Final Presentation

Lab on Apps Development for Android

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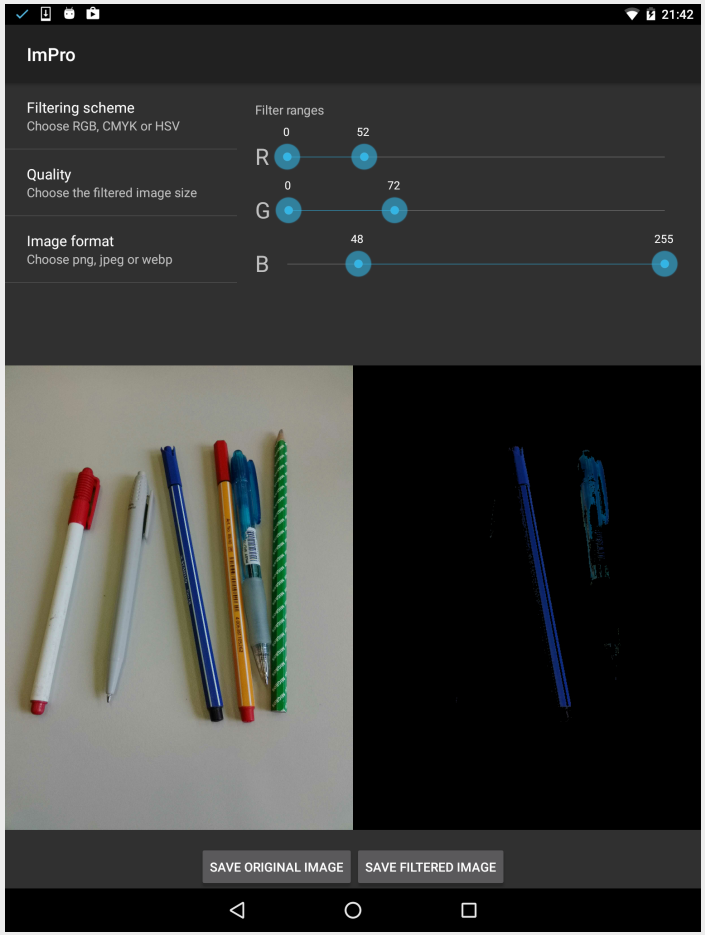
ImPro

Professional Image Processing Application for Analytic Color Filtering

Introduction
Application Idea



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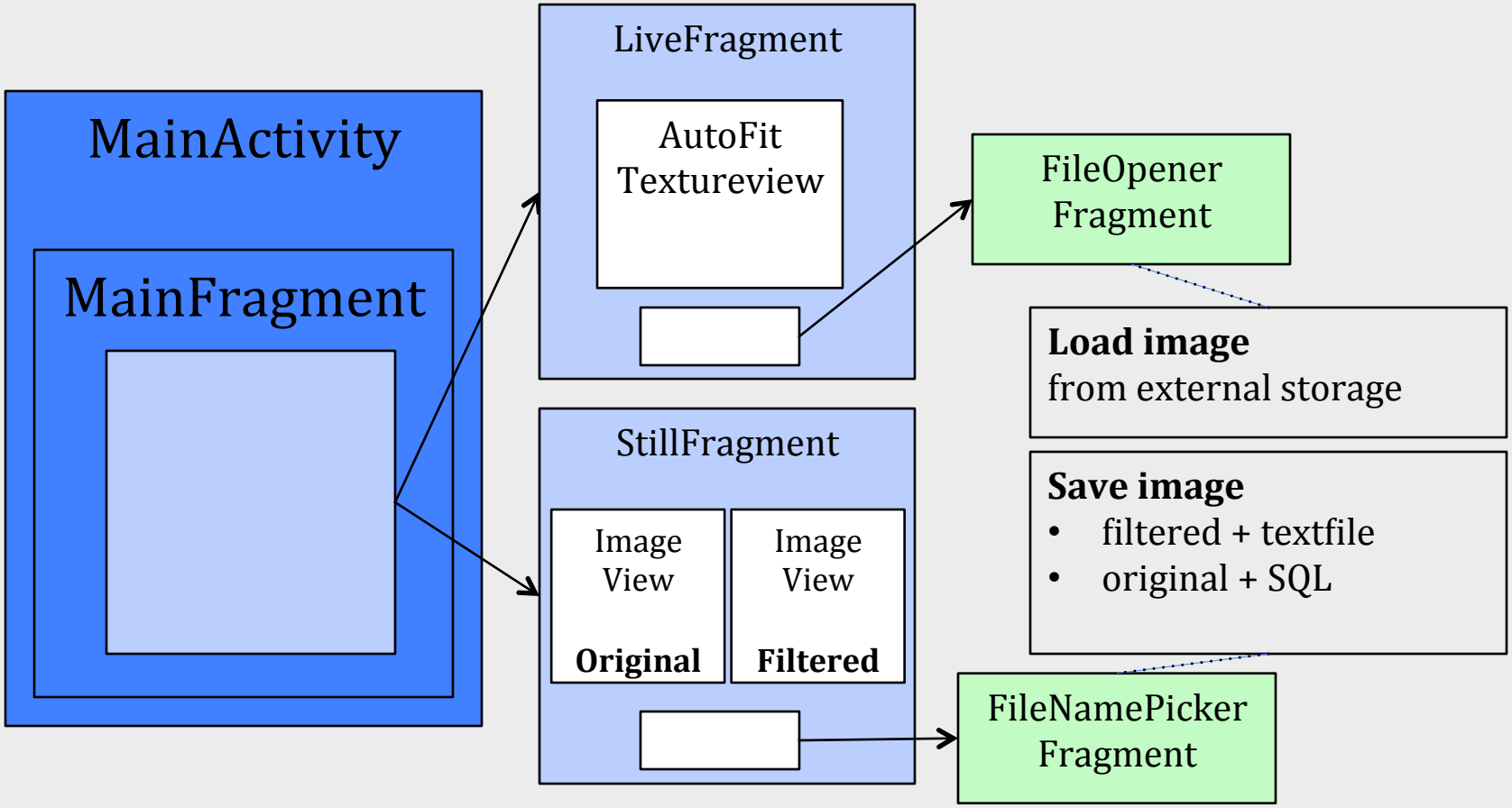
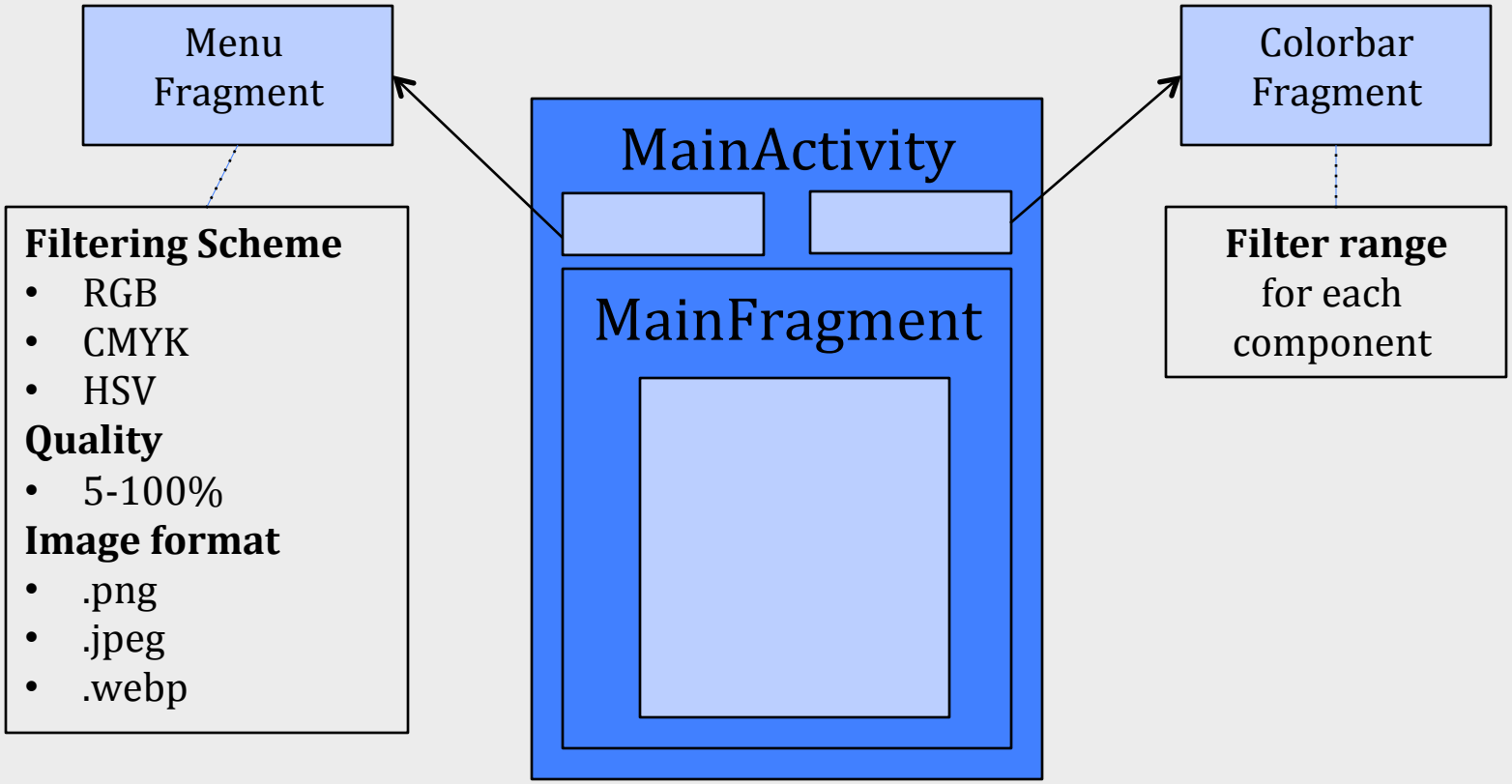
Global Structure
Image capture

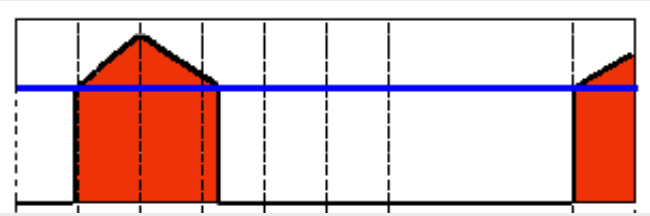


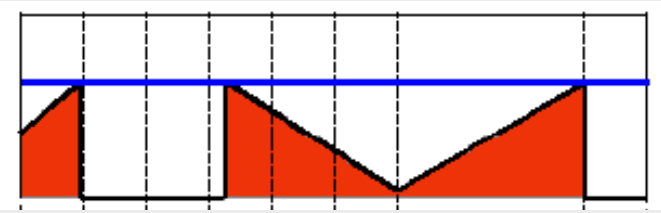
Global Structure
Filtering setup



Important Aspects
Image Processing

- Color Conversion RGB/HSV/CMYK
  - OpenCV for common RGB/HSV
  - Own implementation for unsupported format CMYK
- Thresholding
  - Local, pixelwise implementation

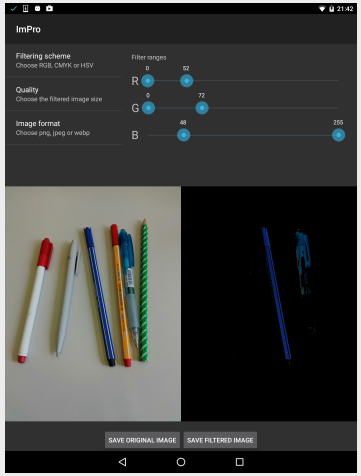


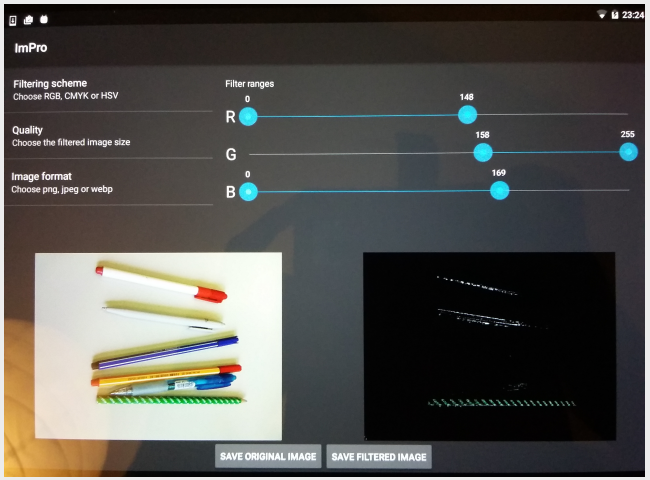


- Filtering Intent created to run in background
- Pictures saved as png, jpg or webp. Applied filter

Important Aspects
Camera Handling

- *android.hardware.camera2* interface to handle cameras
- Camera view adapts to scale and rotation of screen





Important Aspects
SQLite Database

Allows to save **filter parameters** together with original image.

- When original image loaded, corresponding **filter** and **compression** are directly applied.
- Saved values:
  - filename
  - quality
  - type
  - filtersettings
  - id

Conclusion

Suggested Improvements

- Filtering
  - Filter range from max to min (e.g. 150 to 20)
  - Live filtering in addition to still filtering
- Layout
  - Change fragment layout for smartphones
  - Use back button to switch between fragments
- Help buttons for user comfort

Thank you