TECHNISCHE UNIVERSITÄT DRESDEN

Application Development for Mobile and Ubiquitous Computing

QR Gossip
Final Presentation

Group 1
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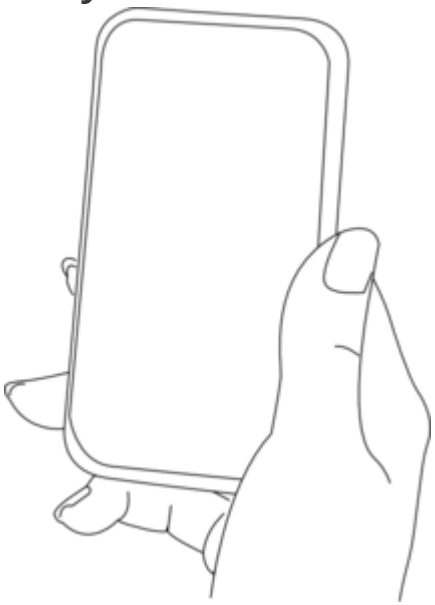
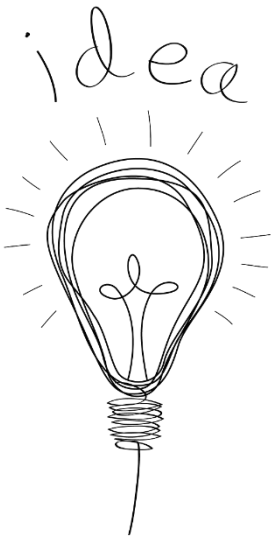
Application Scenario

Plan to Make An android QR Application Which can Transfer data Easily



Collected Information For QR Based mobile Application To transfer Content and Found It’s a Unique idea



So started our Work To define User Cases for This Application

Sound Profile

Ringtone
Notification
Media
Alarm
System
Voice

Clipboard

Plain Text
Address
Number

Contacts

Read Contacts
List Contacts
Show Details

Messages

Read Messages
List Messages
Show Details

Use Cases

Web Links

Long Web Links
Clickable Hyperlink
Clipboard Copy

Help

Help Topic
Function
Description

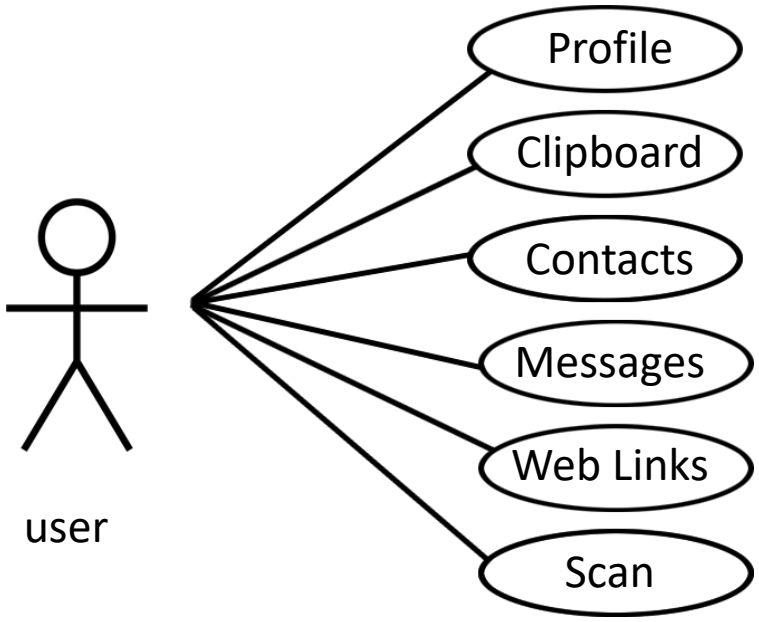
About

Application
Information

Scan

Unified Scan Function
Scan Data Type
Determined By
Application Logic

Use Cases

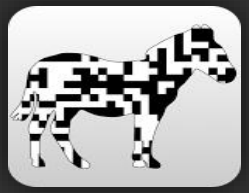


Development

- Android SDK
- Java SE
- Android Studio IDE

Resources

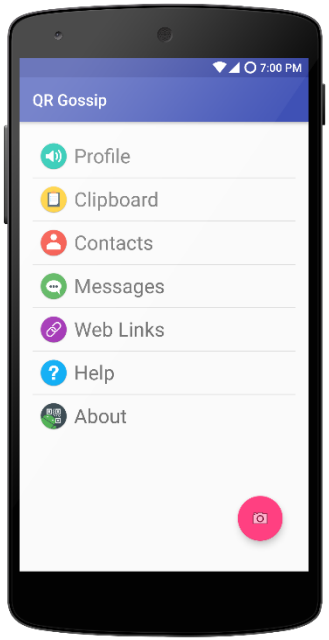
- ZXing Library
- Android Audio Manager
- Media Store Image
- Content Provider
  - Contacts
  - SMS



Permissions

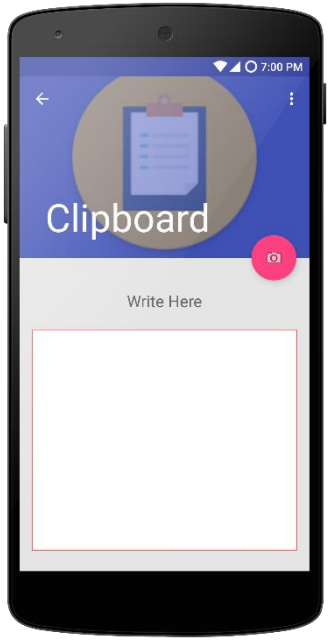
- READ_CONTACTS
- WRITE_CONTACTS
- READ_SMS
- WRITE_EXTERNAL_STORAGE

Application Demo

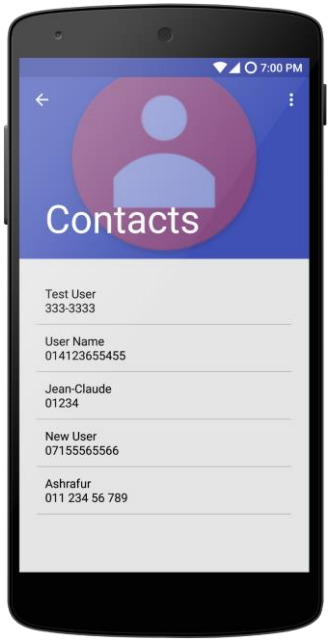


Main Menu

Profile

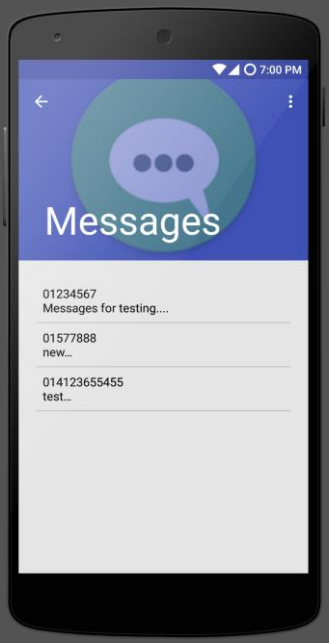


Clipboard

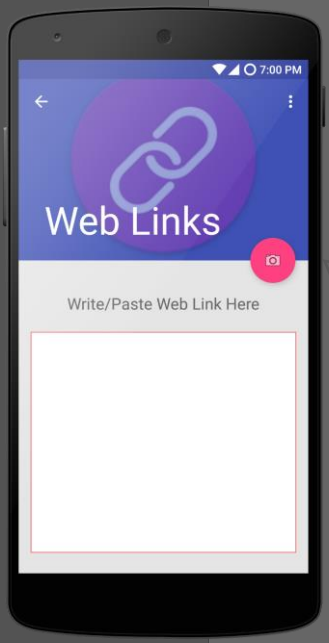


Contacts

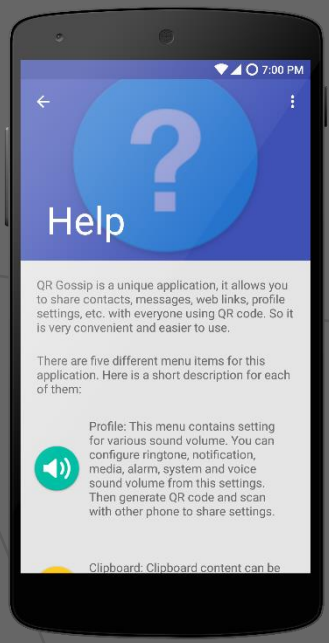
Application Demo



Messages

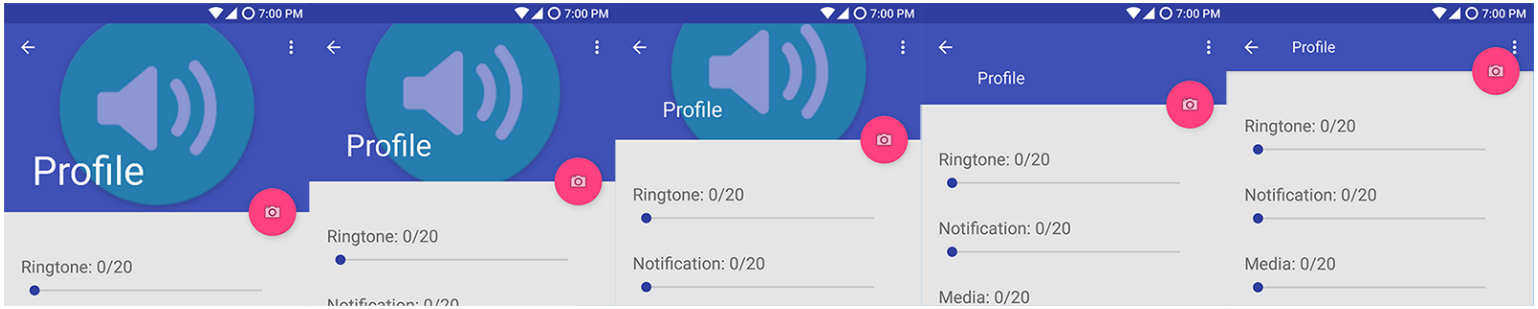


Web Links



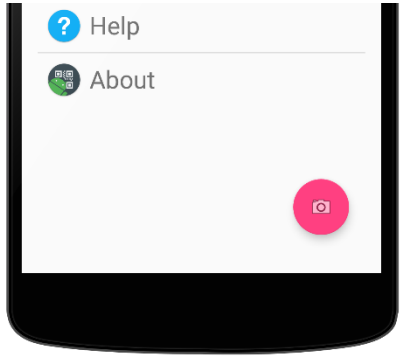
Help

About



Material Design Collapsing Toolbar Layout

Material Design Action Bar



Floating Button

Usability Challenge

- Intuitive user experience
- Easy menu navigation
- Android material design with smooth menu animation
- Help menu for user convenience
- Detailed layout design
- Error handling
- Application icon for unique identity

Form Factor Challenge

- Layout adapts to different resolutions and screen sizes
- Layout orientation for portrait and landscape mode
- Heterogeneity and limitation of resources for different sizes

Context

Audio Manager provides access to volume and ringer mode control. But maximum and minimum value of audio is managed differently by different manufacturer. It is difficult to send same sound profile to different handset.

Adaptation

- Maintained same sound profile for multiple devices

```
STREAM_NOTIFICATION,
STREAM_ALARM,
STREAM_MUSIC,
STREAM_RING,
STREAM_SYSTEM,
STREAM_VOICE_CALL
```

- Adapted internal logic to provide volume compatibility in different devices
- Multi level min/max range for different audio service

Context

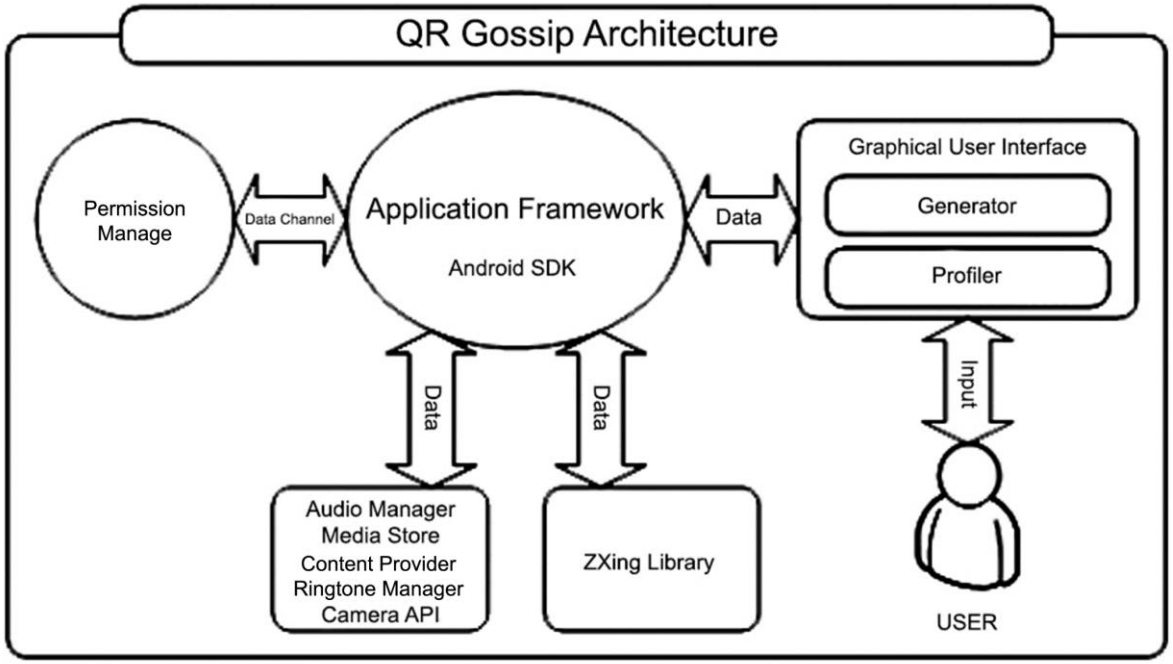
Most of the scanner application handle scanning operations in different window.

Like different tab or drawer for different scanning context.

Adaptation

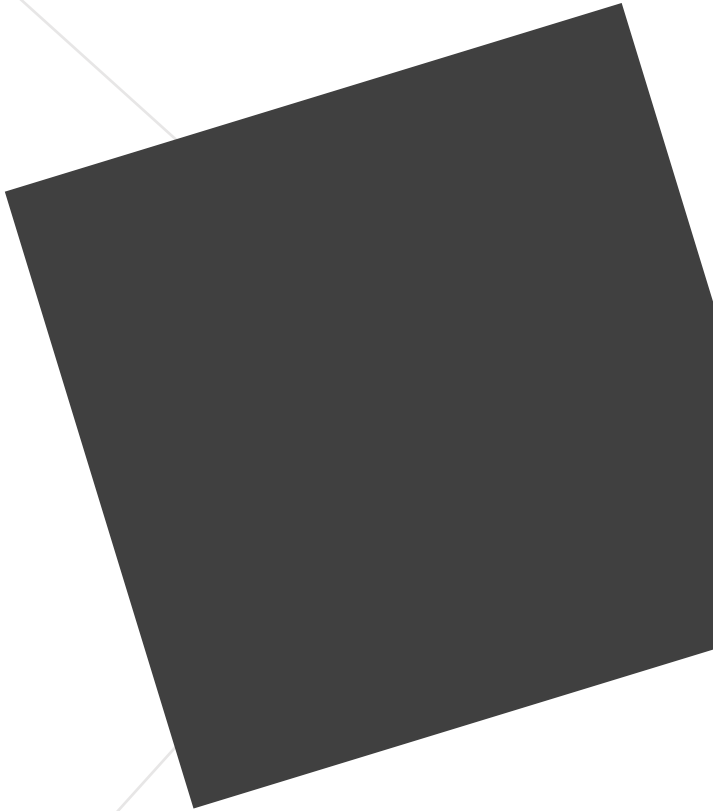
- Unified scanning operation
- Provide floating menu for all scanning job
- Application logic will differentiate data
- According to scanned data, contextual operation will be provided
- User notification for executing task
- Pop up menu for further user interaction

Application Architecture



Complete Application Design

- This is our first android application design experience
- We are planning to upload this application in Google Play Store
- We maintained same design language in full application



Android Permissions

To maintain security for the system and users,

Android requires apps to request permission before

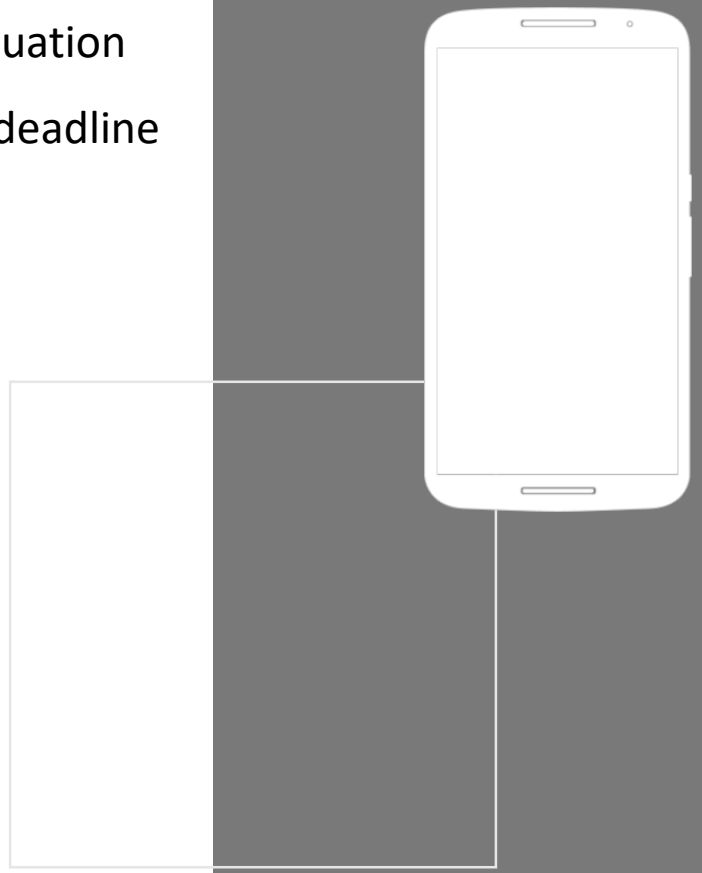
the apps can use certain system data.

We learned how to ask for permission gracefully and

Implement the requested permission.

Other Learning

- Learned about use cases
- Implementation based on use cases
- Adaptation mechanism for different situation
- Application development with certain deadline



Thank You