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| Course Title | Mobile Application Development Lab |
| Course Code | CE415 |
| Course Credit | Lecture : 00 |
| | Practical : 01 |
| | Tutorial : 00 |
| | Total : 01 |
| Course Learning Outcomes | |
| <p>At the end of the course, students will be able to:</p> <ul style="list-style-type: none"> • Identify importance of learning Android. • Understand essential concepts of Android Application development. • Develop Android Applications suitable for upload in play store. | |
| Detailed Syllabus | |
| <p>Following Topics will be covered in Lab:</p> <ol style="list-style-type: none"> 1. Installation and Configuration of tools required for Android Application Development 2. Anatomy of Android Application Development 3. Android Manifest File 4. UI Elements 5. Layouts 6. Drawing and Working with Animation 7. Android Data and Storage APIs 8. Sharing Data between applications using Content Providers 9. Android Networking APIs 10. Android Web APIs 11. Android Location Based APIs 12. Android Multimedia APIs 13. Android Telephony APIs | |

Instruction Methods& Pedagogy

- Students will be explained important concepts of android application development through practical demonstration.
- Useful web-links to learn different concepts will be provided.

Reference Books

- Lauren Darcey, Teach Yourself Android Application Development in 24 hours, First Edition, Pearson.
- Reto Meier, Professional Android 2 Application Development, 2010,Wiley India
- Mark L Murphy, Beginning Android, 2009, Wiley India Pvt Ltd Saiyad Y. Hashimi, Pro Android, 2009, Apress Publications
- Barry Buard, Android Application Development all in one for Dummies, Wiley Publishers

Additional Resources

- Website : developer.android.com

List of Experiments

Tutorial 1

Develop an android app which displays “Hello, welcome to Android Lab” message. Name of application should be set to “FirstApp”. Application icon should be your own photograph.

In your answer you should show appropriate files. Below each file, you should explain its contents in brief. This instruction is applicable to all tutorials. So it will not be repeated henceforth.

Tutorial 2

Develop an android app which displays a form to get following information from user.

- Username
- Password
- Email Address
- Phone Number
- Country
- State
- State
- Gender
- Interests
- Birth Date
- Birth Time

Form should be followed by a Button with label “Submit”. When user clicks the button, a message should be displayed to user describing the information entered.

Utilize suitable UI controls (i.e. widgets).

[When user enters country in AutoCompleteTextView, list of states should be displayed in Spinner automatically.]

Tutorial 3

Part I Layouts

Develop a form like Tutorial 2 in following different ways:

- (i) Using Relative Layout
- (ii) Using Table Layout
- (iii) Using Absolute Layout

Observe the difference in main.xml code and ease of maintenance.

Part II Menus

- (i) **Create** an options menu as follows: It displays options like “New”, “Open” and “Save As”. When user selects any options, Toast message is displayed showing the option selected.
- (ii) **Create** a Context menu as follows: Put a TextView on Screen. When user presses TextView for long time, a context menu is displayed. Menu has following options: RED, GREEN and BLUE. When user selects a color, background color of TextView should be changed to selected color. Show all required files.

Tutorial 4

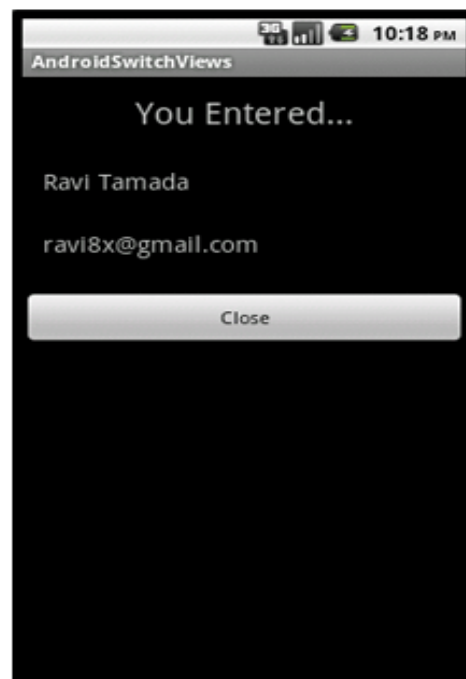
Develop an App as follows.

App has two Activities: First activity is labeled “Home Page”. It is the default activity. When it launches, a form asking user to enter username and password should be displayed. When user clicks on Button, next Activity “Welcome Page” should be launched. It should display the information back to user. When user clicks on “Close” button, “Welcome Page” should be

Final Output



Screen1.xml
(FirstScreenActivity.java)



Screen2.xml
(SecondScreenActivity.java)

Figure 1

Destroyed. Figure 1 shows output.

Tutorial 5

Create a database “University” in SQLite. Create a Table “students”. It has following columns: ID, name, email-address and phone number. **Develop** an App which provides following functionalities:

- 1) Allows user to add student details in table.
- 2) Allows user to view all rows of table.
- 3) Allows user to update information about specific student based on ID.
- 4) Allows user to delete entry of specific student.

Tutorial 6

Extend the form developed in tutorial 2 so that when user clicks on submit button it should verify the data entered by user and if everything is correct insert data into database.

Tutorial 7

Create a Service which sorts 1000 numbers. Once sorting is finished, it should notify user about the event using notification. When user clicks on notification, notification should be closed.

Tutorial 8

Develop a form as in Tutorial 2. Instead of “Submit” button, use “Save” button. When user clicks on “Save”, data entered by user should be saved in shared preferences. User exits the application. When again application is started, same information should be displayed back.

Tutorial 9

Develop an App as follows:

Create a login Activity. It asks “username” and “password” from user. Create an Async task which communicates with server side services to check whether username and password are correct or not. Accordingly Activity displays appropriate message. On server side, create a web-page which to fetch data from database.

Tutorial 10

Develop an App which can block a particular mobile number for both incoming and outgoing calls.

Tutorial 11

Develop an Application which notifies user when battery is critically low. It should also reduce the screen brightness when battery level is low.

Tutorial 12

Develop an Application which lists all the contacts in a phone showing Contact Name and Contact Number. When user clicks on a contact name your app should make a call to that number.

Tutorial 13

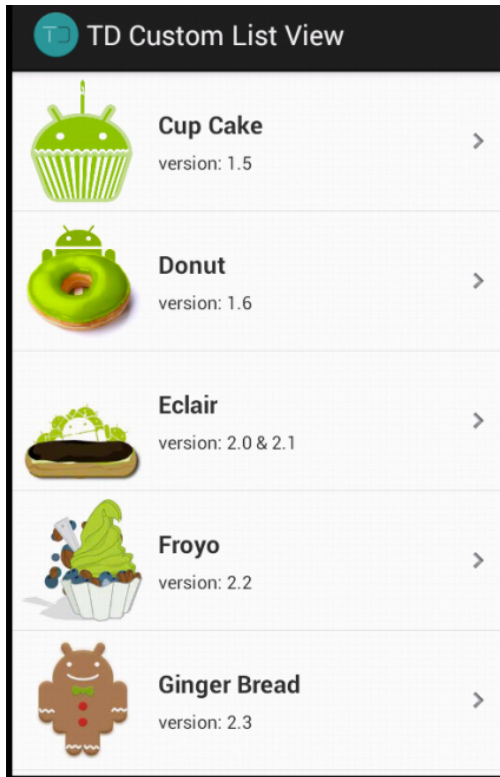
Create an Application to play video. Provide Next, Previous and Pause button.

Tutorial 14

Demonstrate the use of Sensors by developing sample application.

Tutorial 15

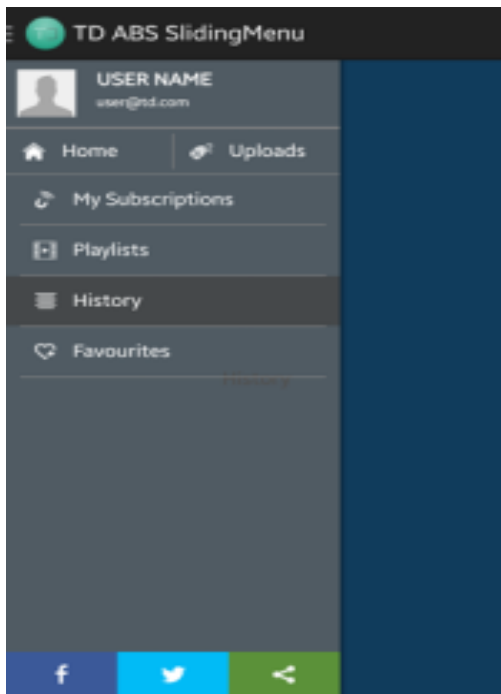
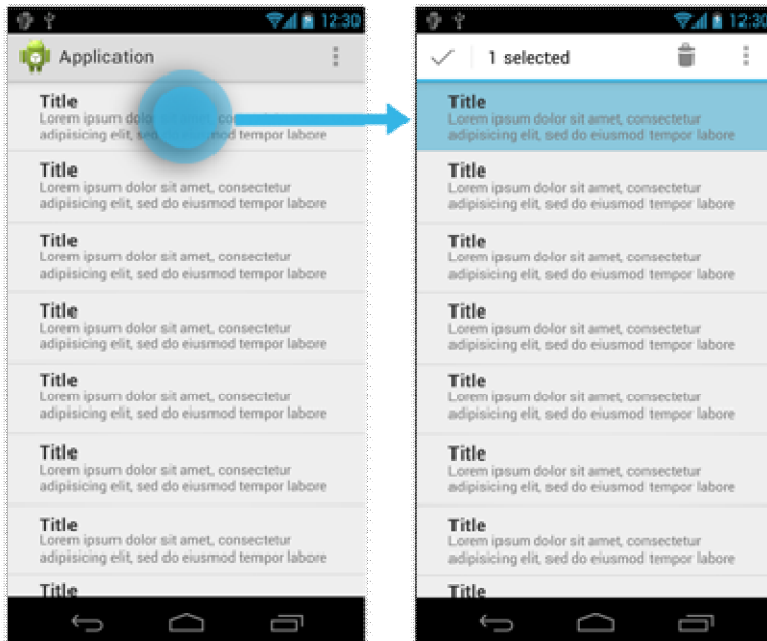
Develop a custom ListView as shown in below figure.



When user click on any item it should display a custom Toast as shown in below image

Tutorial 16

Develop a sliding menu as shown in below figure.



Tutorial 17

Create an activity to **demonstrate** Contextual Action Bar as shown below. When user long presses any item in list it should display contextual action bar.



SYLLABUS