



Porting of proxyMITY Generalised XML editor GUI

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XMLEditorGUI

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Introduction

- ◆ **Extensible Markup Language (XML): human-readable and machine-readable**
- ◆ **Simplicity, generality, and usability over the Internet.**
- ◆ **Data-exchange between different computer.**
- ◆ **Platform-neutral**
- ◆ **Flexibility**
- ◆ **Manual Typing : Prone to errors**
 - Time consuming**
 - Redundancy**
- ◆ **XMLEditorGUI simplifies the creation, editing, deletion, parsing and manipulation of XML files.**



Background

- ◆ **Module of porting of proxyMITY tool**
- ◆ **Software to create dynamic, rich-media lectures aiding better learning and profound understanding.**
- ◆ **Sharing of lecture videos and synchronization with Slides.**
- ◆ **Creation of XML files : Redundancy and effort consuming**
- ◆ **Added advantage :**
 - Generalized Parsing**
 - Flexibility to create and edit any structure**
 - Portable to desktop**



Problem Statement

- ◆ To provide flexibility to the target users, mainly Administrators, Editors, professors, Students to edit the video lectures
- ◆ To develop a Generalized Android Application that can create, read, parse and edit any kind of XML file at any point of time in a quick and user-friendly way.
- ◆ To allow the users to create new XML files with desired structure.
- ◆ To eliminate the need of manual typing and editing of XML files, and thus reduce the error rate, improve efficiency and save time.
- ◆ To produce a desktop version of the same.



Project Plan

- **Phase 1 :**

- Generalised parsing**

- Parse XML files with any syntactical structure.

- **Phase 2 :**

- Development of an Android GUI for XML manipulation**

- Flexibility to Create, Edit, View, Add and Delete XML tags

- **Phase 3:**

- Manipulation of XML files from desktop application.**



Design Goals

- ♦ **Allow users to choose an existing file using a File Chooser**
- ♦ **Permit the user to create a new XML file and save it in desired location.**
- ♦ **Parse the XML file's of any syntactical structure.**
- ♦ **Store the structure and content of an XML file in a set of array lists.**
- ♦ **Add tags to the existing XML file, maintaining the same syntax and structure.**
- ♦ **View the contents and structure of an XML file in Android GUI.**
- ♦ **Delete existing tags and entries from an XML file.**
- ♦ **Edit the XML tags and entries and update it to the XML file.**
- ♦ **Write an XML file using the data from the array list**
- ♦ **Create a unique tag.**
- ♦ **Create new tags with options:Children/ Attribute &Children**



Datastructures

Data

Set of *ArrayLists* holding the content and structure of the parsed XML file

elementsList

ArrayList of Strings containing all the tag names that have either an attribute or a node value.

arrayList

ArrayList of *ArrayList* storing the values of the tags sequentially. The index of the tags' values matches the index of the tag themselves in *elementsList*.

parentsList

ArrayList of Strings that contains all the tag names which have child nodes.

childTags

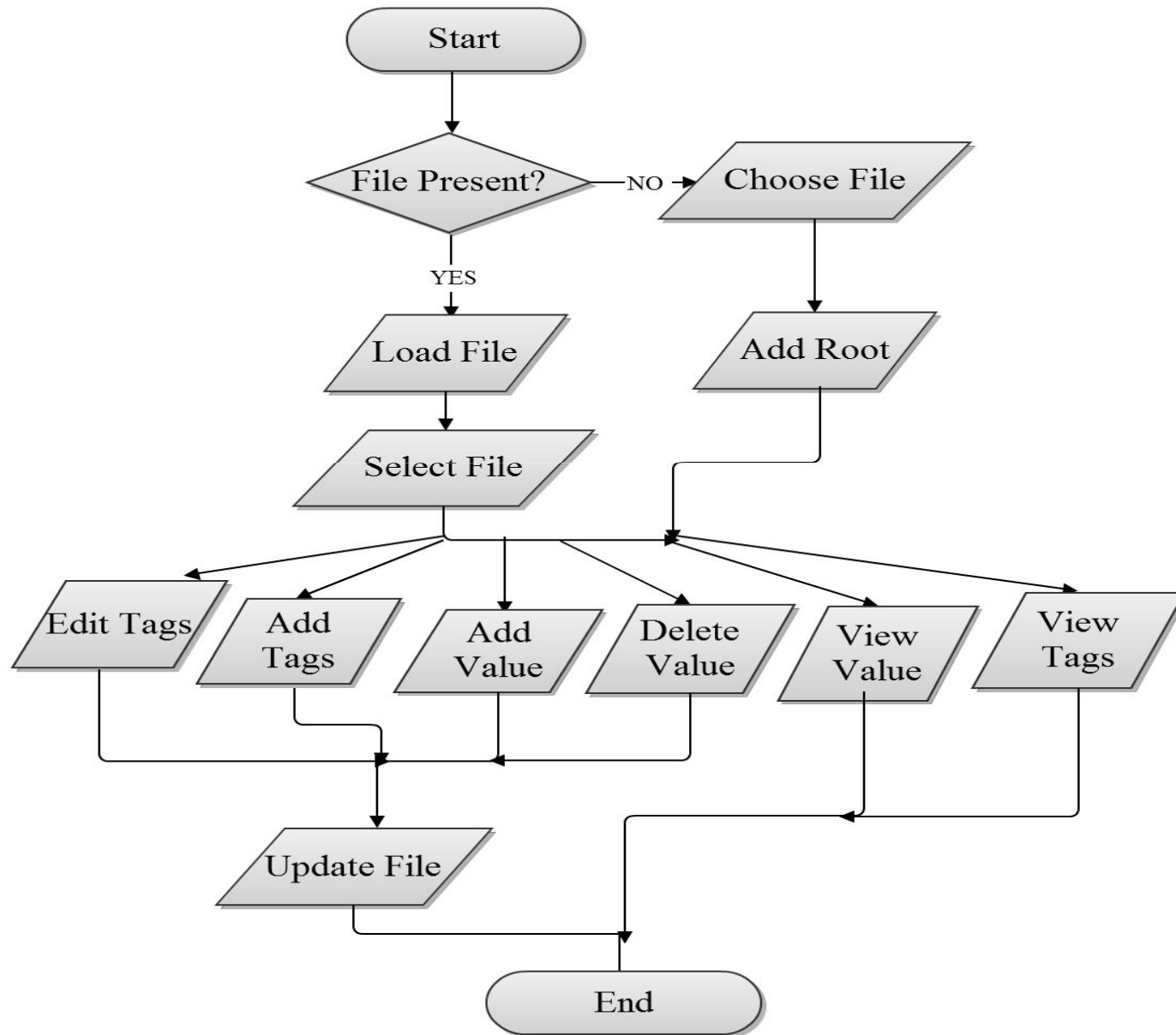
ArrayList of *Arraylist* that stores the names of all the child tags corresponding to the tag in the *parentsList* of same index.

attributeIndex

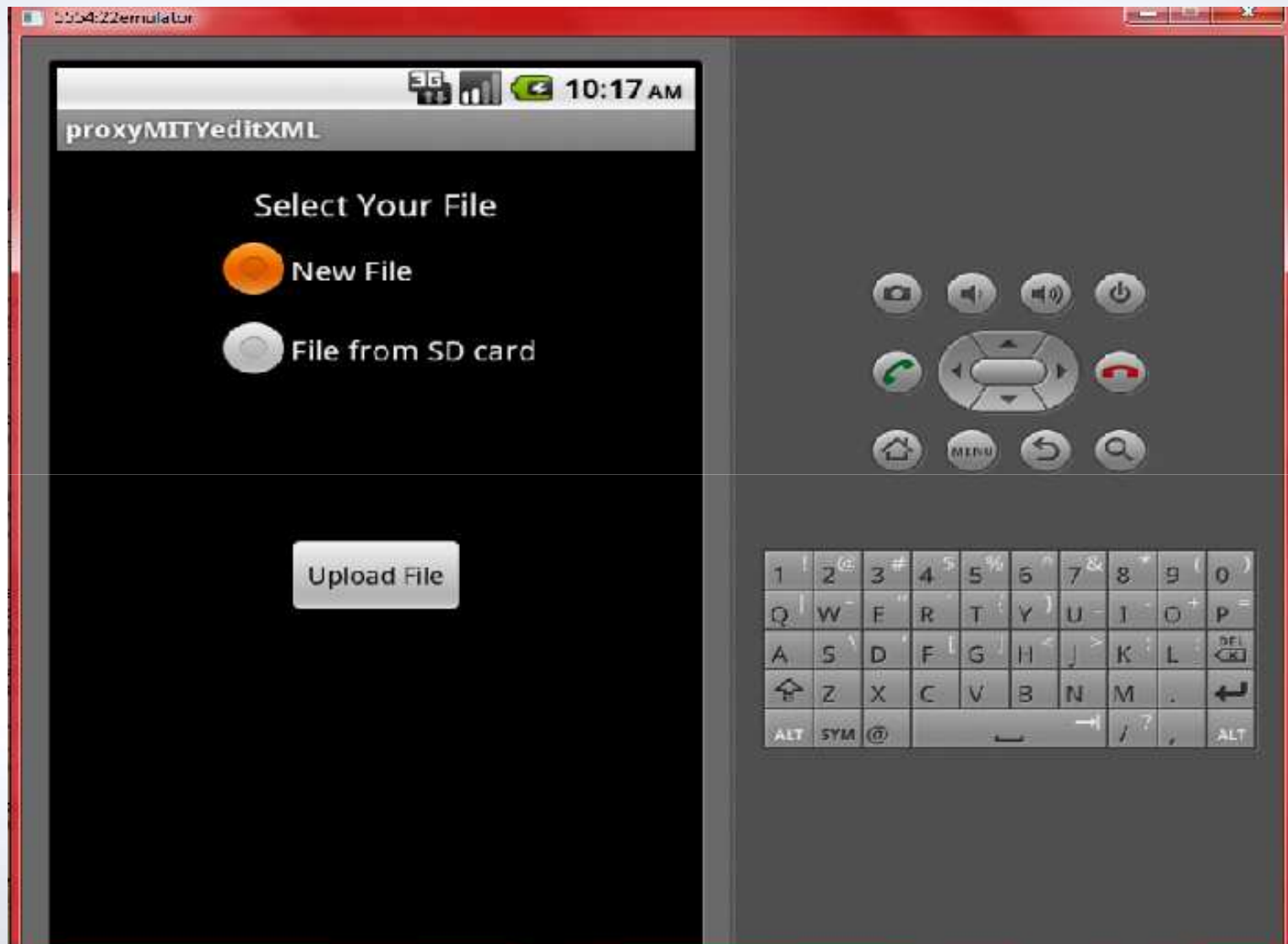
ArrayList of Integer that stores the index (within the *elementsList*) of the tags that have attributes. This is used to distinguish the tags that have node value and those that have attributes at the time of file writing.



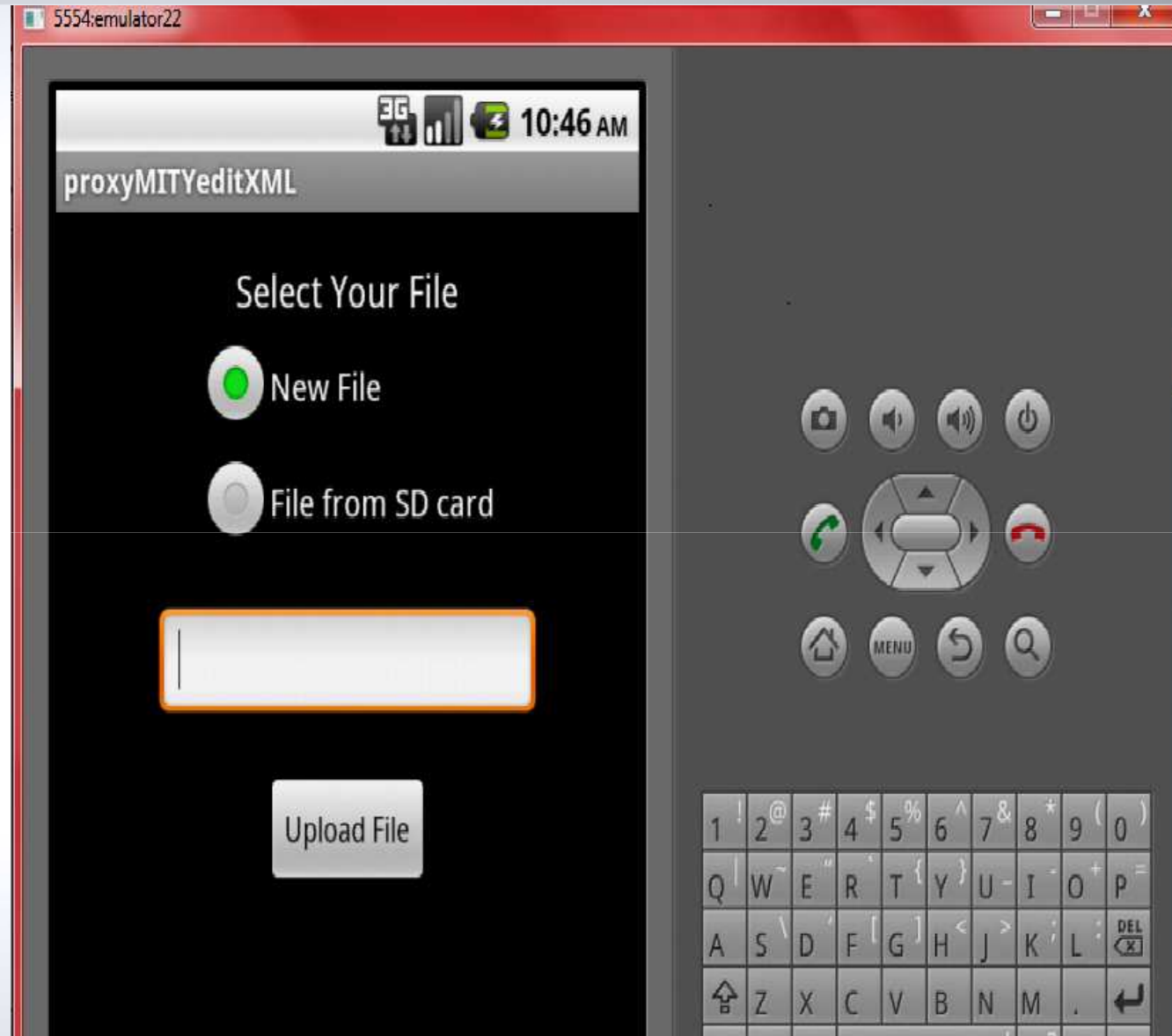
Flow Diagram



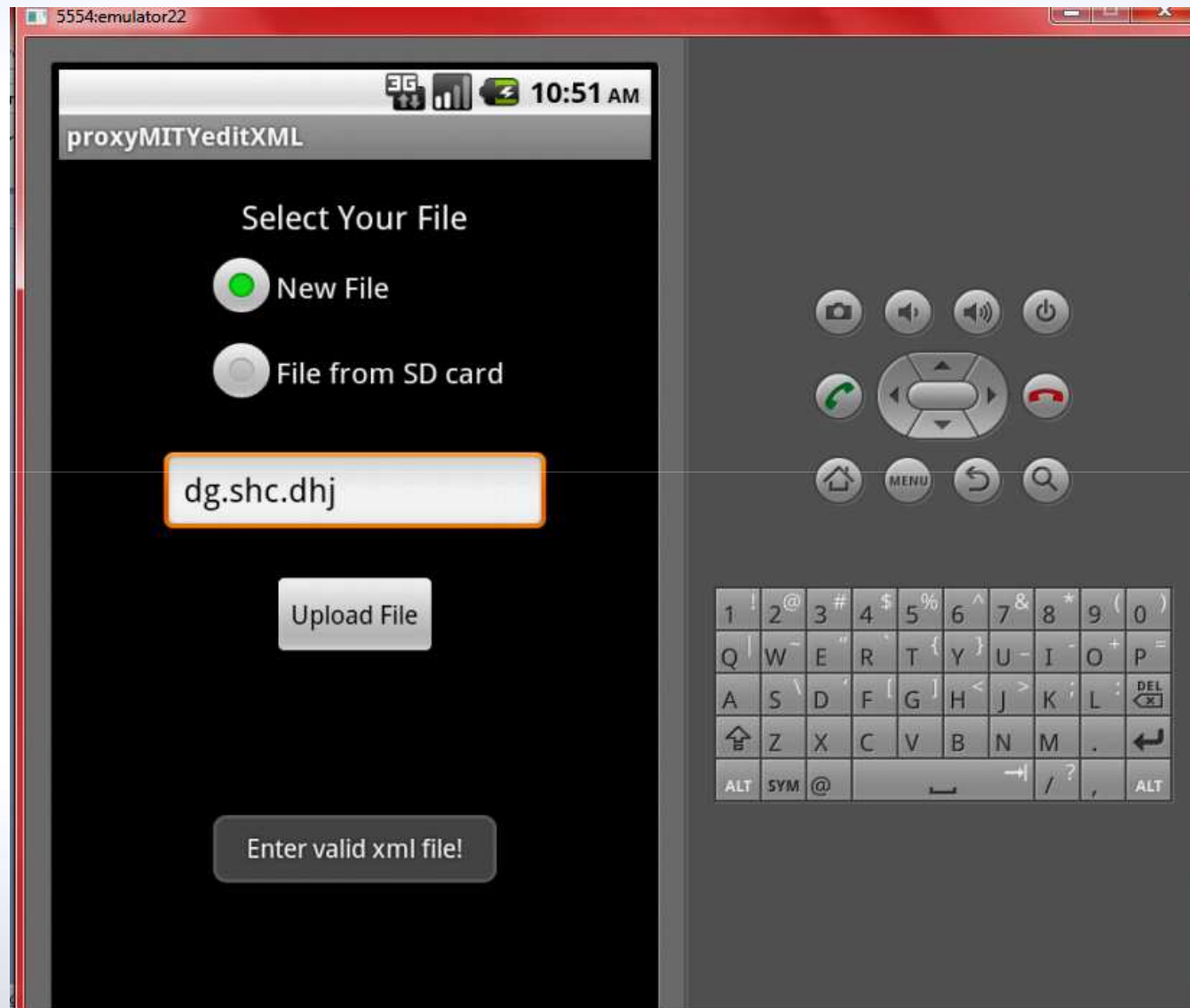
Demo : File Chooser



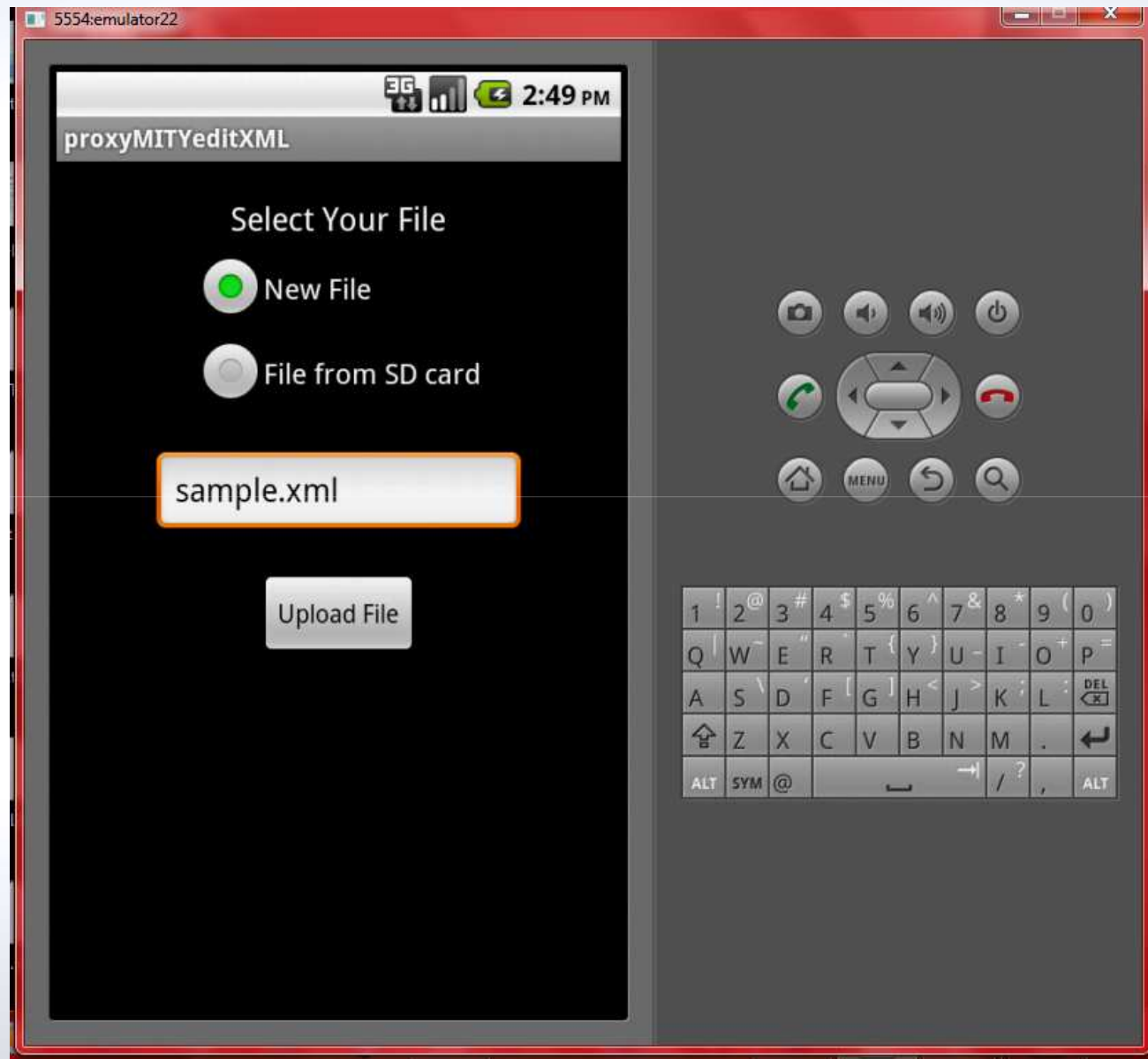
Demo : File Chooser (New file)



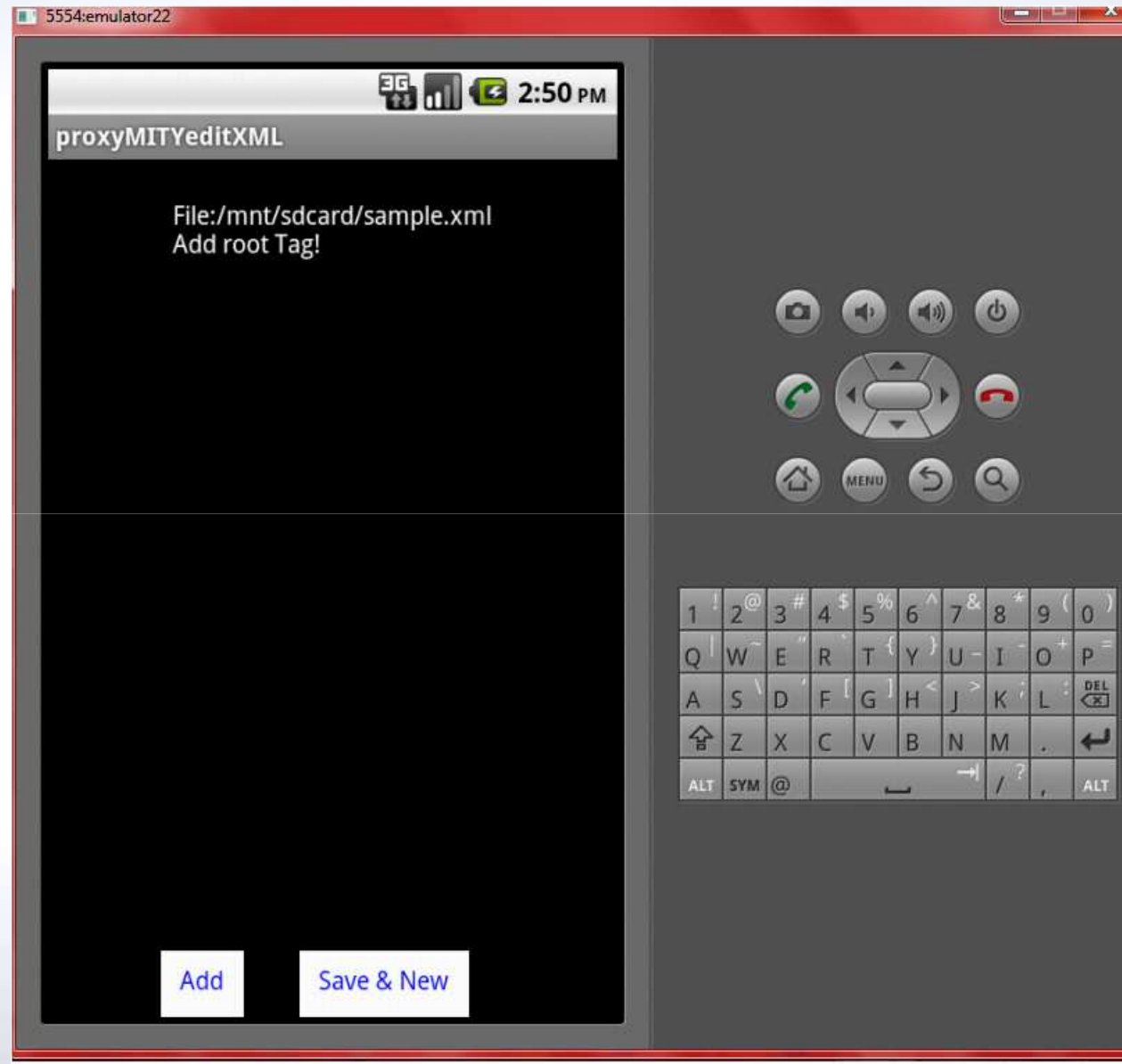
Demo : File Chooser (Validation)



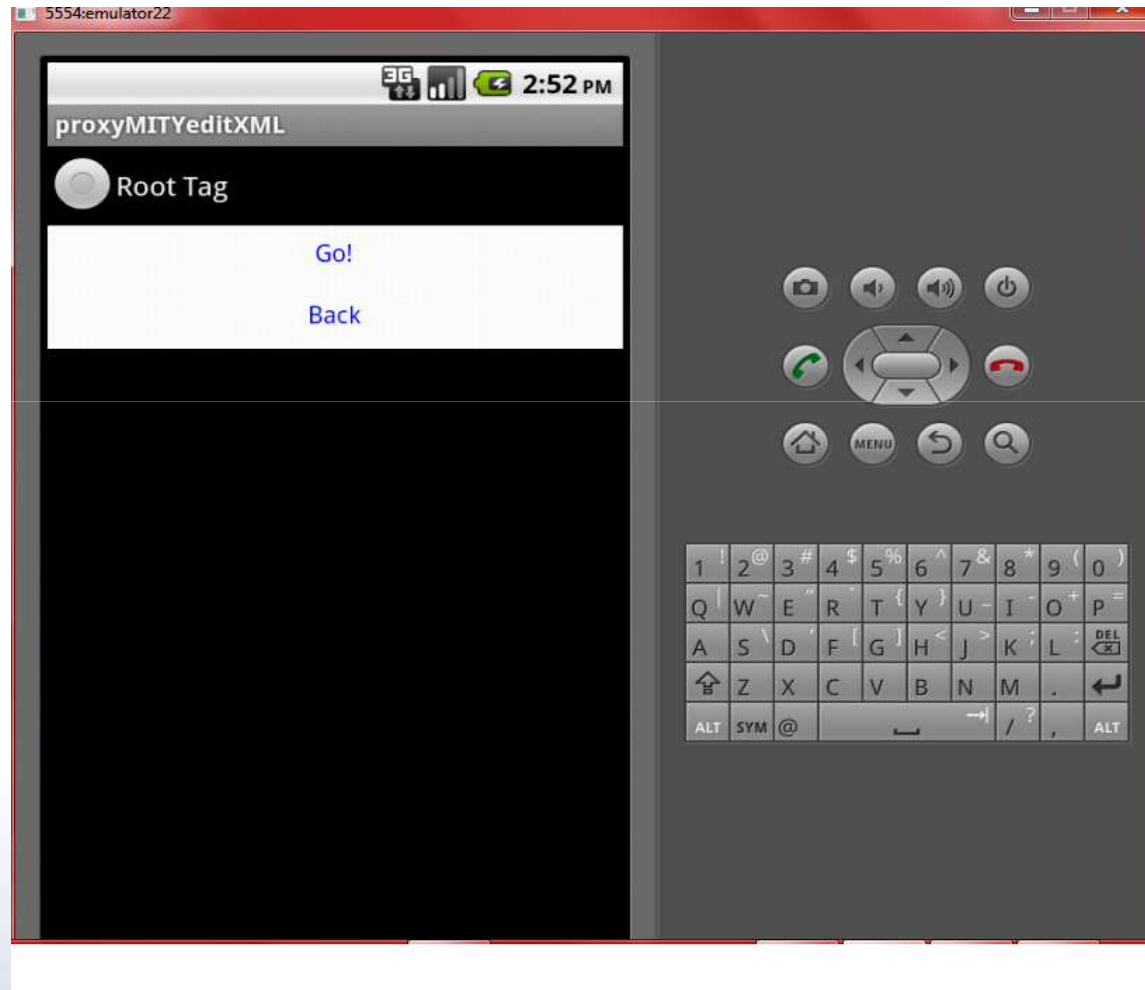
Demo : File Chooser



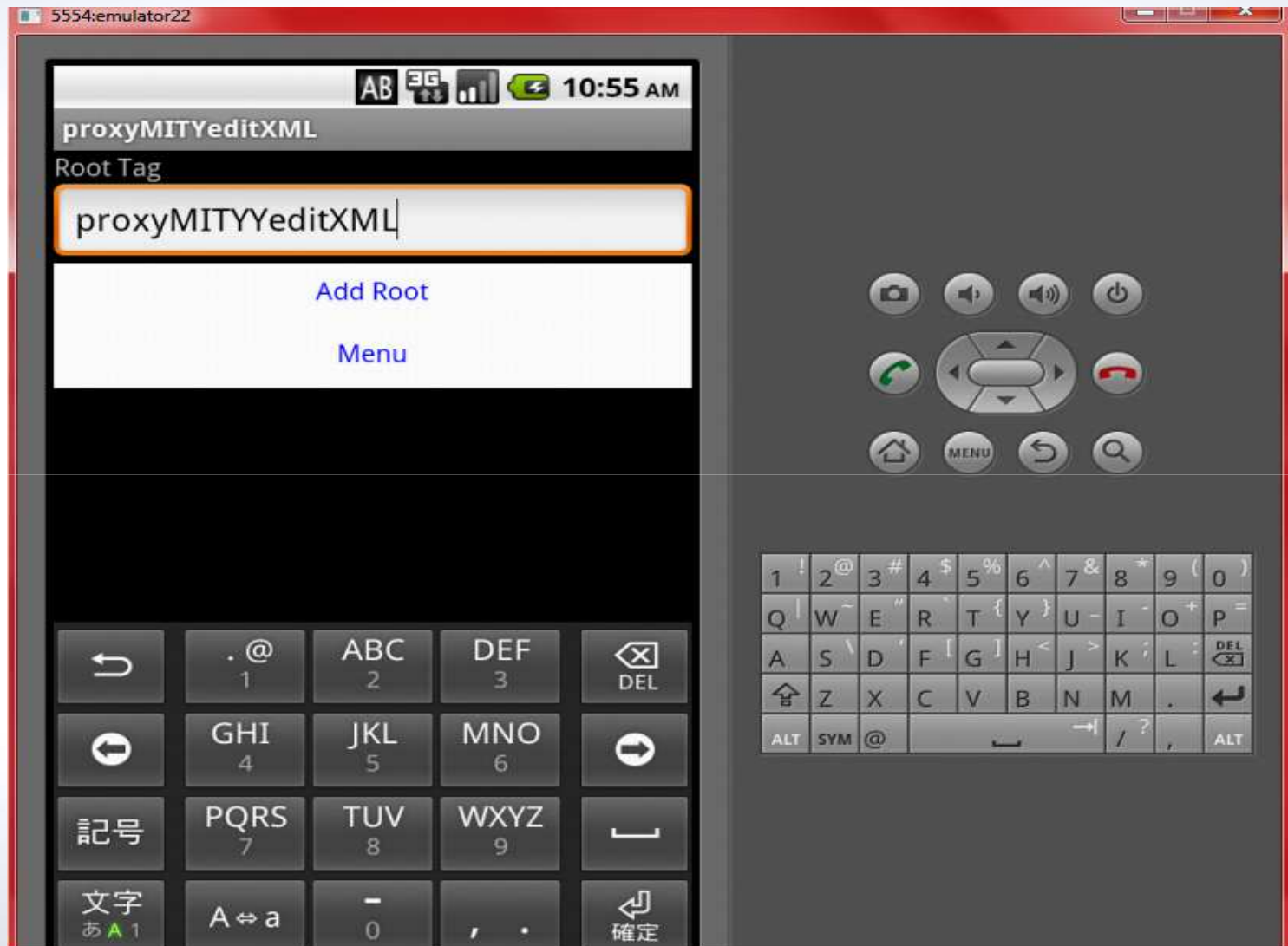
Demo : Options for new file



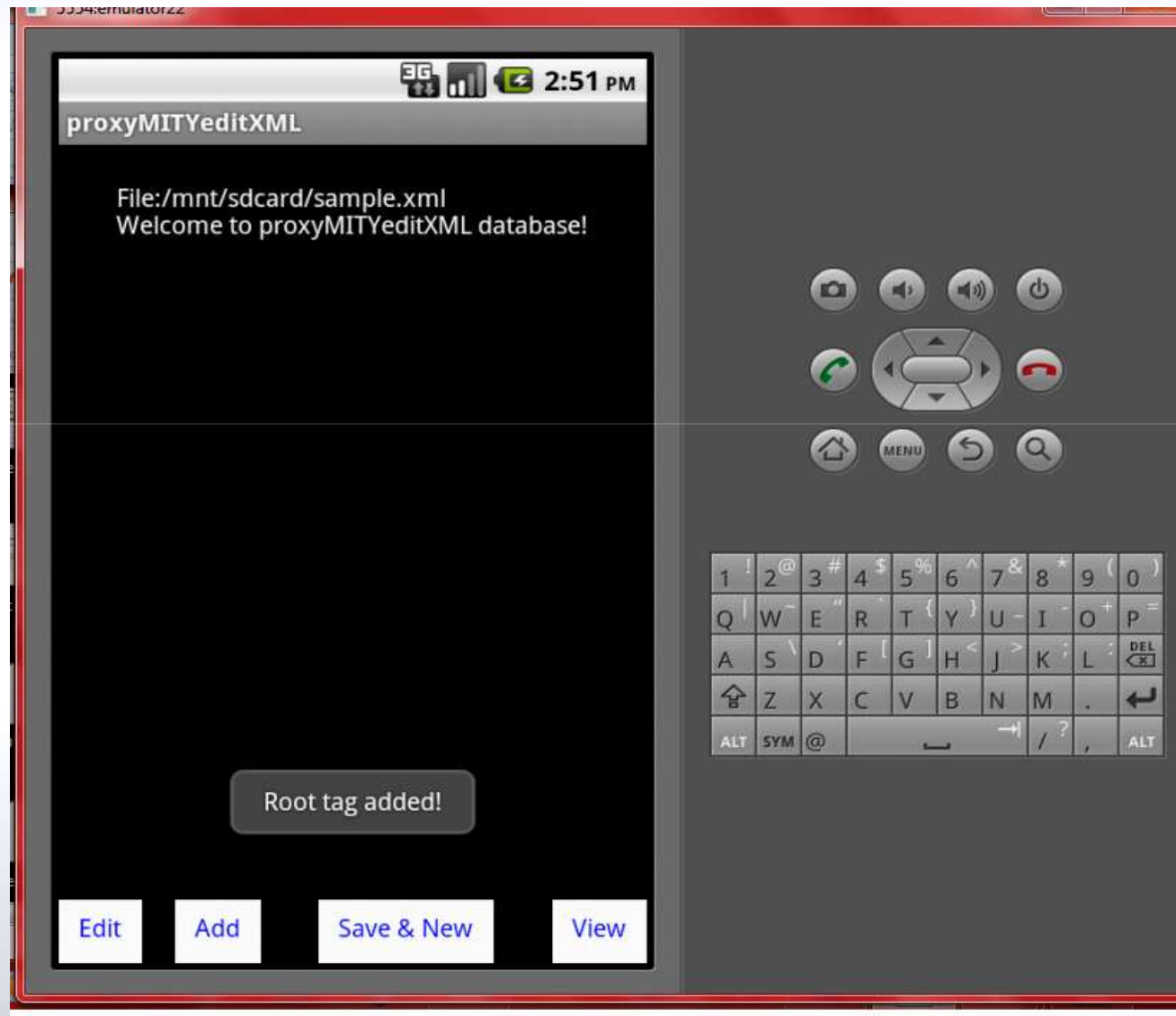
Demo : Add rot tag



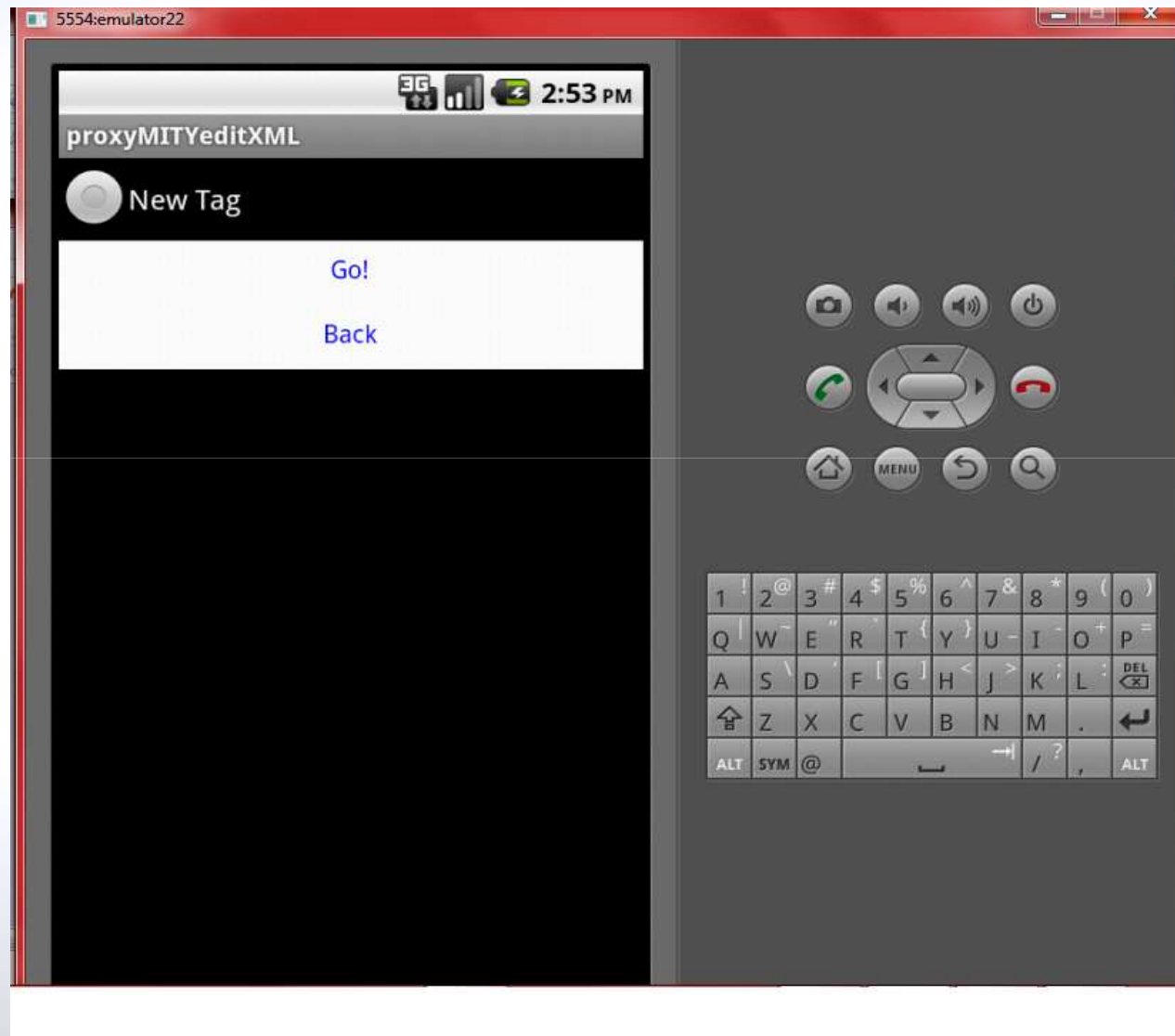
Demo : Add root tag



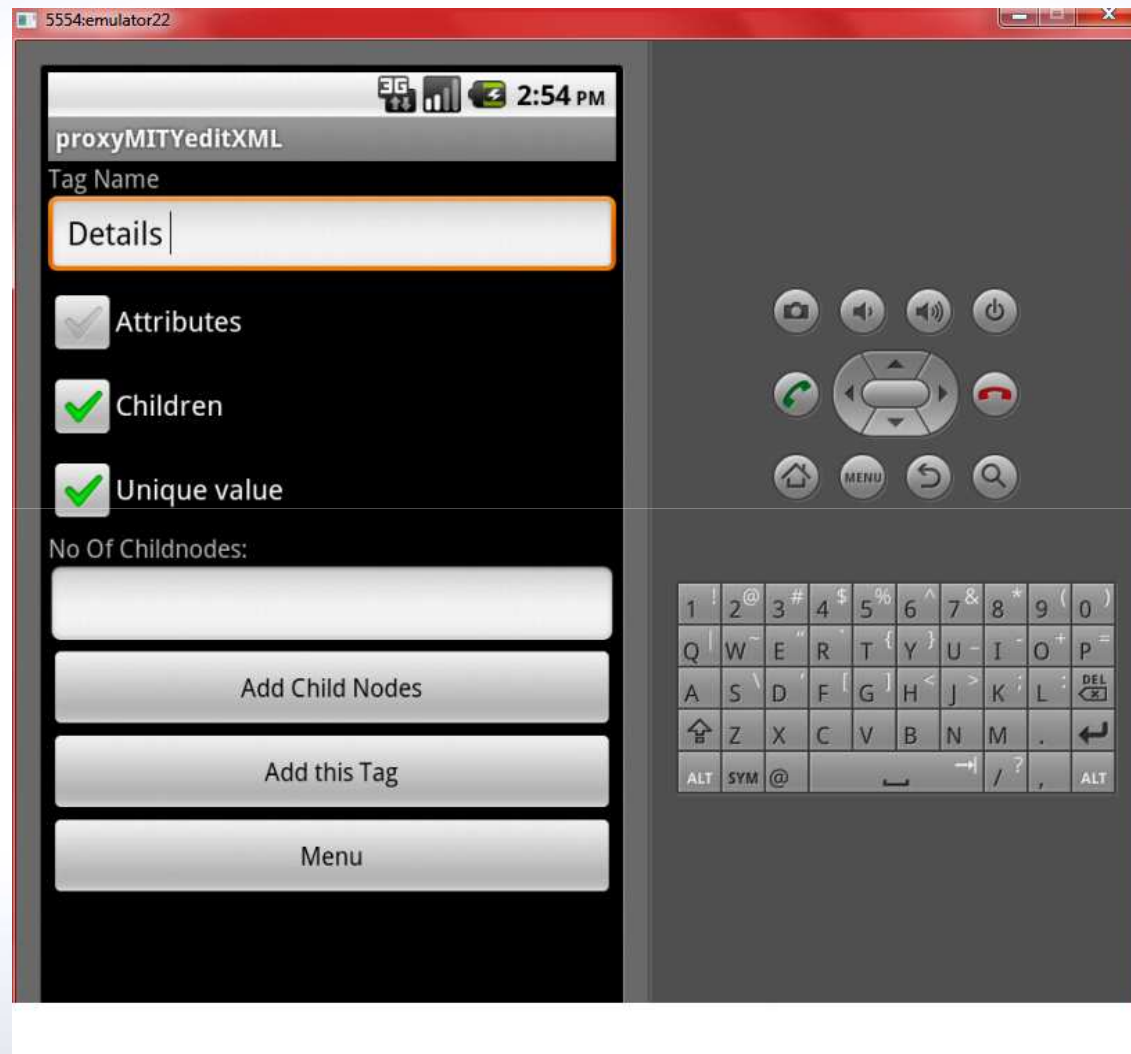
Demo : Add root tag



Demo : Add new tag



Demo : Add new unique tag



Demo : Validation of child count

3G 2:55 PM

proxyMITYeditXML

Tag Name

Details

☒ Attributes

☒ Children

☒ Unique value

No Of Childnodes:

0

Add Child Nodes

Add this Tag

Empty count!

Navigation and Control Buttons:

- Camera, Mute, Speaker, Power
- Call, Navigation (Up, Down, Left, Right), End Call
- Home, MENU, Back, Search

QWERTY Keyboard:

1 !	2 @	3 #	4 \$	5 %	6 ^	7 &	8 *	9 (	0)
Q	W	E	R	T	Y	U	I	O	P
A	S	D	F	G	H	J	K	L	DEL
⌵	Z	X	C	V	B	N	M	.	↵
ALT	SYM	@	←				/ ?	,	ALT



Demo : Validation of child count

3G 2:55 PM

proxyMITYeditXML

Tag Name

Details

☒ Attributes

☒ Children

☒ Unique value

No Of Childnodes:

hgjrxbd

Add Child Nodes

Add this Tag

Invalid count!

Navigation and Input Controls:

- Camera, Mute, Speaker, Power
- Call, Navigation (Up, Down, Left, Right), End Call
- Home, MENU, Back, Search

1	2	3	4	5	6	7	8	9	0
Q	W	E	R	T	Y	U	I	O	P
A	S	D	F	G	H	J	K	L	DEL
⌵	Z	X	C	V	B	N	M	.	↵
ALT	SYM	@				/	?	,	ALT



Demo : Validation (Empty fields)

proxyMITYeditXML

Tag Name

Details

☒ Attributes

☒ Children

☒ Unique value

Video sql.mp4

Speaker Child value 2

Add this Tag

Not Added!!

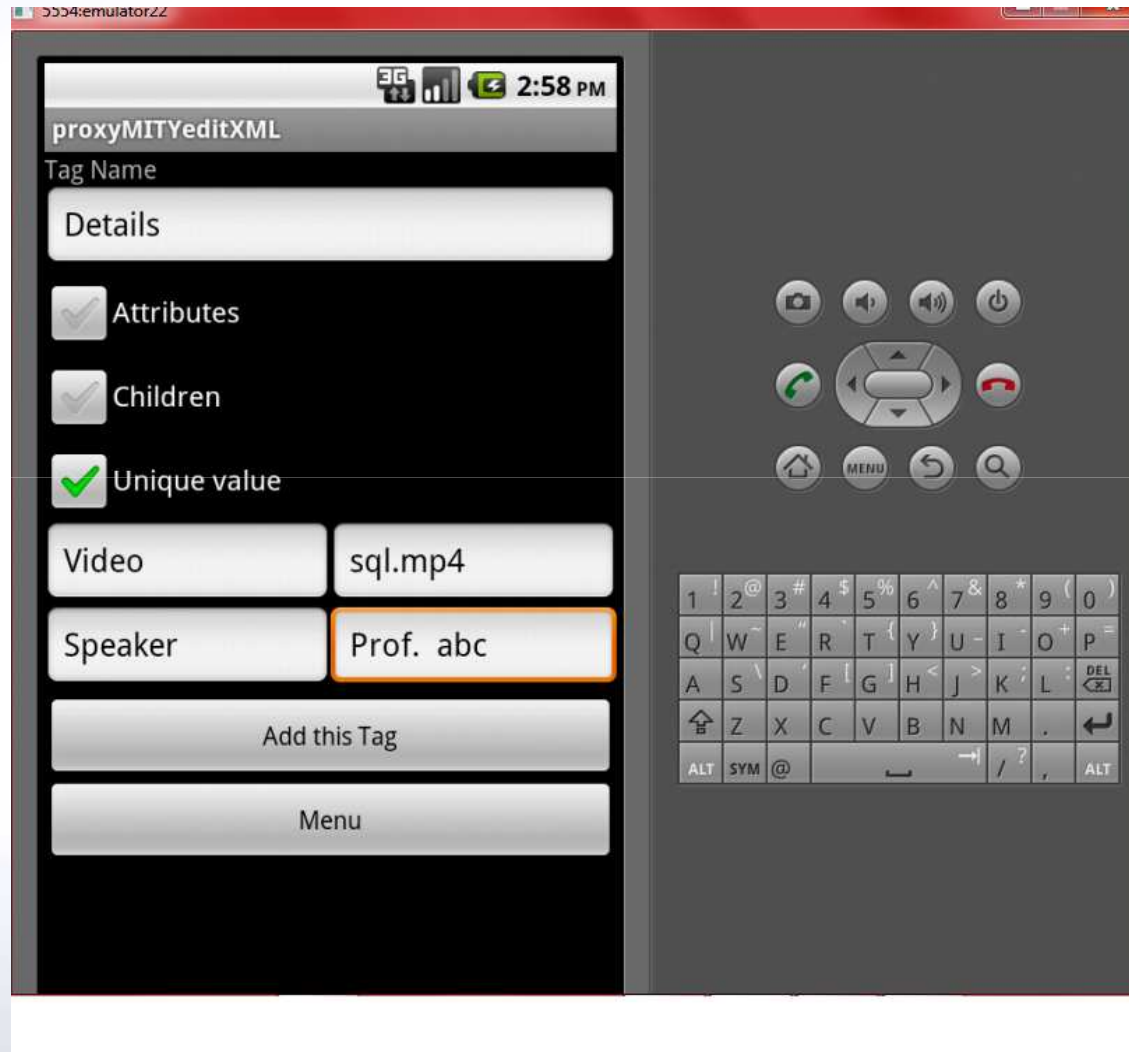
3G 2:58 PM

Camera, Microphone, Speaker, Power, Home, MENU, Back, Search, Call, End Call

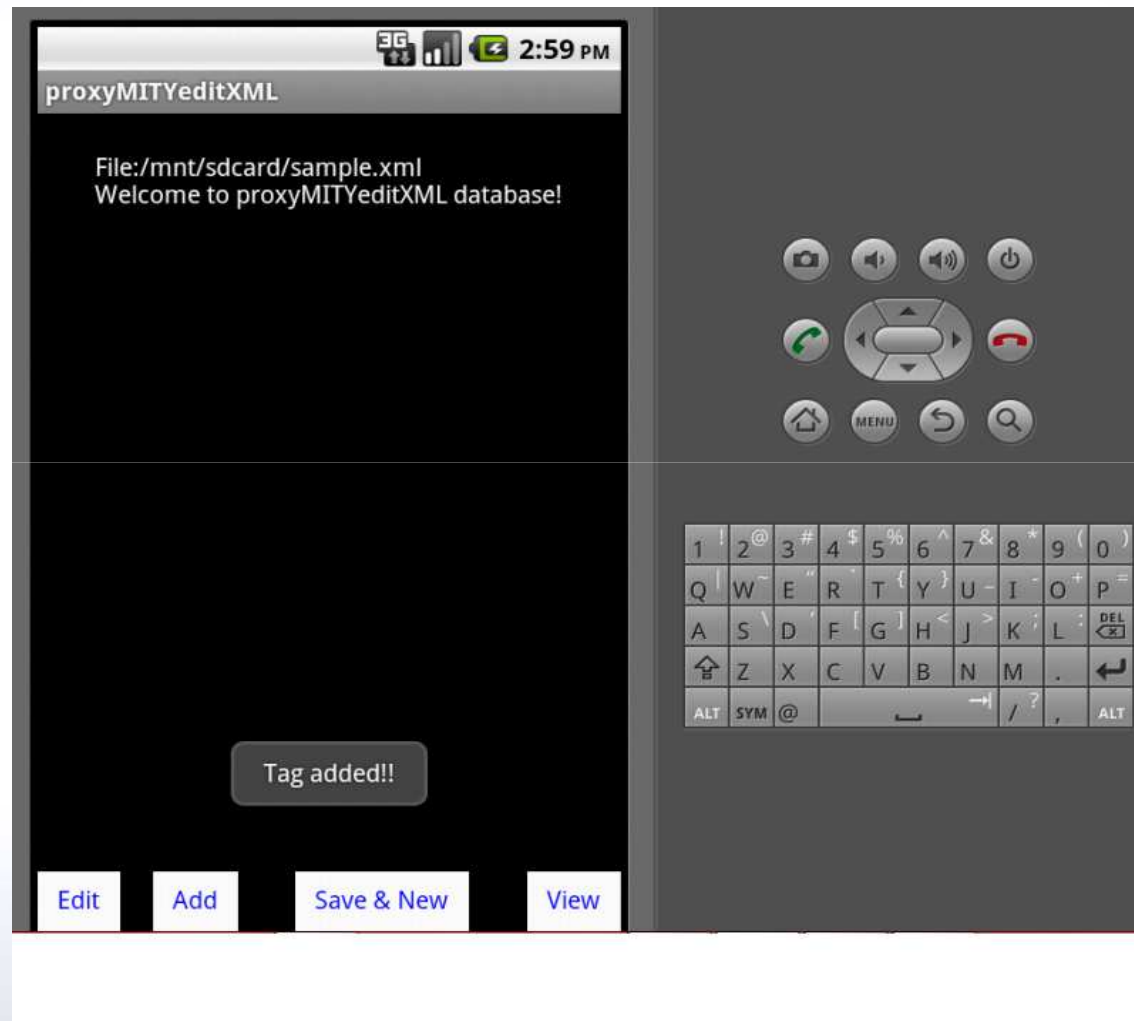
1	2	@	3	#	4	\$	5	%	6	^	7	&	8	*	9	(	0
Q	W	E	R	T	{	Y	U	-	I	O	+	P	=				
A	S	\	D	F	[	G	H	<	J	>	K	L	:	DEL			
Home	Z	X	C	V	B	N	M	.									
ALT	SYM	@															ALT



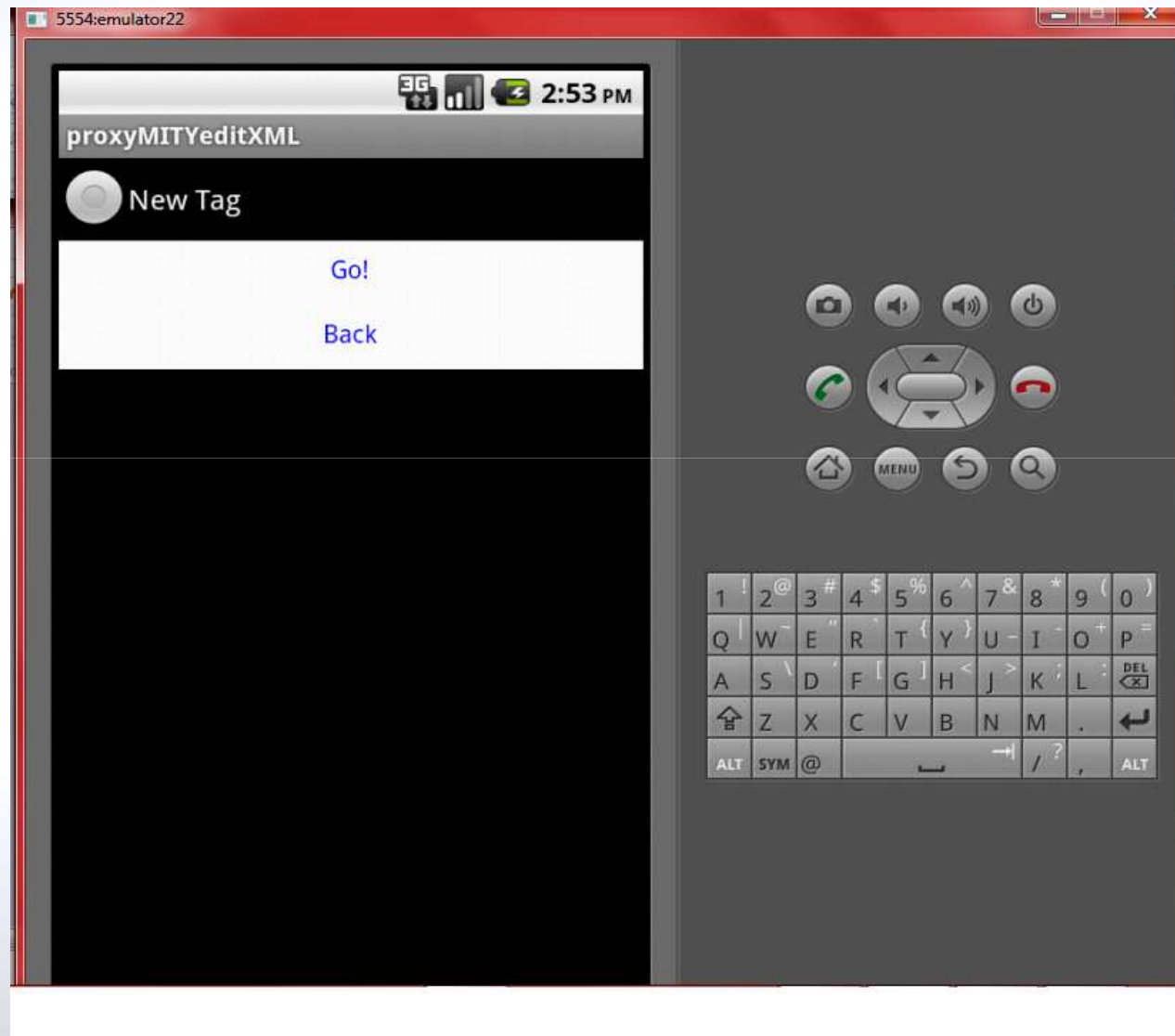
Demo : Add new unique tag with two children



Demo : Options after adding a tag



Demo : Adding new tag



Demo : Adding new tag

5554:emulator22

3G 10:57 AM

proxyMITYeditXML

Tag Name

tag1

☒ Attributes

☒ Children

☒ Unique value

Attribute value:

No Of Childnodes:

Add Child Nodes

Add this Tag

Menu

Camera, Speaker, Microphone, Power, Phone, Navigation, End Call, Home, MENU, Back, Search

1	2 @	3 #	4 \$	5 %	6 ^	7 &	8 *	9 (	0)
Q	W	E	R	T	{	Y	U	-	O +
A	S	D	F	G	H	<	J	>	K ;
ALT	SYM	@				/ ?	,		ALT



Demo : Adding new tag with one child

5554:emulator22

3G 10:58 AM

proxyMITYeditXML

Tag Name

tag1

☒ Attributes

☒ Children

☐ Unique value

Attribute value:

attr

child1 value1

Add this Tag

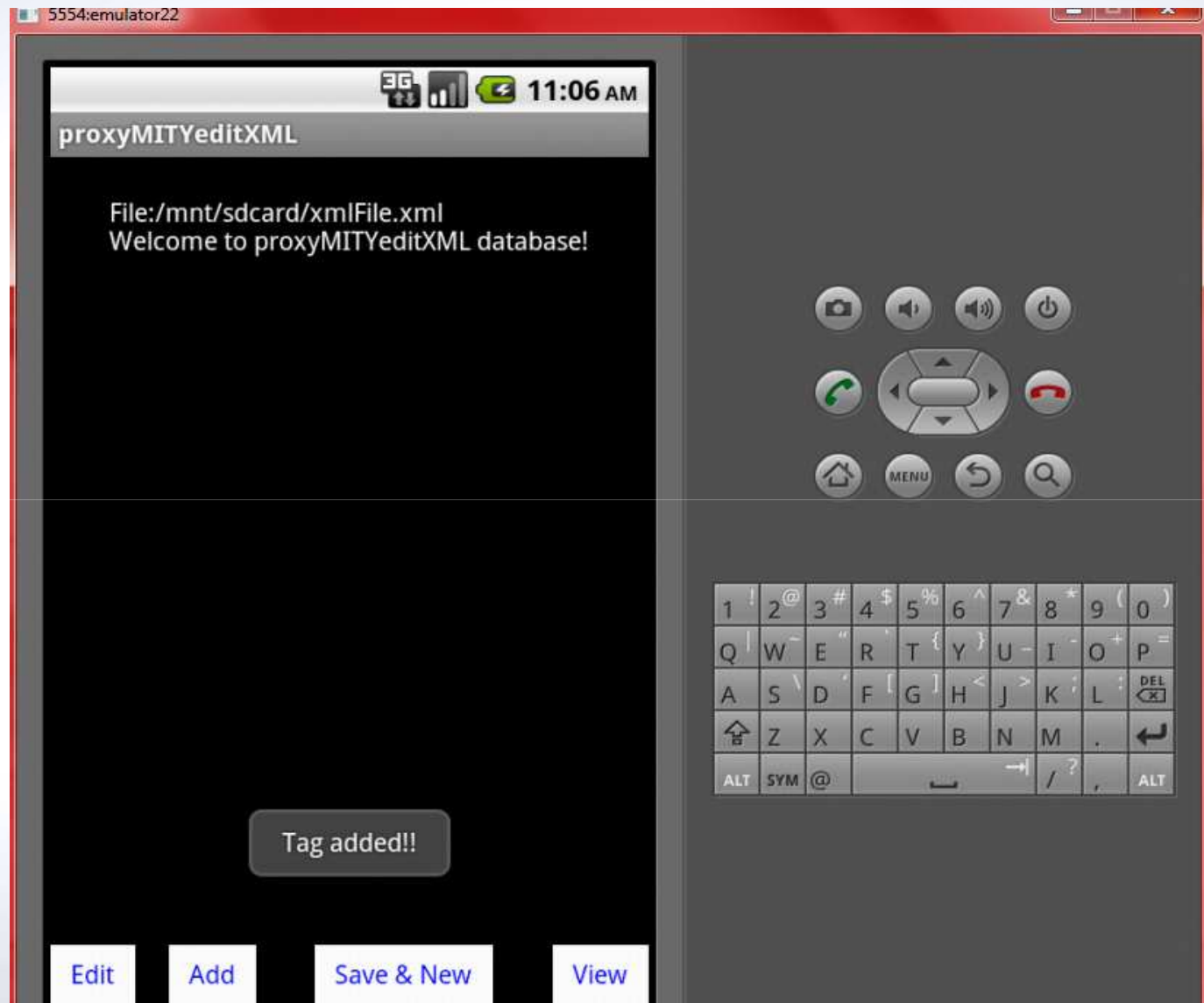
Menu

Navigation controls: Camera, Mute, Volume, Power, Call, D-Pad, End Call, Home, Menu, Back, Search.

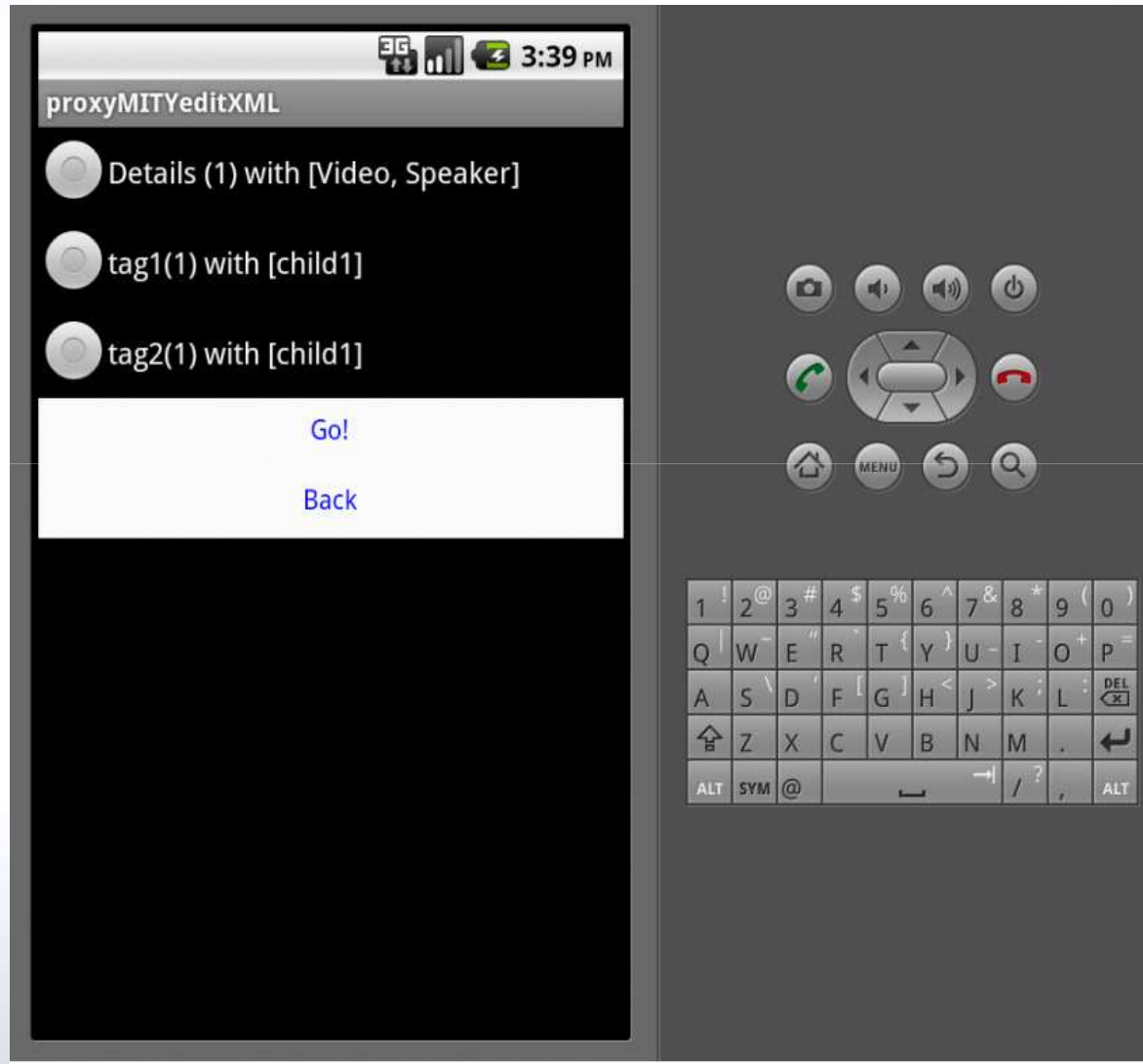
1	2@	3#	4\$	5%	6^	7&	8*	9(	0)
Q	W	E	R	T	Y	U	I	O	P=
A	S	D	F	G	H	J	K	L	DEL
⌵	Z	X	C	V	B	N	M	.	↩
ALT	SYM	@			→	/	?	,	ALT



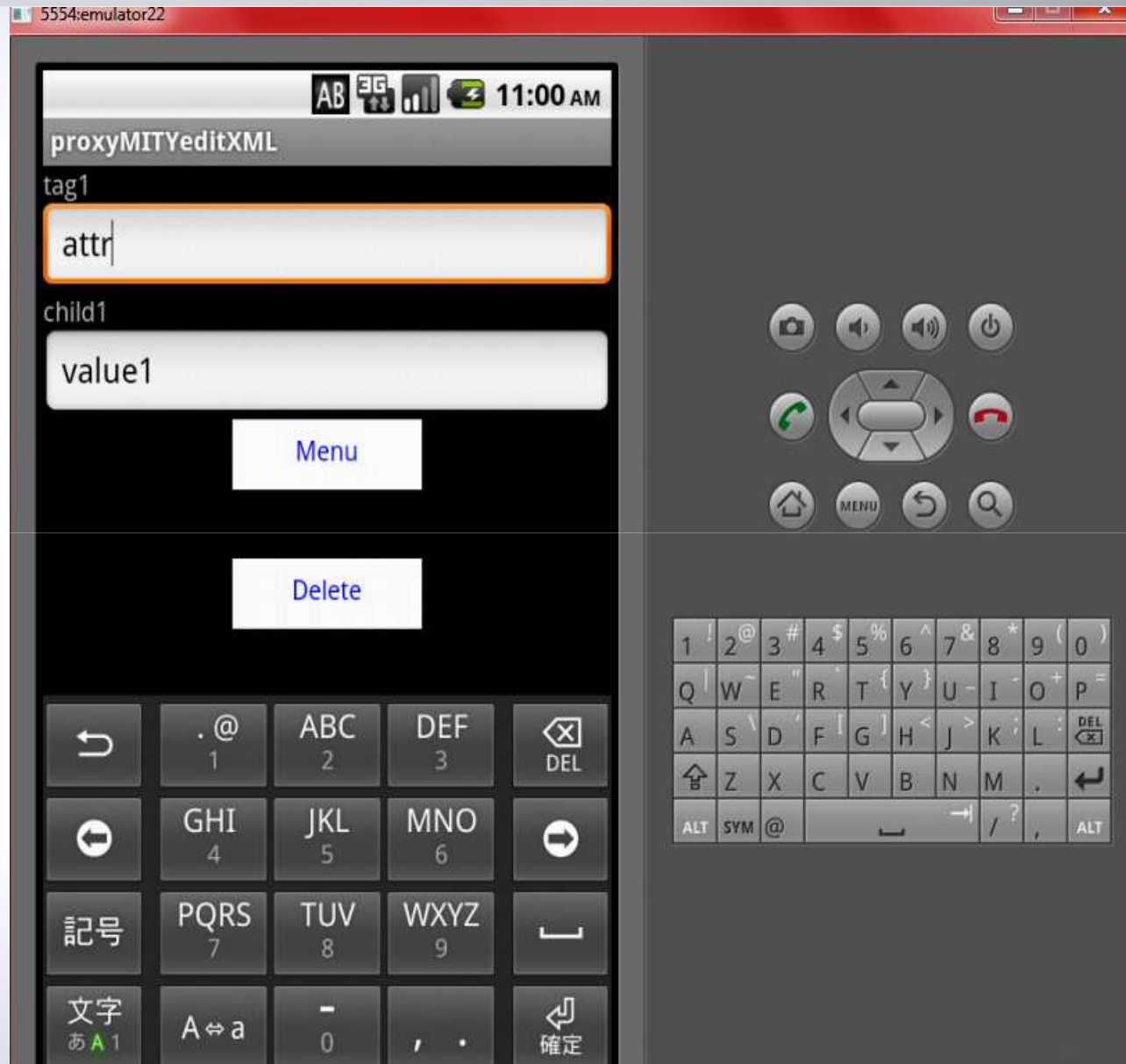
Demo : Adding new tag



Demo : View and Edit



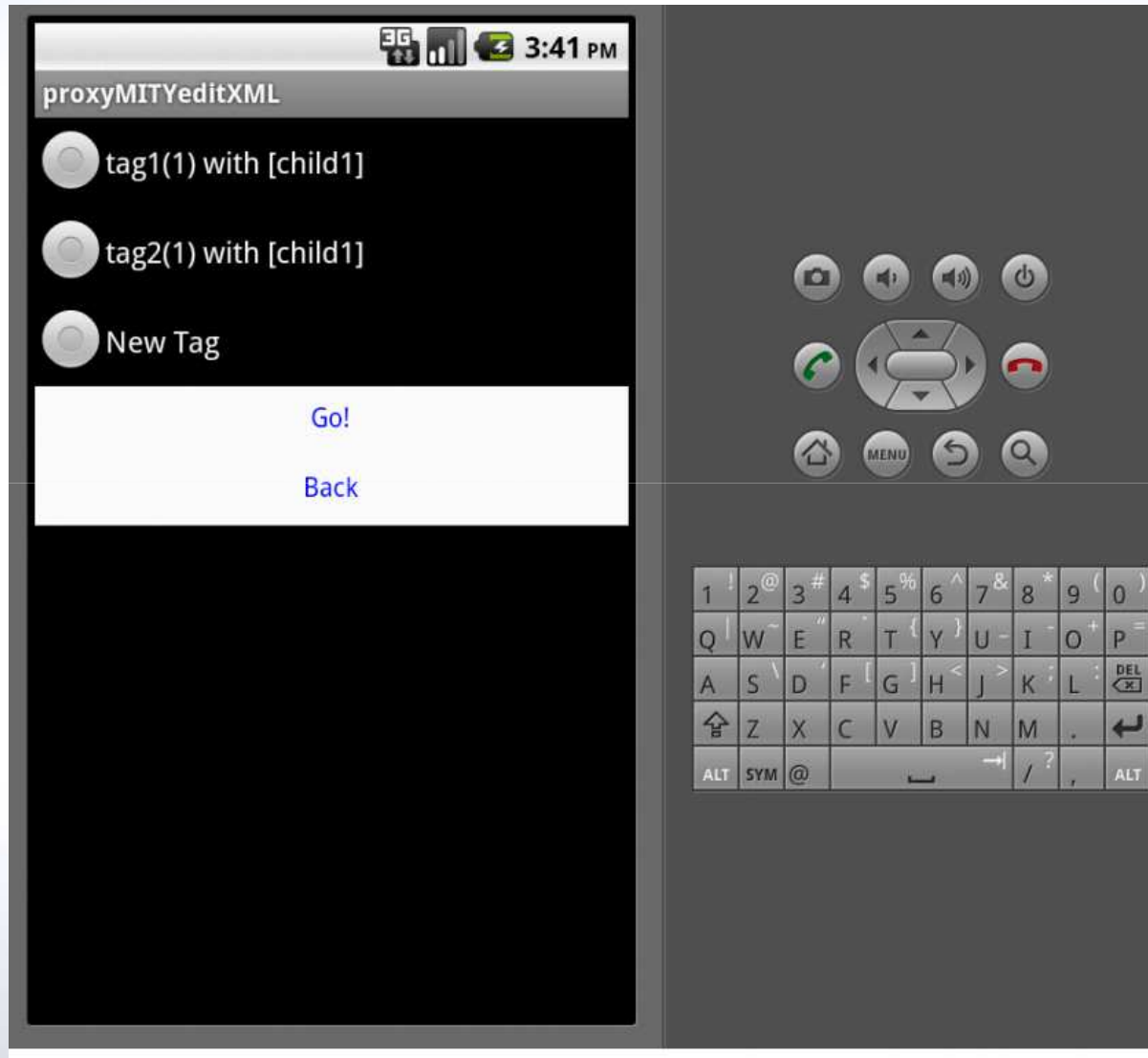
Demo : Edit tag



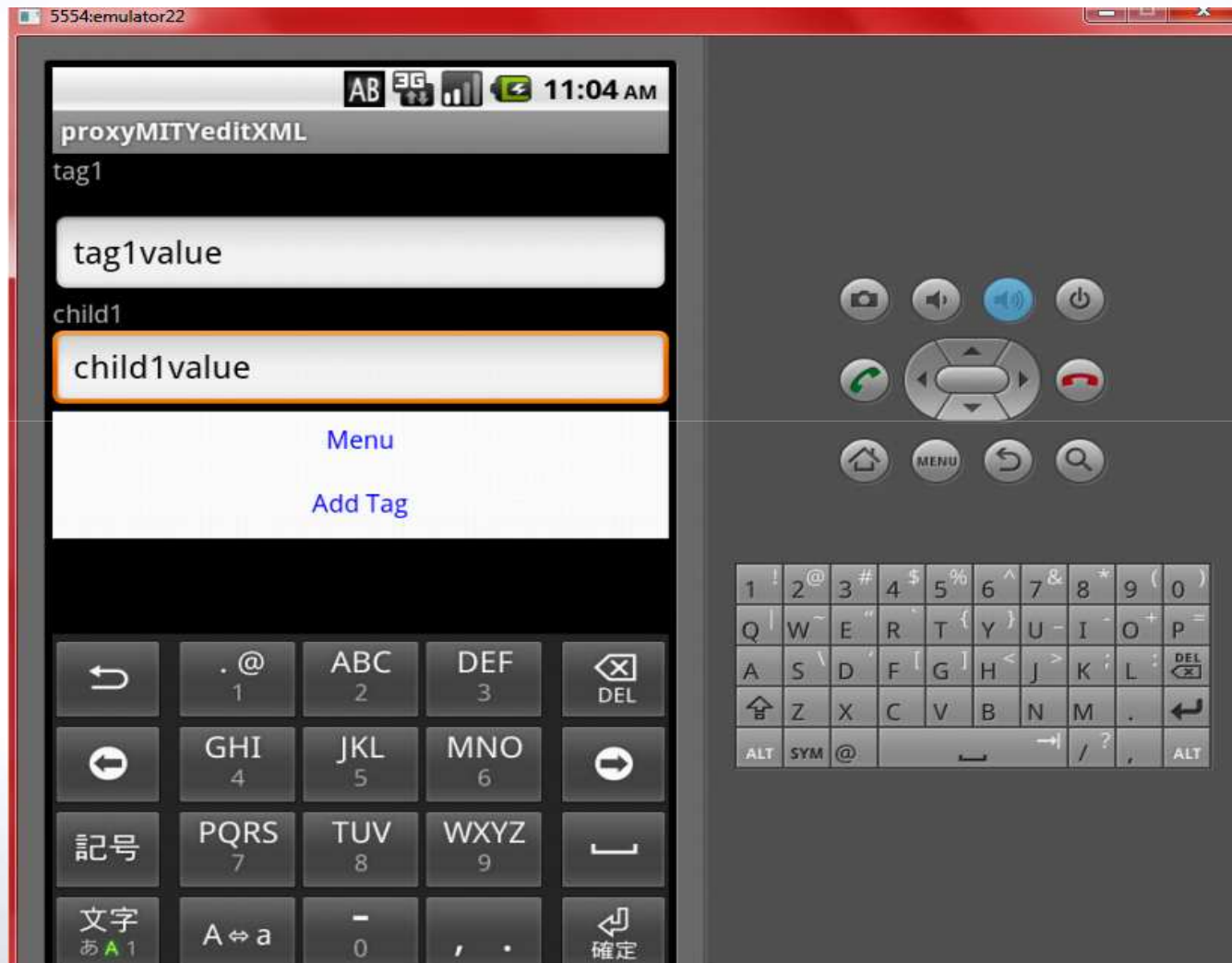
Demo : View tag



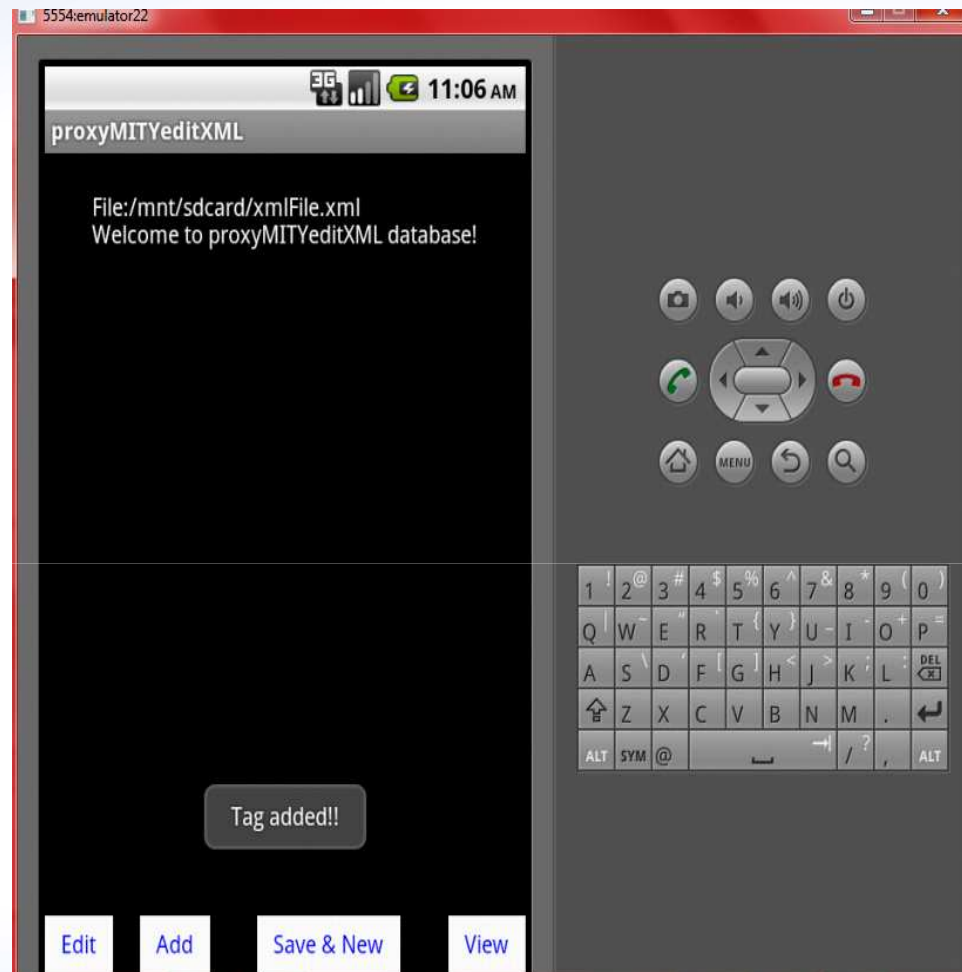
Demo : Add



Demo : Add values to existing tag



Demo : Adding values to existing tag



Demo : Created file

```
<?xml version="1.0" encoding="UTF-8"?>

<proxyMITYeditXML>

<Details_DONOTREPEAT>
<Video>sql.mp4</Video>
<Speaker>Prof. abc</Speaker>
</Details_DONOTREPEAT>

<tag1 name="attr">
<child1>value1</child1>
</tag1>

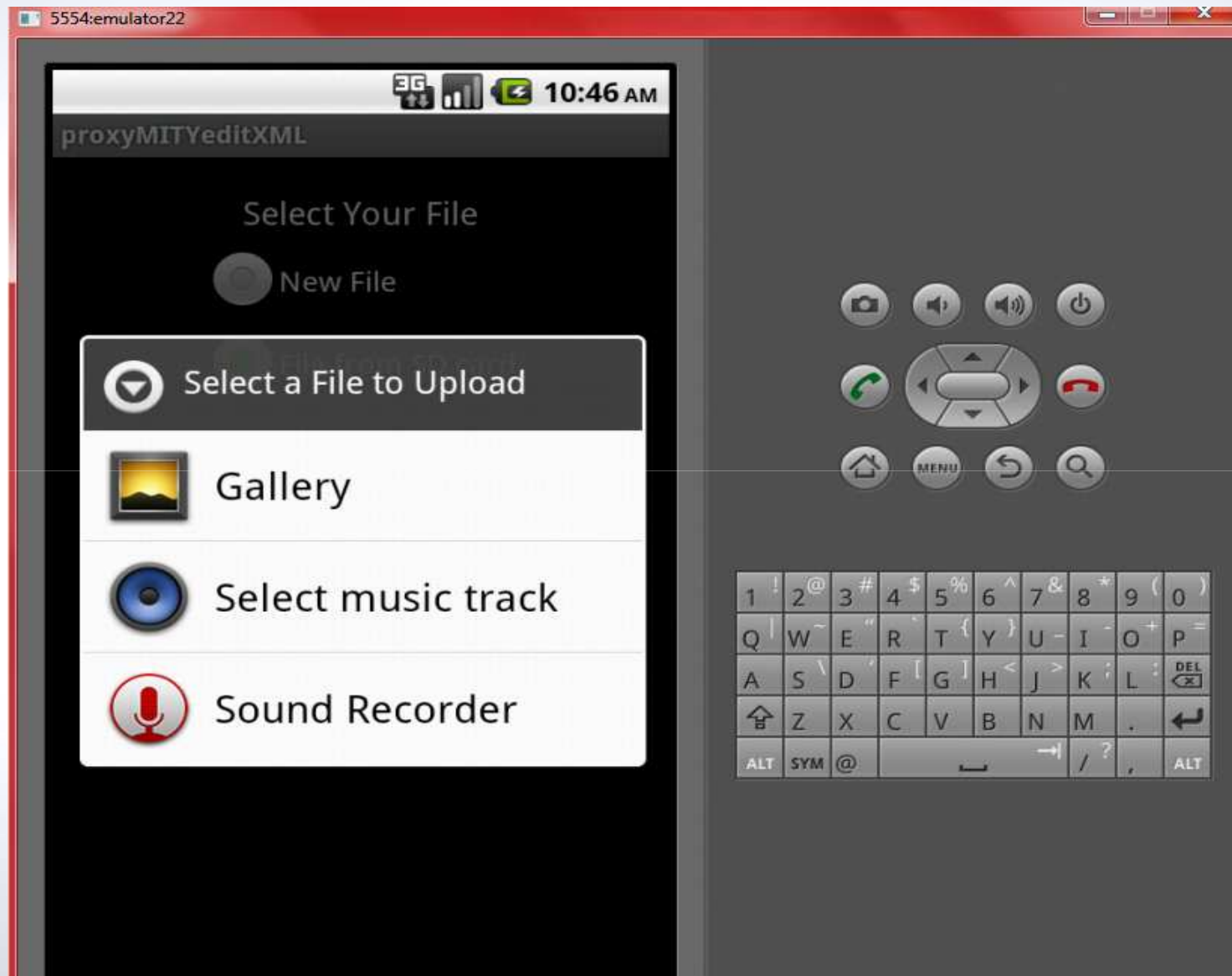
<tag1 name="tag1value">
<child1>child1value</child1>
</tag1>

<tag2 name="tag2val">
<child1>child of t2</child1>
</tag2>

</proxyMITYeditXML>
```



Demo : Choose file

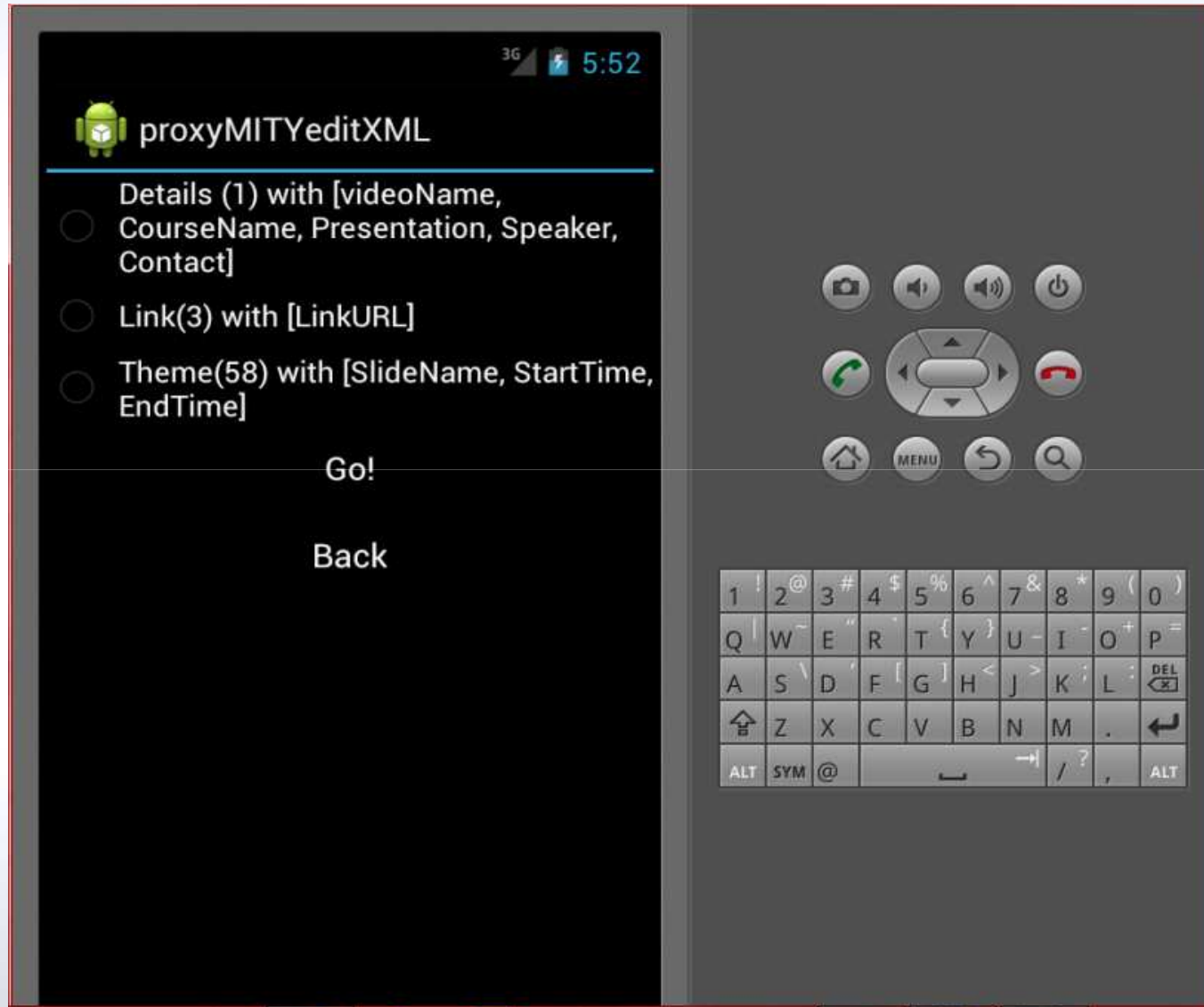


Demo : Upload new file

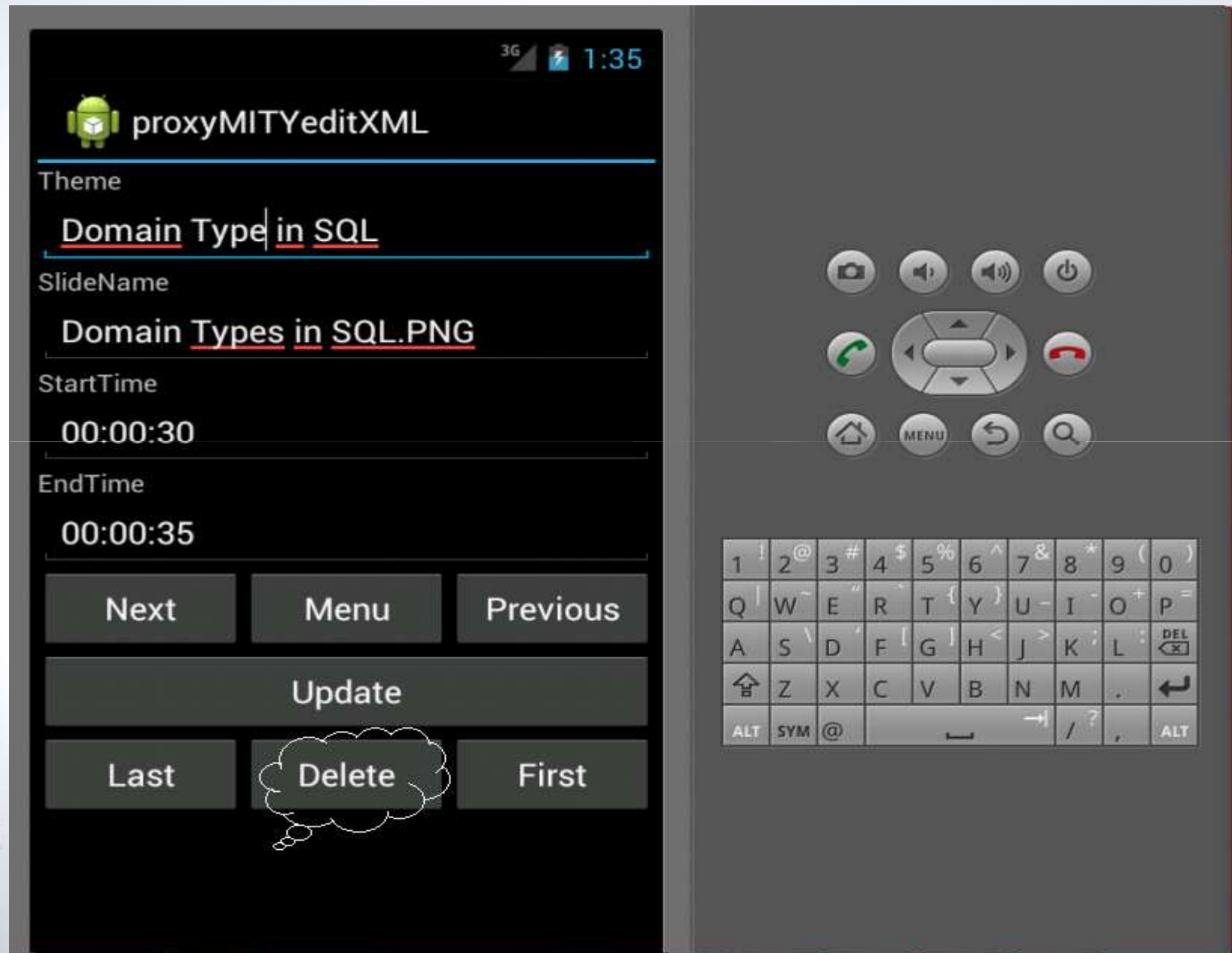
```
<?xml version="1.0" encoding="UTF-8"?>
<ProxyMITY><Details_DONOTREPEAT><videoName>DBMS_L3_Introduction to SQL(WT).mp4</videoName>
  <CourseName>DBMS</CourseName>
  <Presentation>SQL</Presentation>
  <Speaker>Prof. Sudarshan</Speaker>
  <Contact>916856952</Contact>
</Details_DONOTREPEAT>
<Link name = "google">
  <LinkURL>http://www.google.com</LinkURL>
</Link>
<Link name="Yahoo">
  <LinkURL>http://www.yahoo.com</LinkURL>
</Link>
<Link name="GMail">
  <LinkURL>http://www.gmail.com</LinkURL>
</Link>
<Theme name="Introduction to SQL">
  <SlideName>Introduction to SQL.PNG</SlideName>
  <StartTime>00:00:00</StartTime>
  <EndTime>00:00:10</EndTime>
</Theme>
<Theme name="Introduction to SQL">
  <SlideName>Introduction To SQL1.PNG</SlideName>
  <StartTime>00:00:15</StartTime>
  <EndTime>00:00:20</EndTime>
</Theme>
```



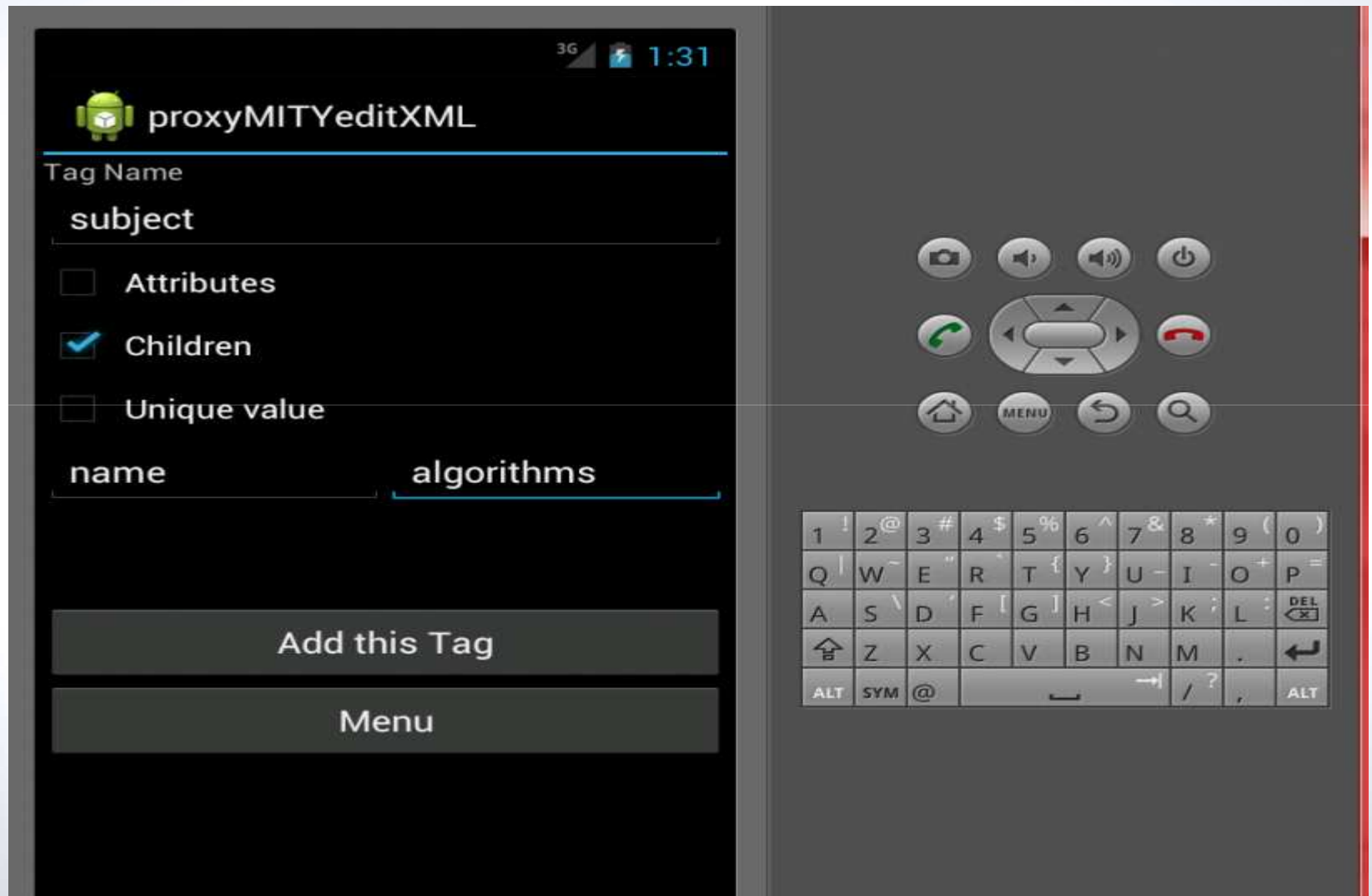
Demo : Upload existing file



Demo : Editing existing tags in existing file




Demo : Adding new tag to existing file



Demo : Adding values to existing tag

3G 2:02

 proxyMITYeditXML

Theme
my theme





SlideName
myslide




StartTime
01:42:56





EndTime
01:42:50



Menu

Add Tag







1	2@	3#	4\$	5%	6^	7&	8*	9(	0)
Q	W	E	R	T	Y	U	I	O	P=
A	S	D	F	G	H	J	K	L	DEL
	Z	X	C	V	B	N	M	.	
ALT	SYM	@						/ ? ,	ALT



Demo : Update to existing file

```
<Theme name="Modification of Database">
  <SlideName>Condition Updates.PNG</SlideName>
  <StartTime>00:54:55</StartTime>
  <EndTime>00:58:40</EndTime>
</Theme>
<Theme name="Modification of Database">
  <SlideName>Scalar Subquery (More) .PNG</SlideName>
  <StartTime>00:58:40</StartTime>
  <EndTime>00:58:58</EndTime>
</Theme>
<Theme name="my theme">
  <SlideName>my slide</SlideName>
  <StartTime>01:42:56</StartTime>
  <EndTime>01:42:60</EndTime>
</Theme>
<subject>
<name>algorithms</name>
</subject>
</ProxyMITY>
```



Demo : Console

```
<?xml version="1.0" encoding="UTF-8"?>
<ProxyMITY><Details_DONOTREPEAT><videoName>DBMS_L3_Introduction to SQL(WT).mp4</videoName>
  <CourseName>DBMS</CourseName>
  <Presentation>SQL</Presentation>
  <Speaker>Prof. Sudarshan</Speaker>
  <Contact>916856952</Contact>
</Details_DONOTREPEAT>
<Link name = "google">
  <LinkURL>http://www.google.com</LinkURL>
</Link>
<Link name="Yahoo">
  <LinkURL>http://www.yahoo.com</LinkURL>
</Link>
<Link name="GMail">
  <LinkURL>http://www.gmail.com</LinkURL>
</Link>
<Theme name="Introduction to SQL">
  <SlideName>Introduction to SQL.PNG</SlideName>
  <StartTime>00:00:00</StartTime>
  <EndTime>00:00:10</EndTime>
</Theme>
<Theme name="Introduction to SQL">
  <SlideName>Introduction To SQL1.PNG</SlideName>
  <StartTime>00:00:15</StartTime>
  <EndTime>00:00:20</EndTime>
</Theme>
```



Demo : Console

```
0.Print all
1. Edit
2. Add
3. Save
4. Abort
5. Exit
```

Enter ur option!

2

The tags are

2 Link

3 Theme

Enter the index of the tag !

2|

The value to be added in Link is: www.cse.iitb.ac.in

The value to be added LinkURL is: http://www.cse.iitb.ac.in

```
0.Print all
1. Edit
2. Add
3. Save
4. Abort
5. Exit
```

Enter ur option!



Demo : Changes to file through console

```
<ProxyMITY>
<Details>
<videoName>DBMS_L3_Introduction to SQL (WT) .mp4</videoName>
<CourseName>DBMS</CourseName>
<Presentation>SQL</Presentation>
<Speaker>Prof. Sudarshan</Speaker>
<Contact>916856952</Contact>
</Details>
<Link name="google">
<LinkURL>http://www.google.com</LinkURL>
</Link>
<Link name="Yahoo">
<LinkURL>http://www.yahoo.com</LinkURL>
</Link>
<Link name="GMail">
<LinkURL>http://www.gmail.com</LinkURL>
</Link>
<Link name="www.cse.iitb.ac.in">
<LinkURL>http://www.cse.iitb.ac.in</LinkURL>
</Link>
<Theme name="Introduction to SQL">
<SlideName>Introduction to SQL.PNG</SlideName>
<StartTime>00:00:00</StartTime>
<EndTime>00:00:10</EndTime>
</Theme>
<Theme name="Introduction to SQL">
<SlideName>Introduction To SQL1.PNG</SlideName>
<StartTime>00:00:15</StartTime>
<EndTime>00:00:20</EndTime>
</Theme>
```



Assumptions and constraints

- The user can create/choose only XML files.i.e the files must have an extension .xml
- In the android version, he user can choose files only from SD card. i.e the files in the path /mnt/sdcard. In desktop, the file is chosen from the same folder as the application.
- The files created by the application are stored in the SD card in android version. In desktop version, it is stored in the same folder as the application.
- An element cannot have both attributes as well as node value at the same time.
- Only up to one attribute can be added for any tag.
- The name of the attribute is always “name”.
- Every XML file must have a root tag.
- If a tag has attribute, it must have at least one child.
- Tags with node value alone cannot be added through add module. They must be added through the edit module.
- Only up to one attribute can be added for any tag.
- The Unique tags are identified by the suffix “_DONOTREPEAT”.



Further enhancements

- **Improvement of GUI.**
- **Searching for values in XML files.**
- **Enabling the creation of tags with multiple attributes.**
- **Validation of individual tags.**
- **GUI for Desktop Publication**





Questions?



Thank you!