data Flow Diagram through SD-Card
6. Data Flow through Server

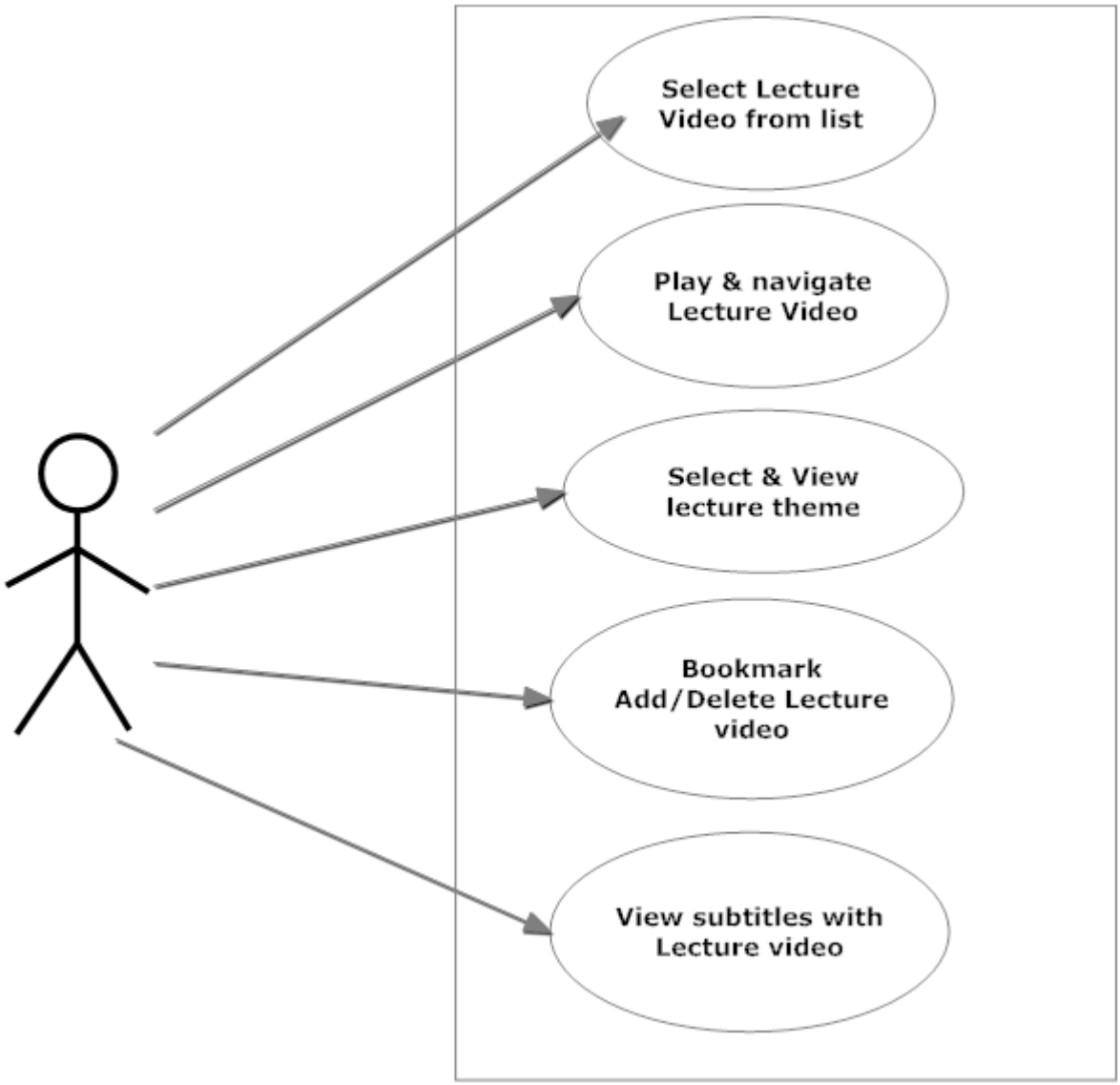


Fig 3.2.2.1 Use case diagram for application

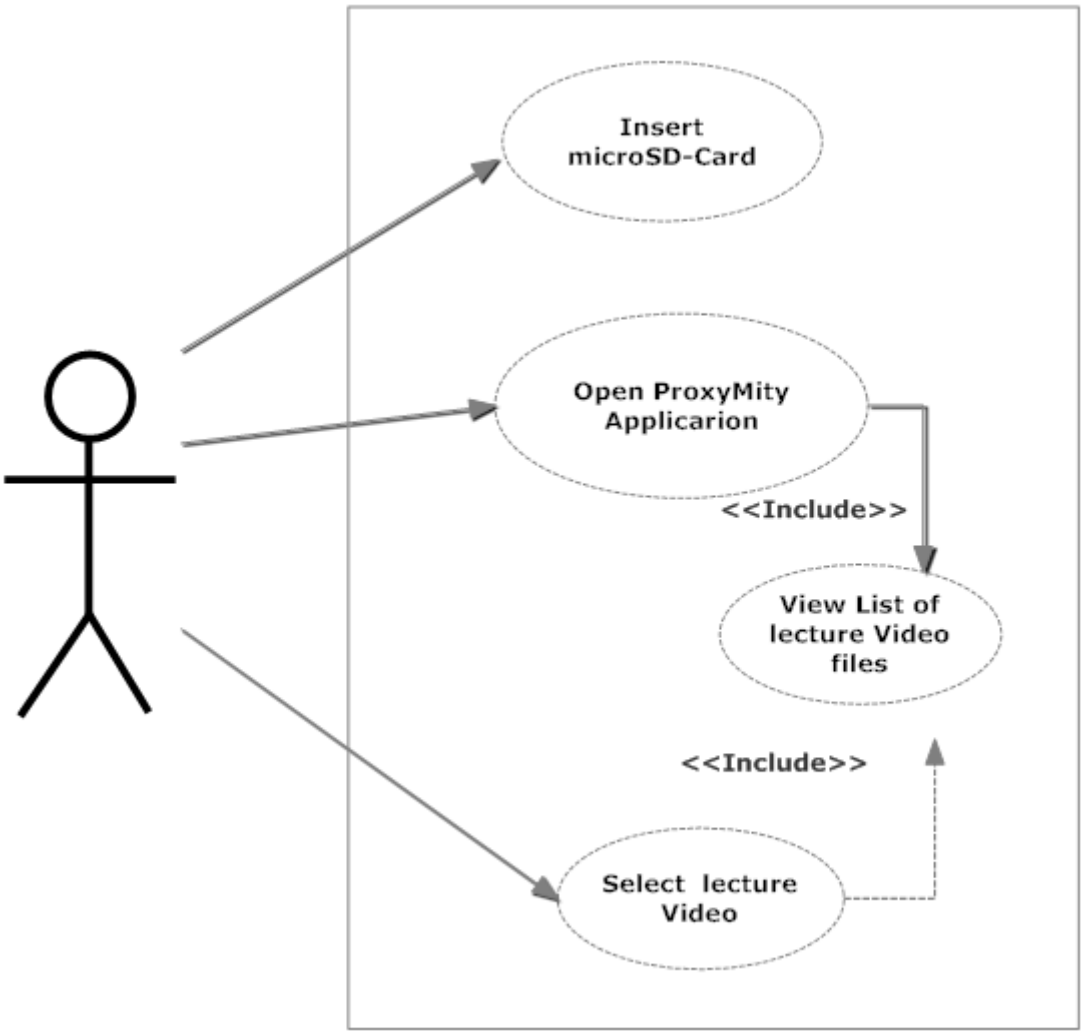


Fig 3.2.2.1(a) Use case diagram to start the lecture video

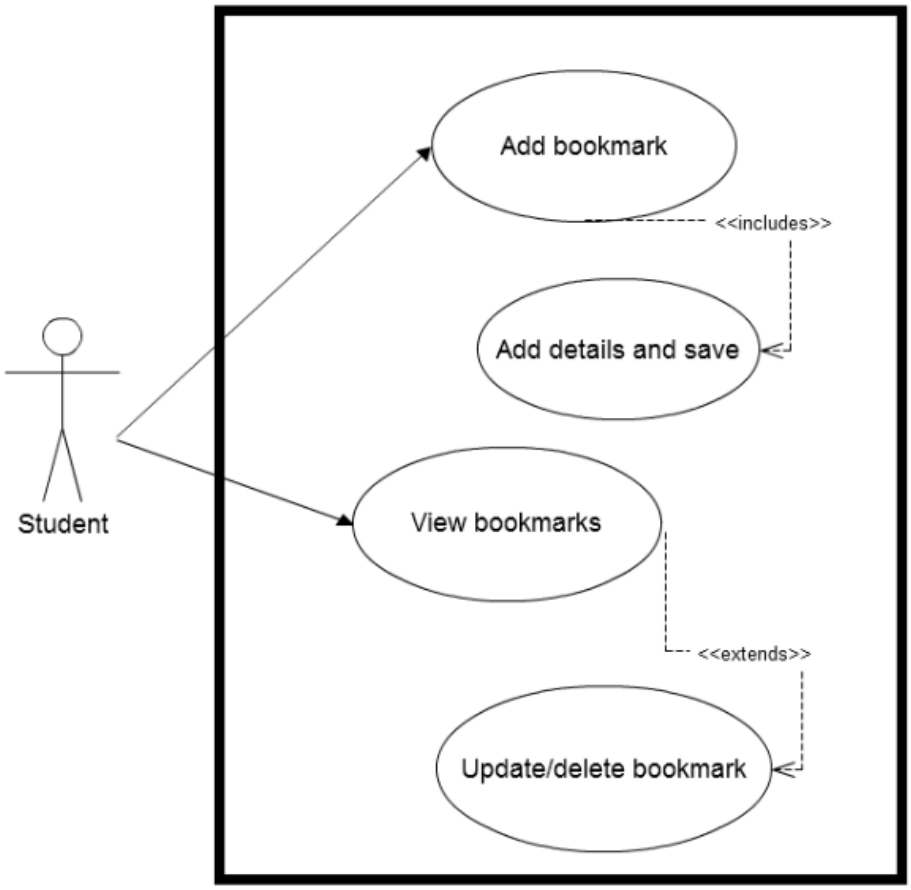


Fig 3.2.1.1(b) Use case diagram for Bookmark

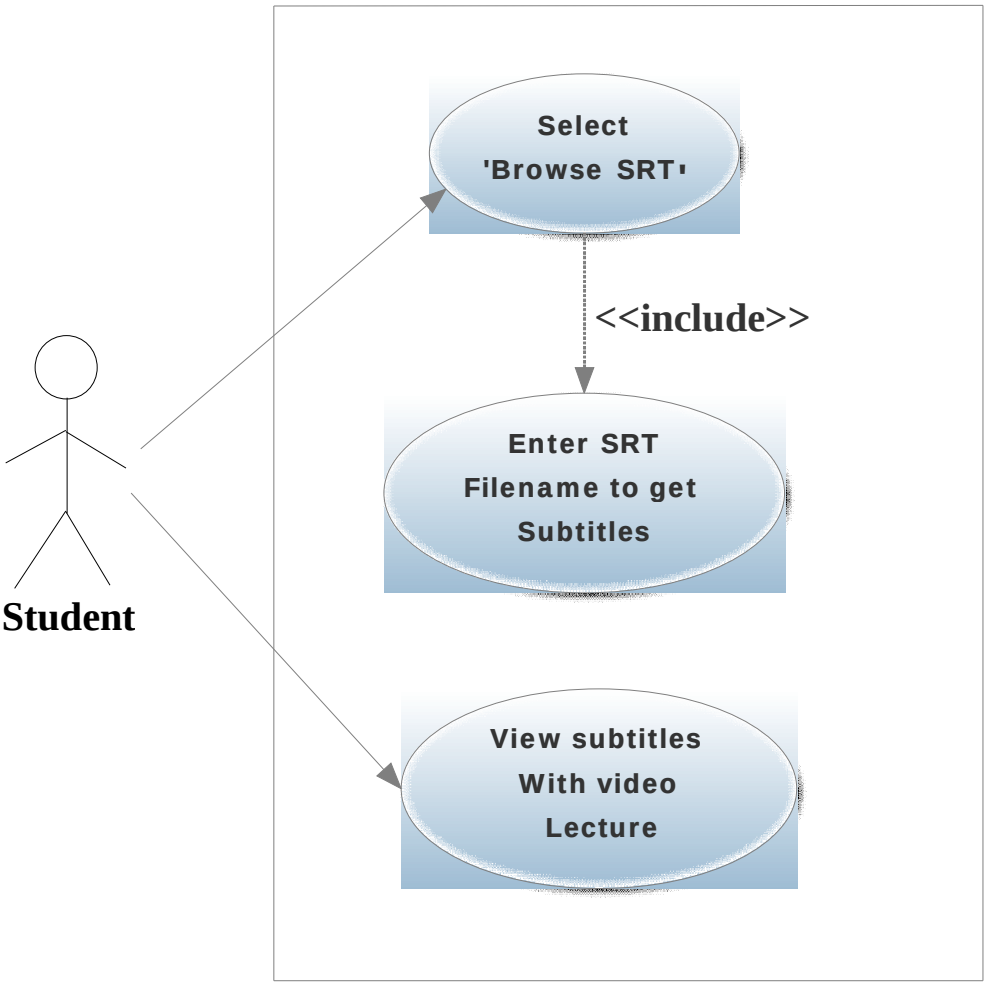


Fig 3.2.2.1(c) Use case diagram for viewing videos with subtitles

Data Flow Diagrams

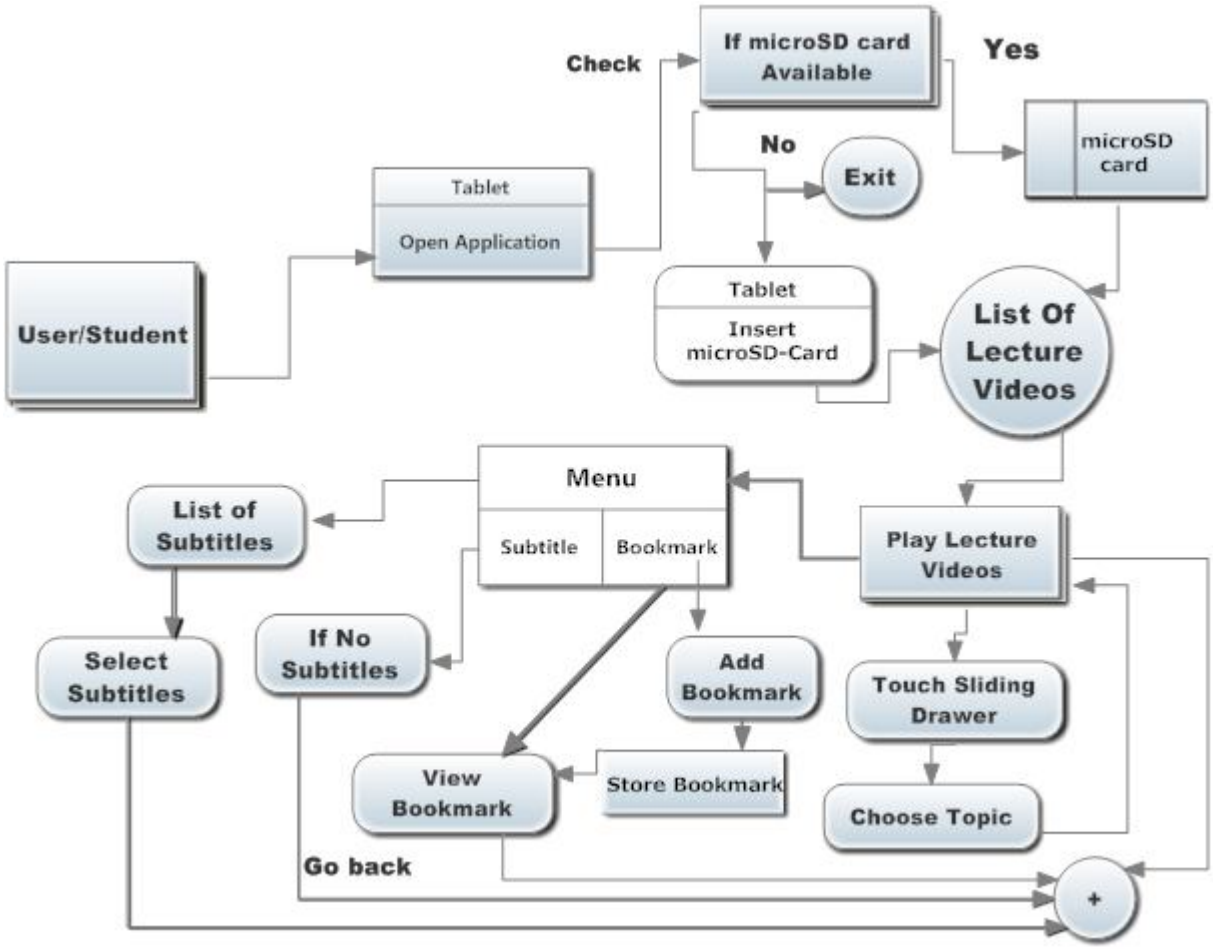


Fig 3.2.2.2 Data Flow through SD-Card

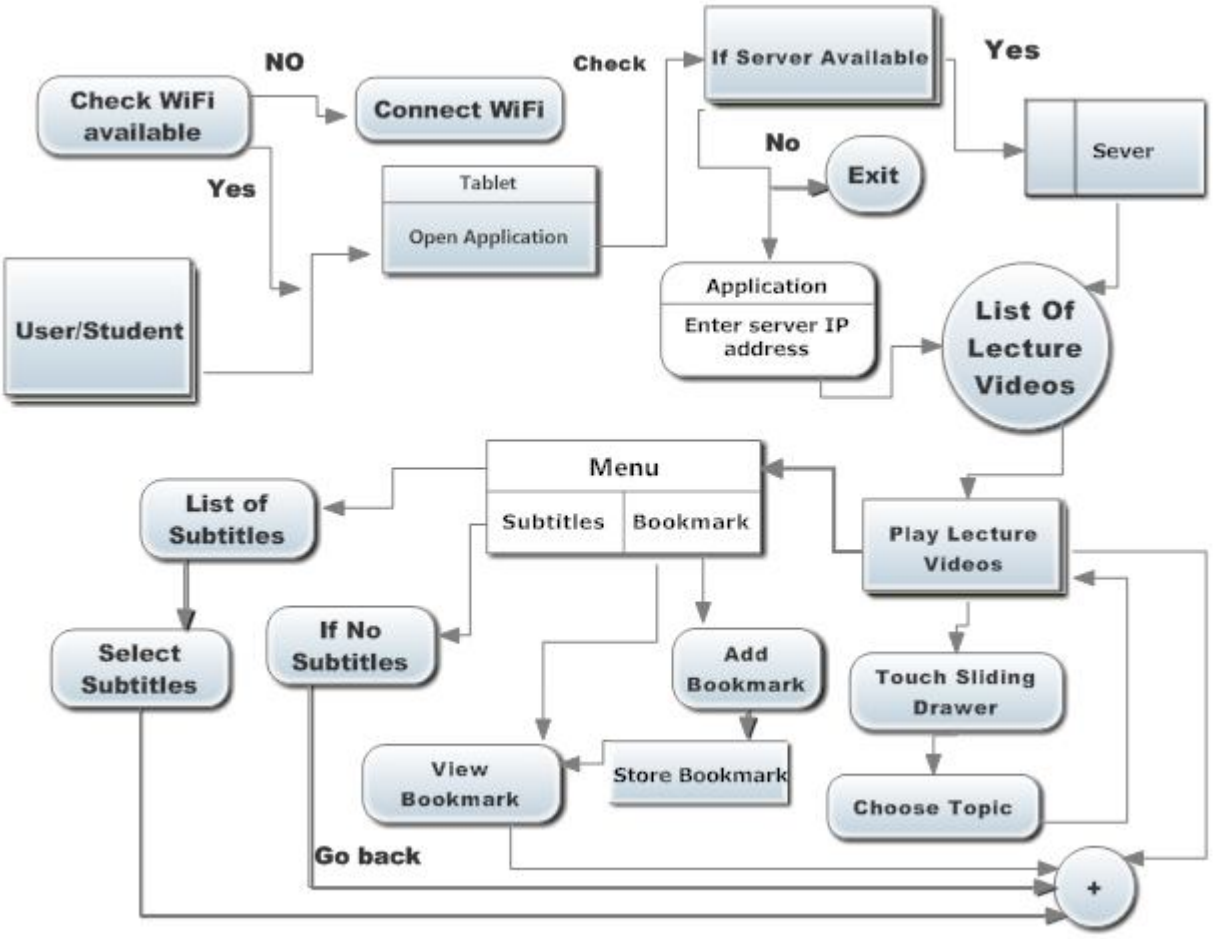


Fig 3.2.2.3 Data Flow through Server

4. Other Non-functional requirements

4.1 Performance requirements

Capacity

proxyMITY shall support published lecture video to each students with microSD-Card and Wi-Fi support.

Safety

The proxyMITY can play any video published lecture with android based player

4.2 System quality attributes

Accessibility

Any graphical user interfaces of the system shall use adequate font size to be usable by persons with limited visual capacity.

Accuracy and precision

- Mp4 and 3gp format of lecture video can be played with proxyMITY tool.
- All indexing of tree structure and tagging of topics is done by subject experts