

# ShopAdmin

Control your expenses with receipt scanner



**LIVE DEMO**

**APPROACH**

**DETAILS**

**CONCLUSION**

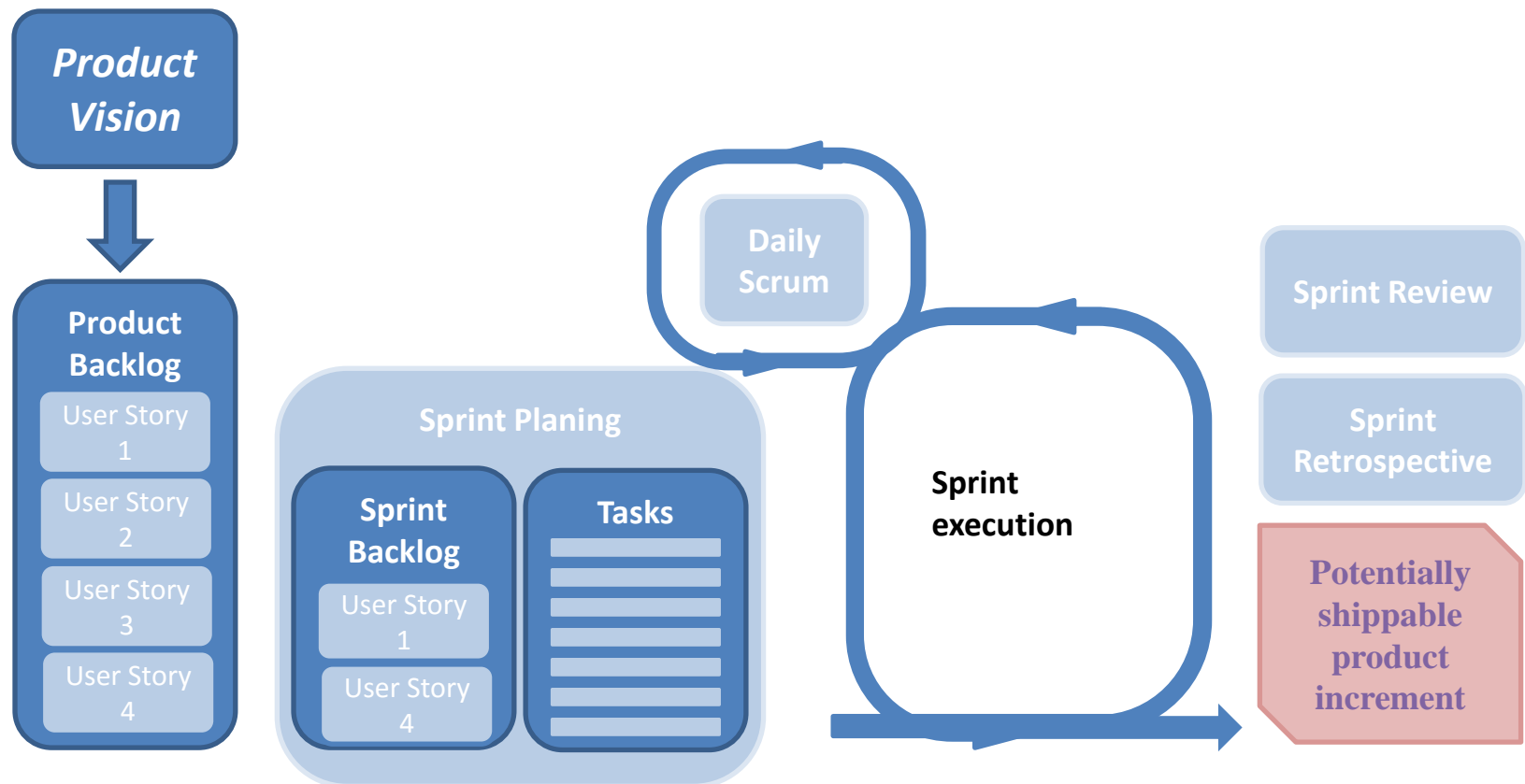
LIVE DEMO

**APPROACH**

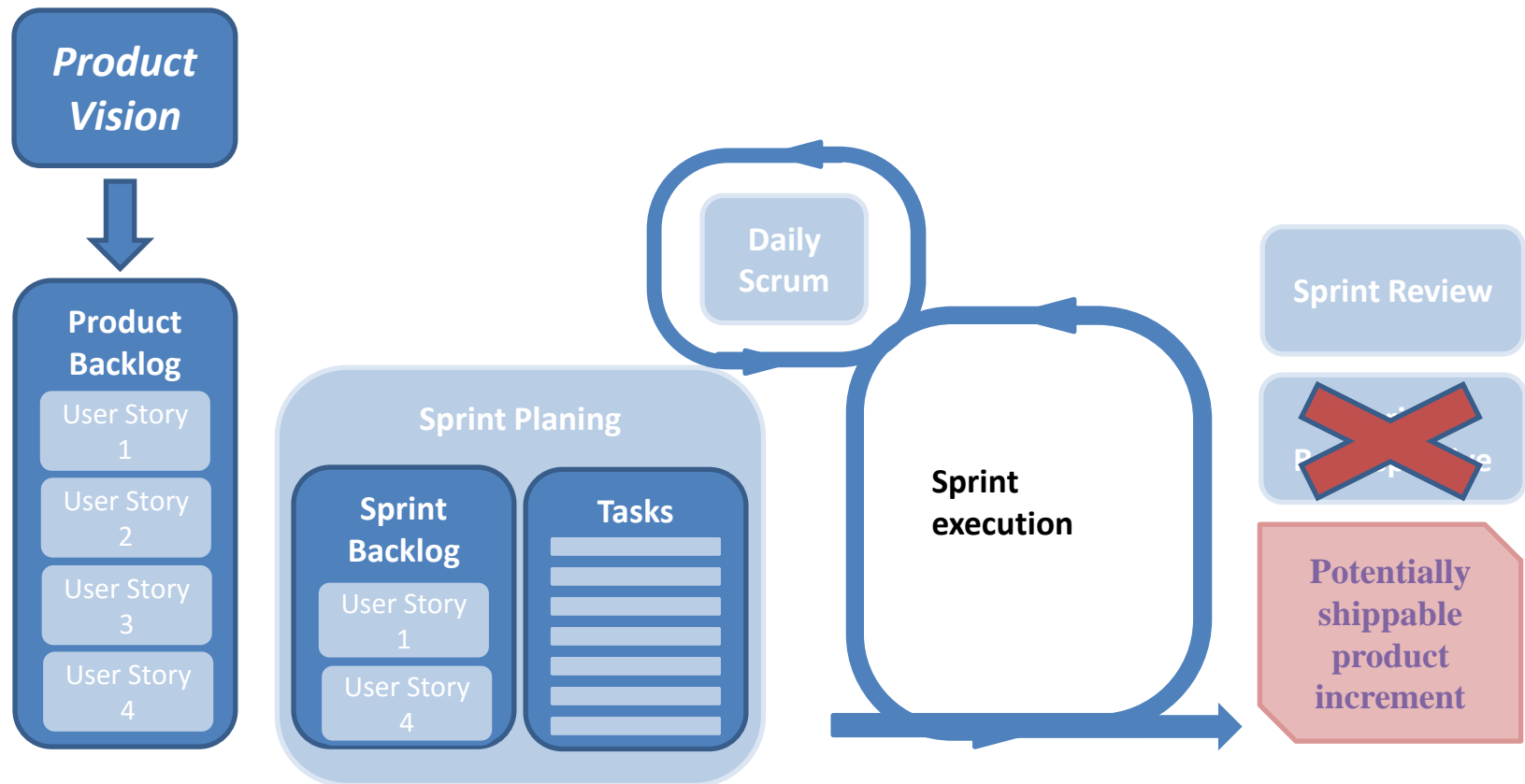
DETAILS

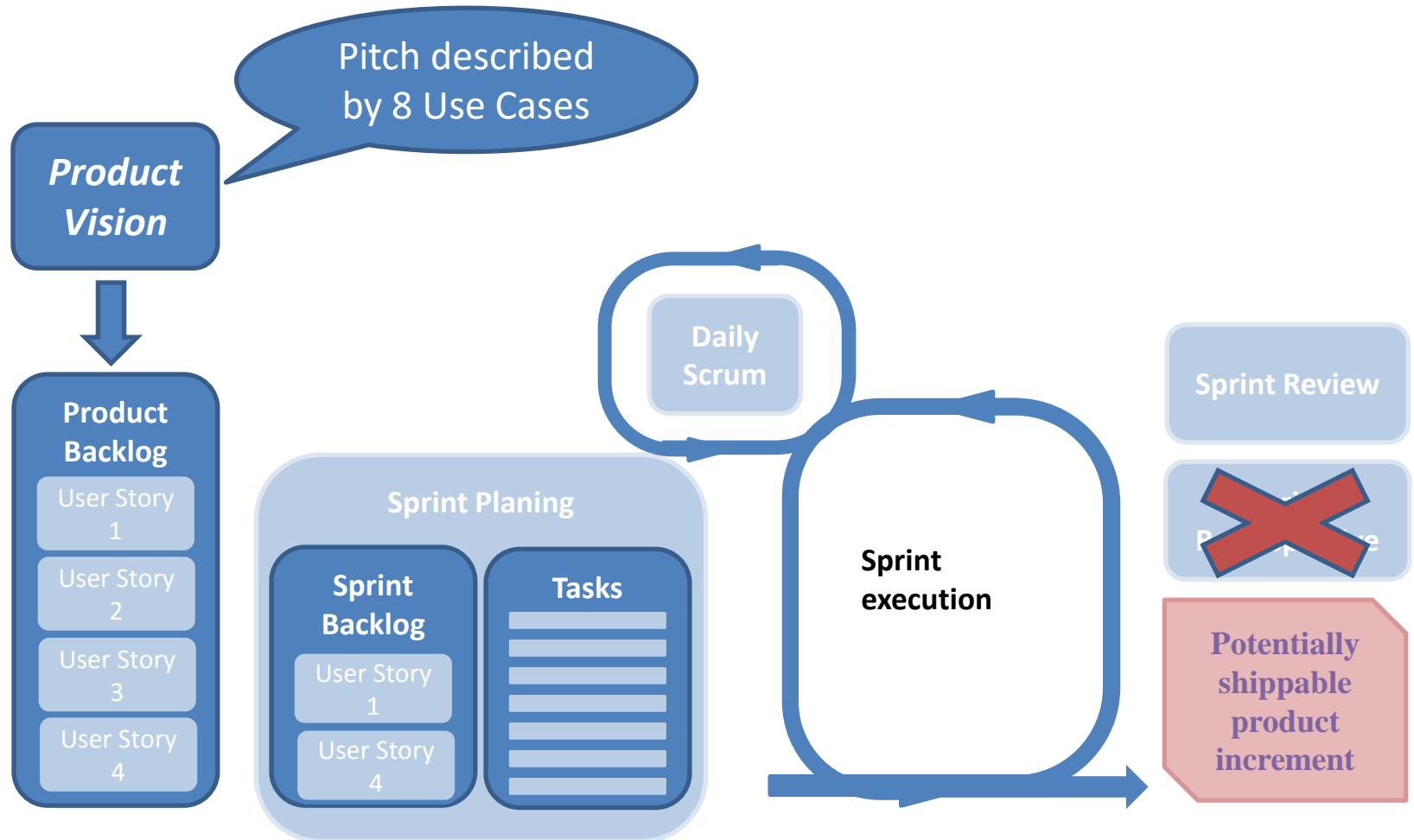
CONCLUSION

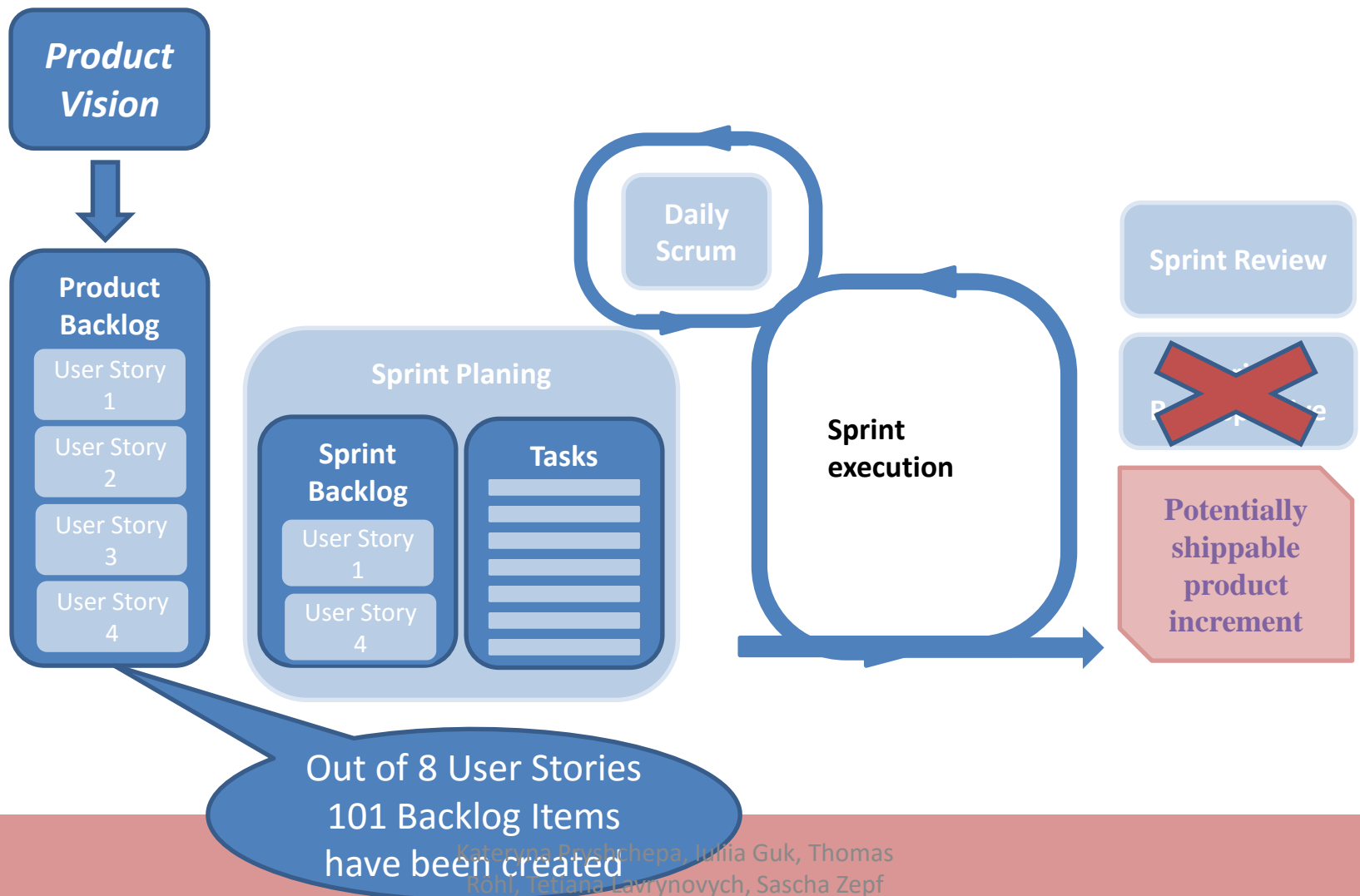
For the realization of ShopAdmin it was decided to use SCRUM

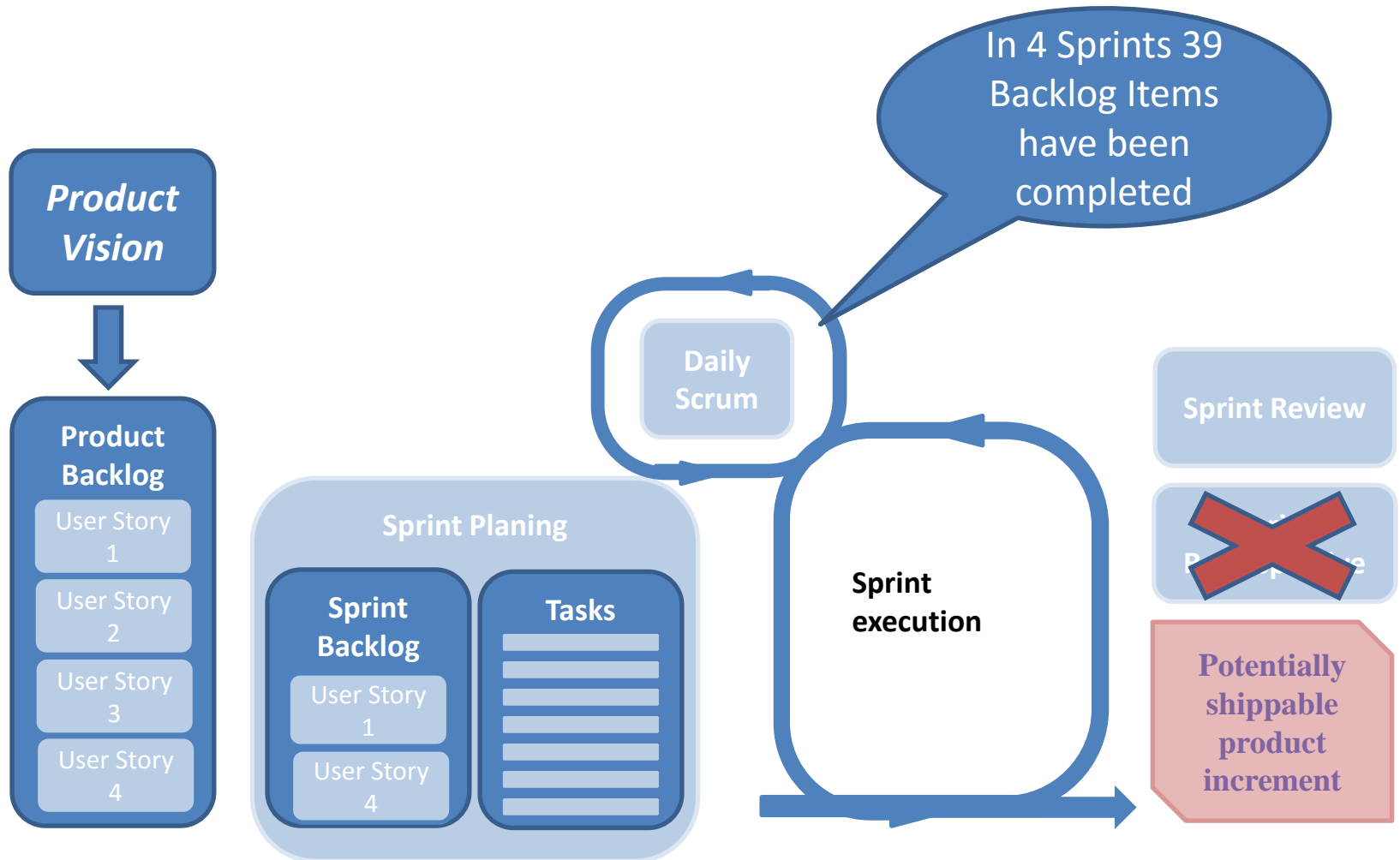


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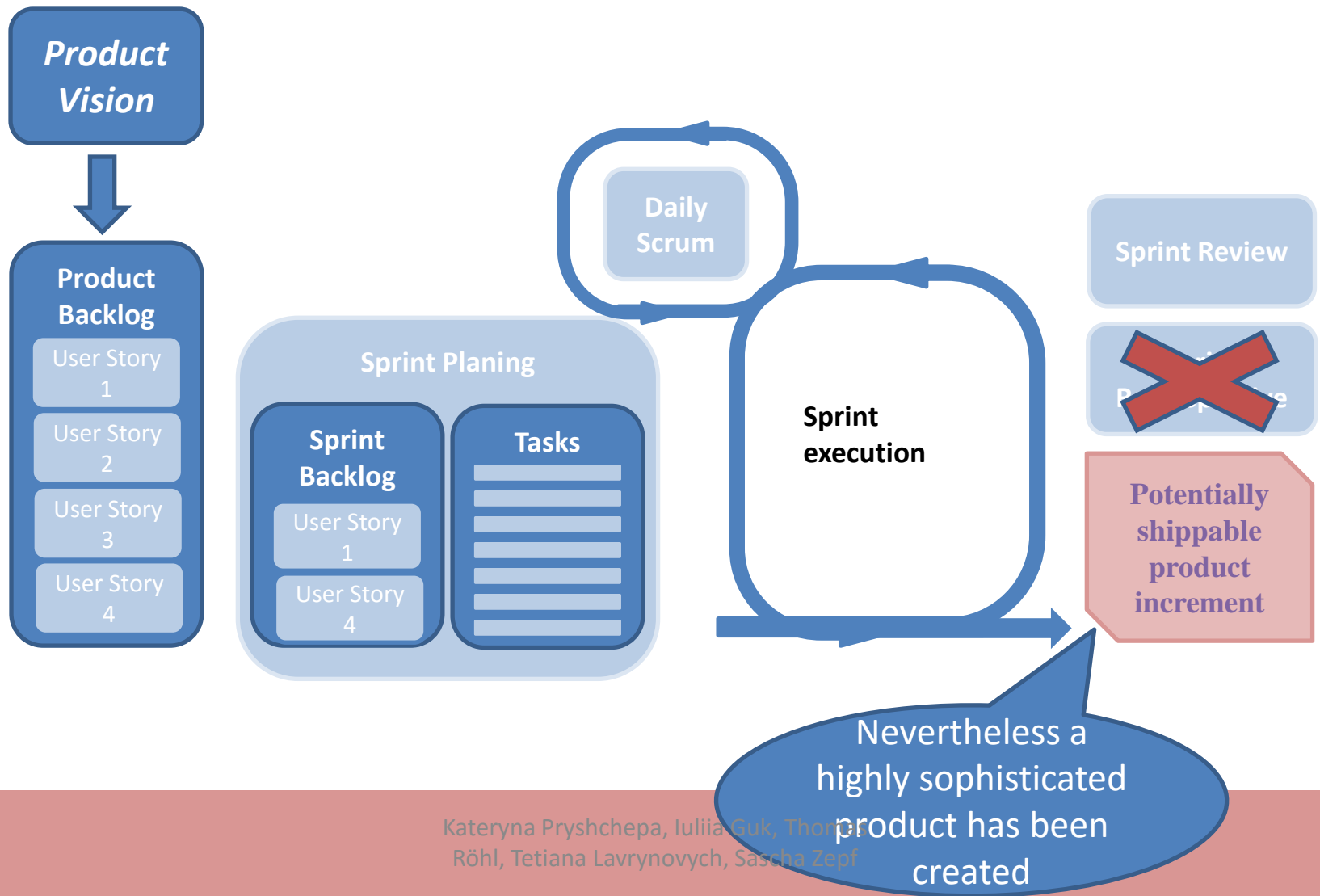












*Core  
Competences*

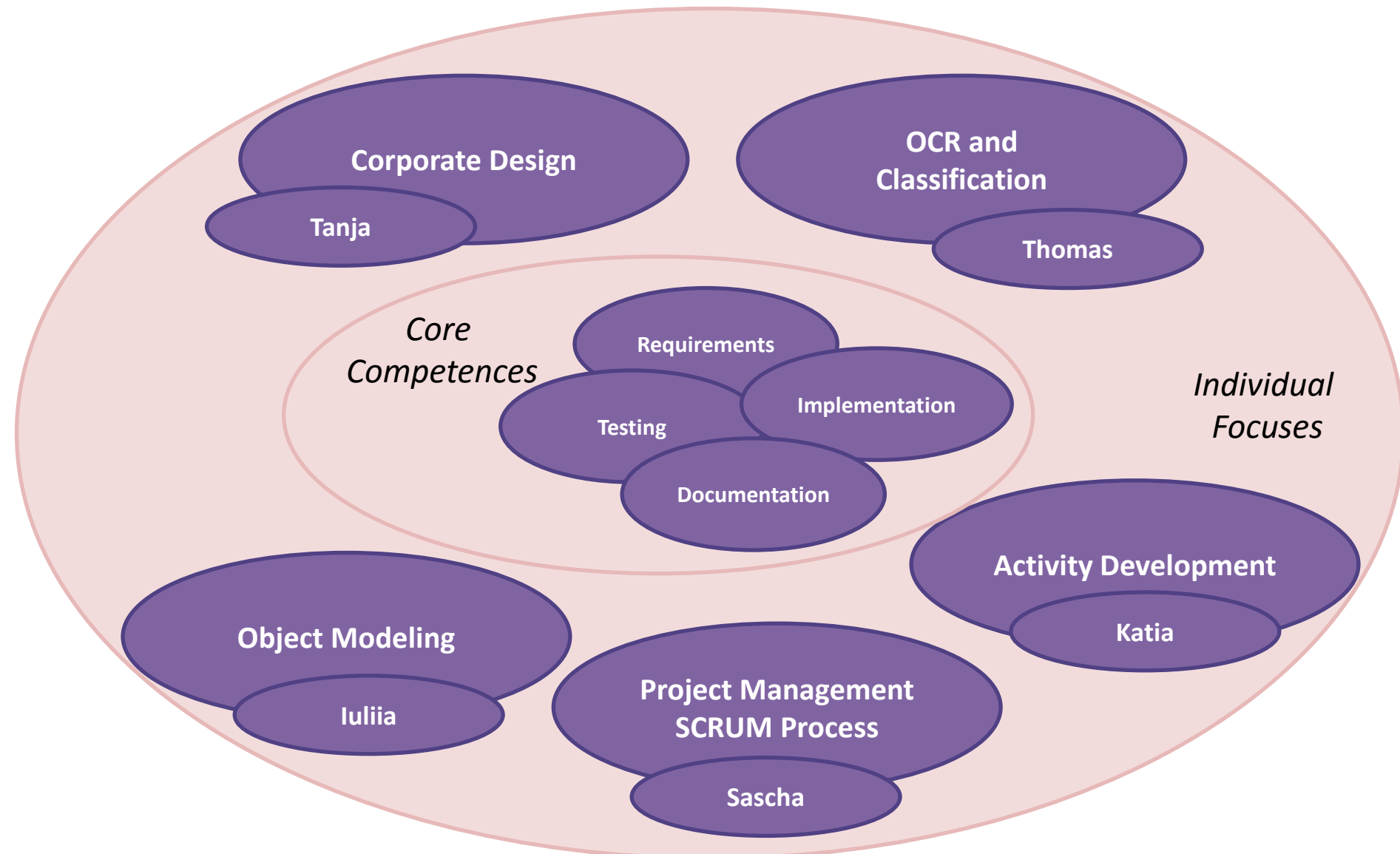
Requirements

Testing

Implementation

Documentation

*Individual  
Focuses*



LIVE DEMO

APPROACH

DETAILS

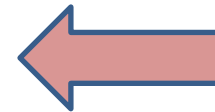
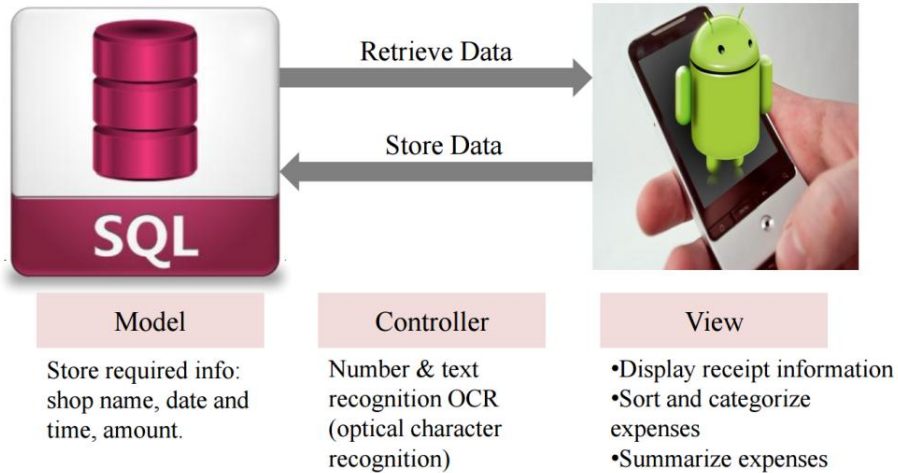
**TECHNICAL DESIGN**

ANDROID DETAILS

RECEIPT EXTRACTION

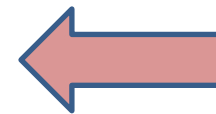
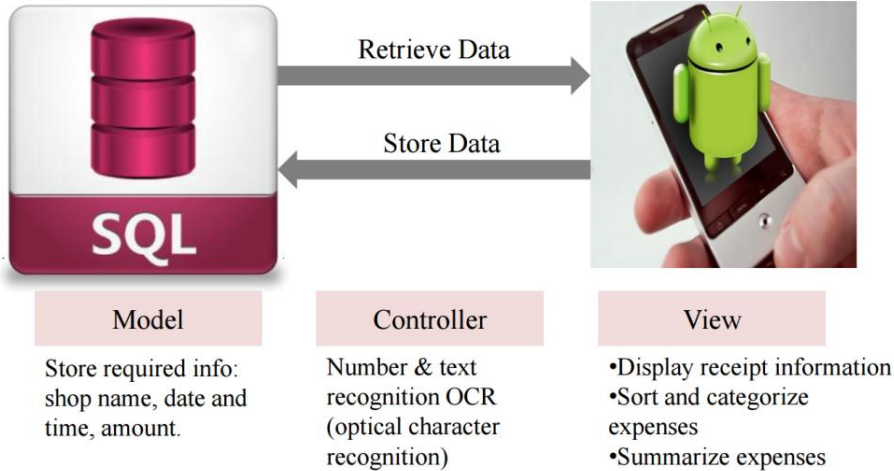
CONCLUSION

## Architecture



How it all began...

## Architecture

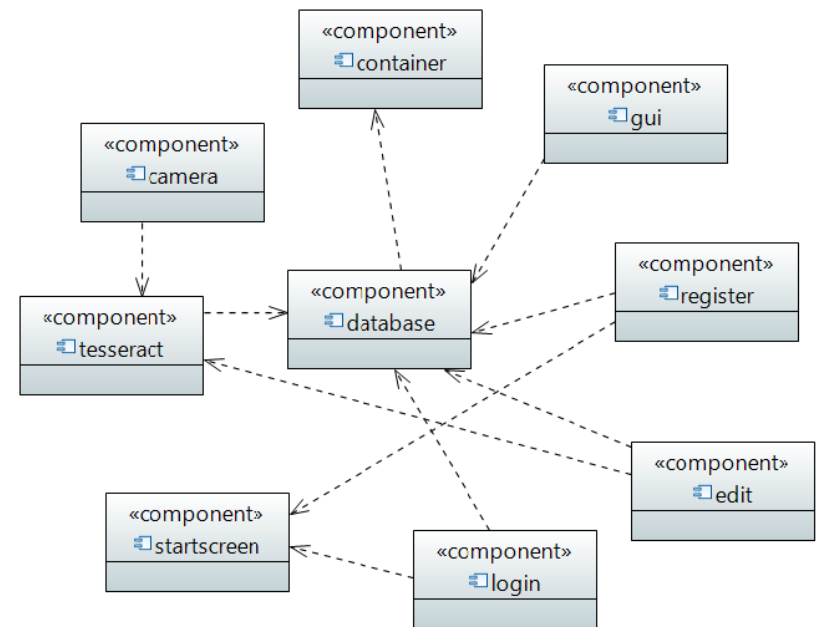


How it all began...

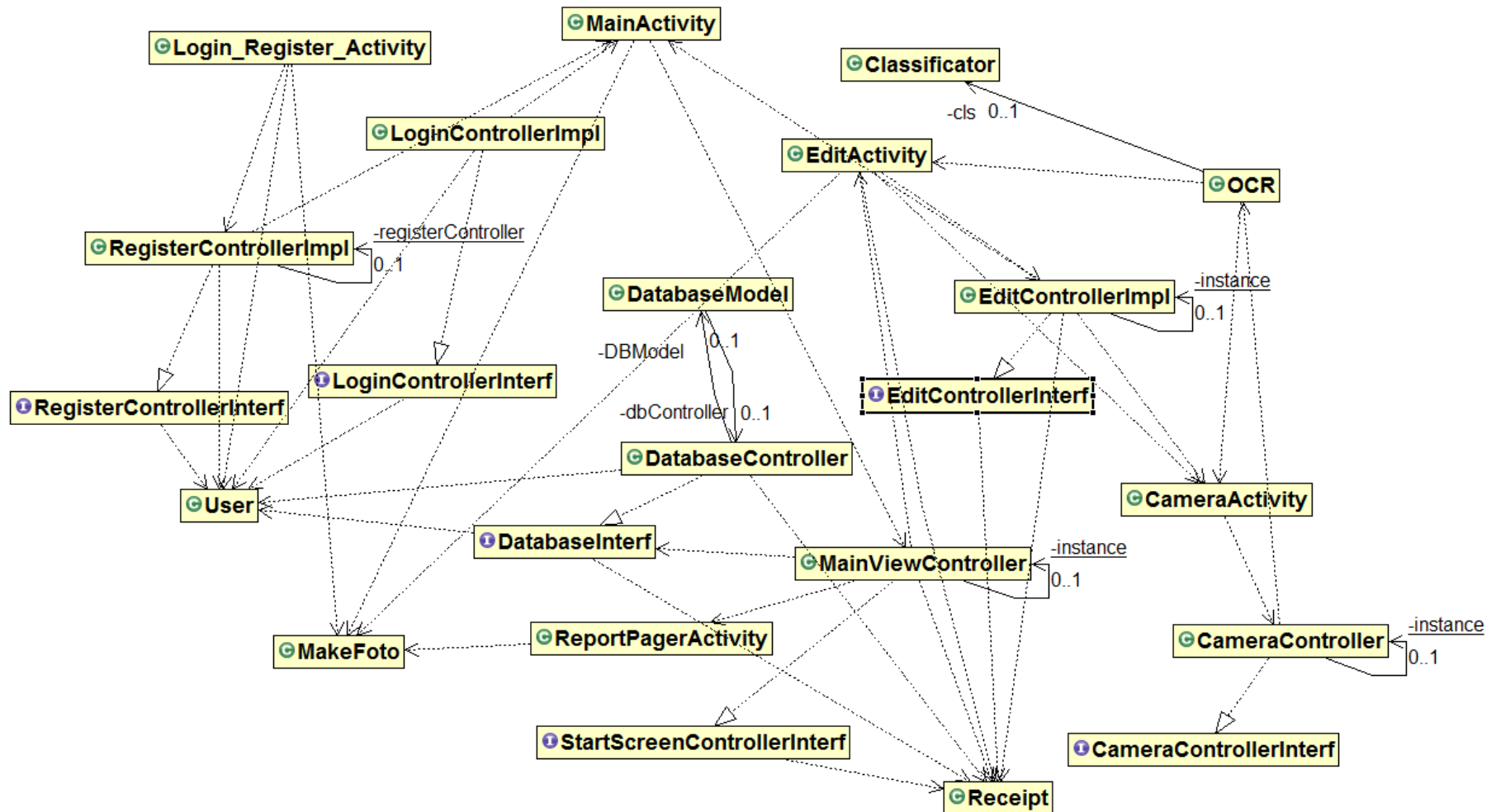
- ▼ camera
  - CameraController
  - CameraControllerInterf
- ▶ container
- ▶ database
- ▶ edit
- ▶ gui
- ▶ login
- ▶ register
- ▶ reports
- ▶ startscreen
- ▶ statics
- ▶ tesseract

## Project Structure:

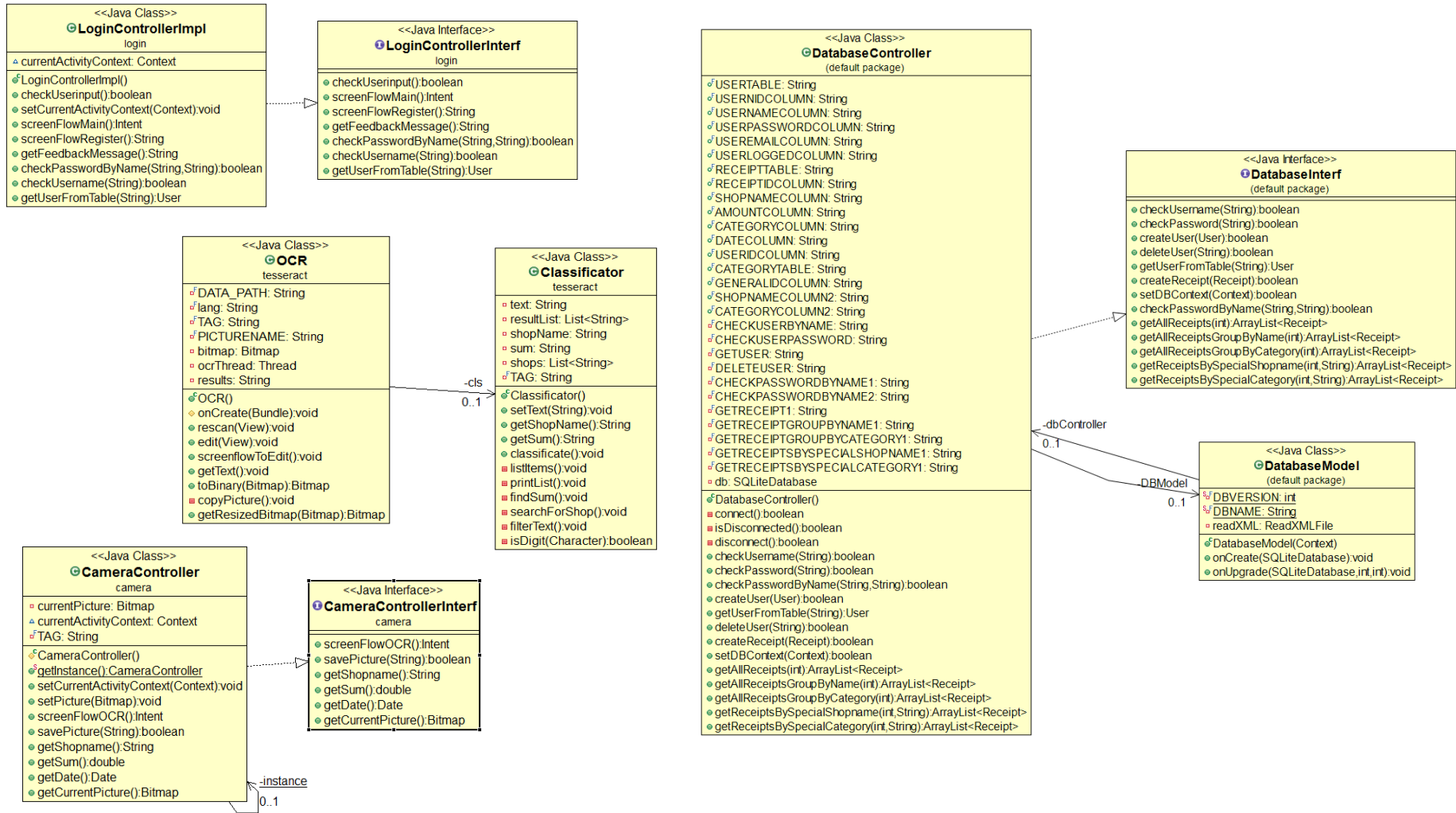
- division into 9 components
- full rebase: controller/implementation



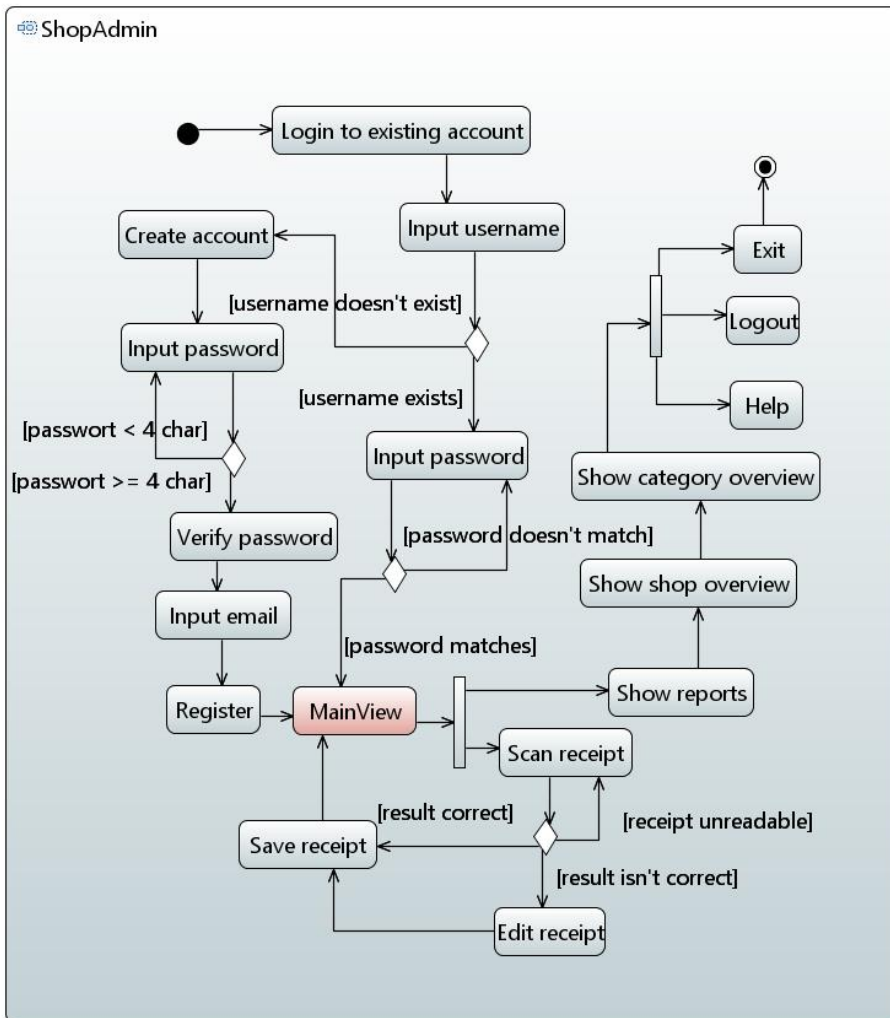
Project structure became more and more complicated...



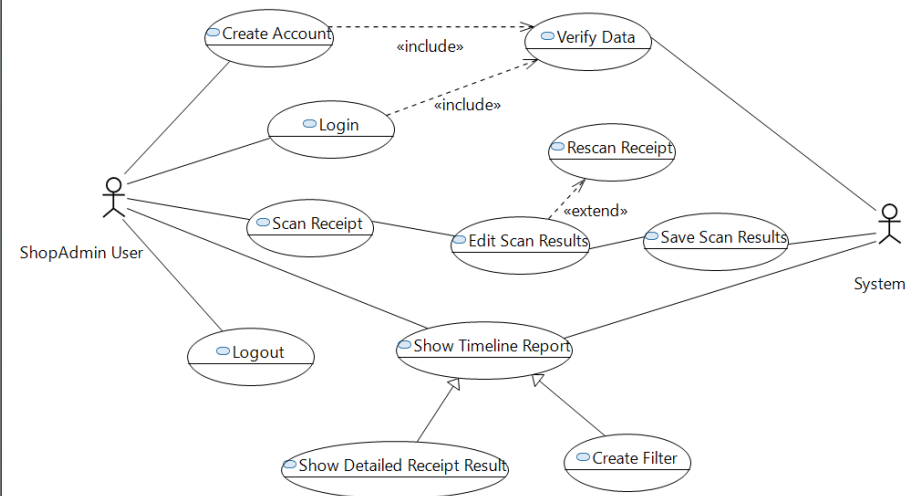
Project structure became more and more complicated...







## Behavior overview



LIVE DEMO

APPROACH

DETAILS

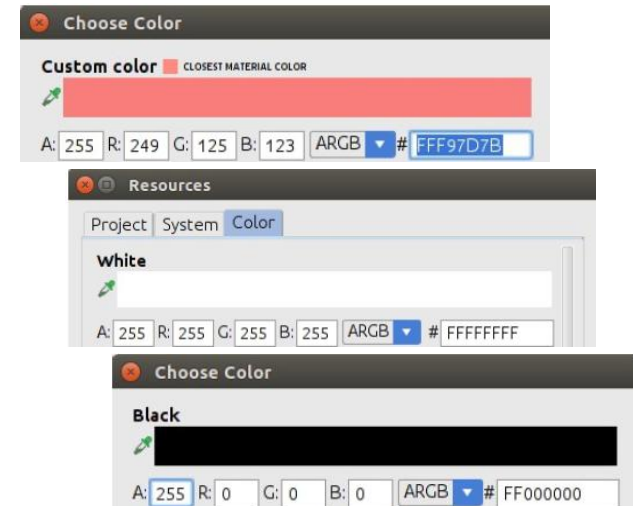
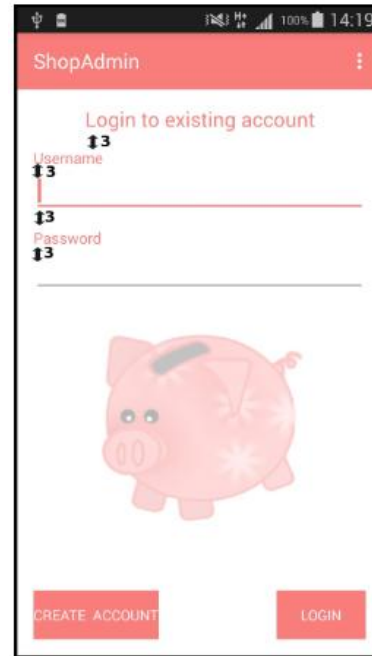
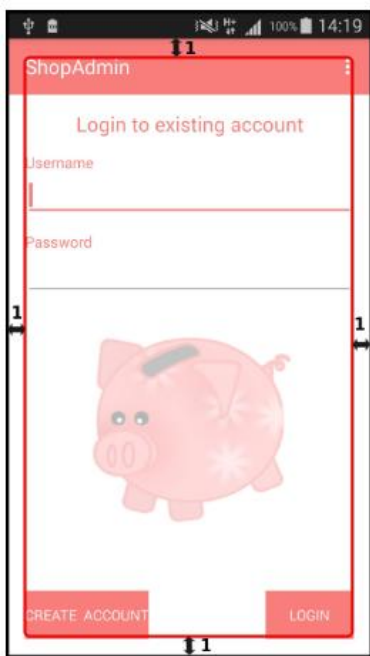
TECHNICAL DESIGN

**ANDROID DETAILS**

RECEIPT EXTRACTION

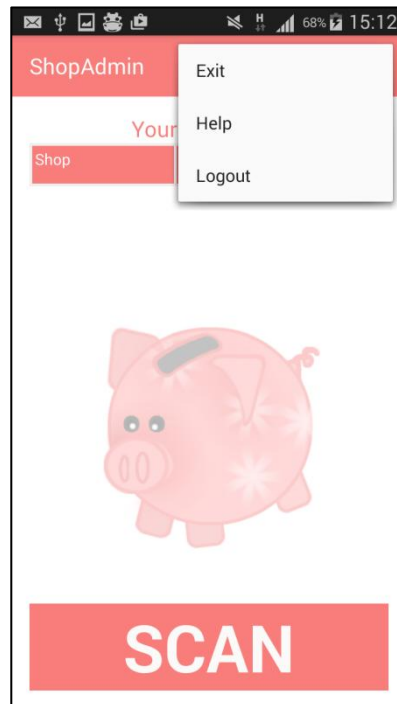
CONCLUSION

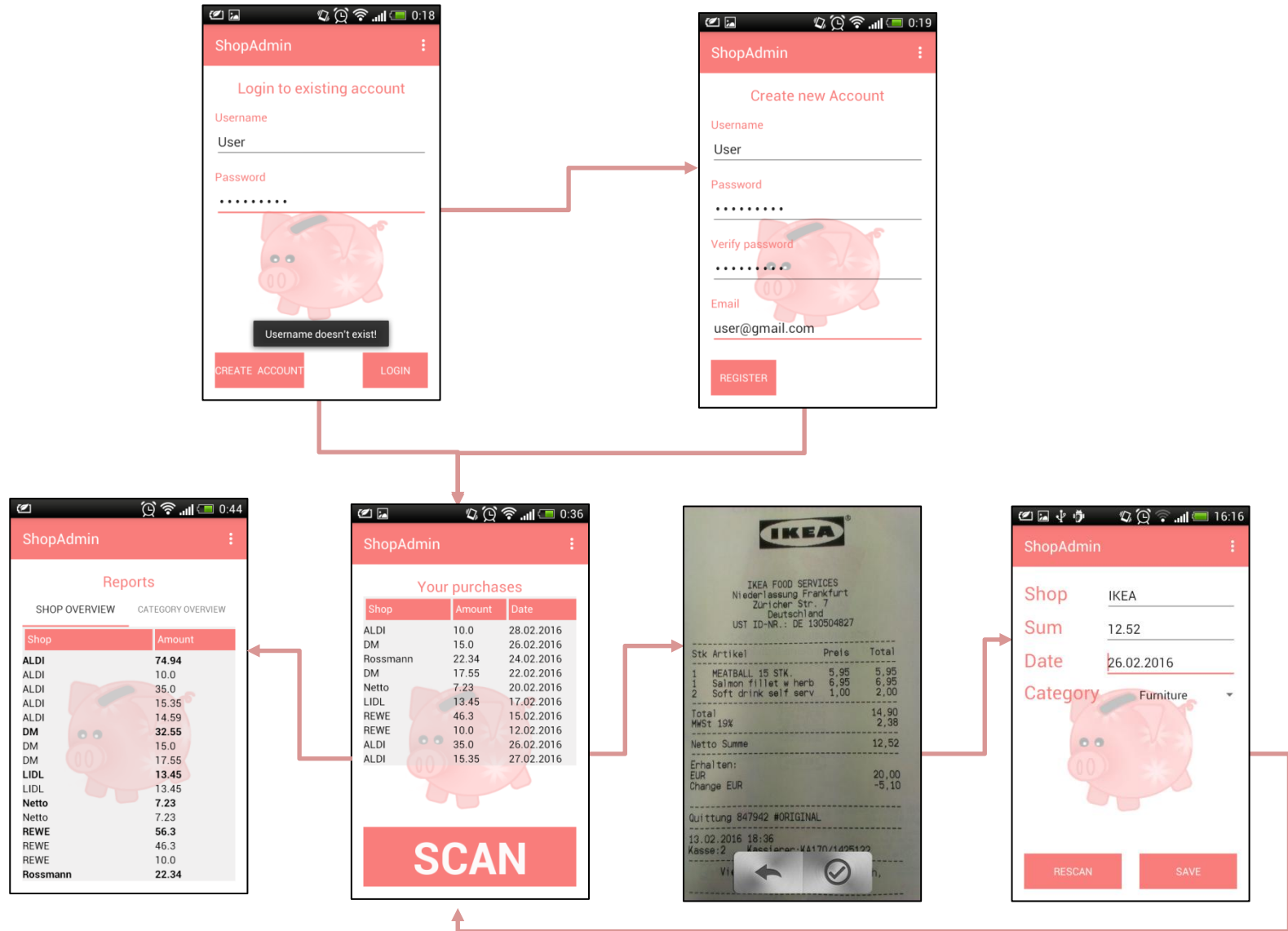
- Colors
- Logo: piggybank (background in the app)
- Pictures for Menu Help



# ACTION BAR WITH OVERFLOW MENU

- Functionality:
  - Exit
  - Help





- Creation of Register and Login View
- Functionality in Register and Login view:
  - verifications
    - user name, password, email, complete input
  - visualize user feedback
  - save user data in database
  - hide and show fields in Register view
  - screen flow to Main view

ShopAdmin

Login to existing account

Username

User

Password

.....

Username doesn't exist!

CREATE ACCOUNT LOGIN

ShopAdmin

Create new Account

Username

User

Password

.....

Verify password

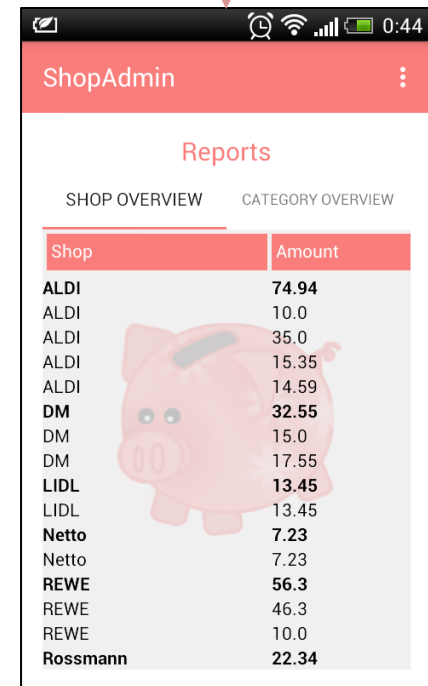
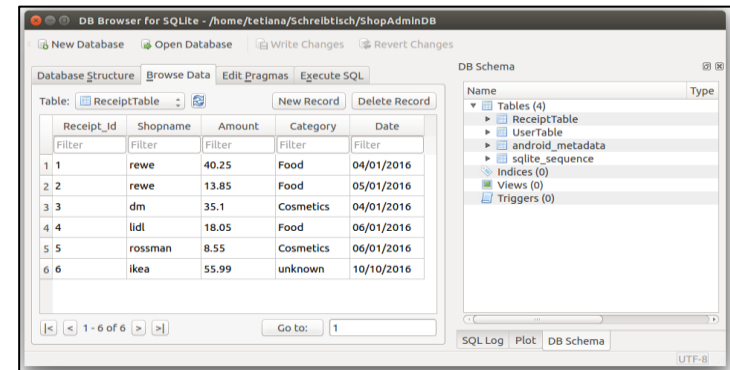
.....

Email

user@gmail.com

REGISTER

- Functionality in Main view
  - get 20 latest receipts from database
- Functionality in Report view
  - get all receipts grouped by name
  - get all receipts grouped by category
  - expand receipts grouped by selected shop name
  - expand all receipts grouped by selected category



## User manual in 7 Steps:

- Step 1 Registration
- Step 2 Login
- Step 3 Main view
- Step 4 Scan receipt
- Step 5 Check results
- Step 6 Main view with summary
- Step 7 Reports view

## User manual “ShopAdmin”



Software User Manual version 0.1.0,  
26. February 2016



LIVE DEMO

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ANDROID DETAILS

**RECEIPT EXTRACTION**

CONCLUSION

- Use camera orientation to rotate picture
- Resize image to 2000 x 1200 pixel
- Colored image to black and white
- Tesseract train language deu\_frak

- Pre analysis
- Filter insignificant symbols
- Combine single letters
- Levenstein-algorithm
- Post result adaption

- Orientation misleading - does not represent picture orientation
- Tesseract can not detect bold or large fonts
- Shop name classification highly depends on name length
- Receipt sum detection is very depending on OCR results

## TESTS & STATISTICS : HOW TO MAKE THE PHOTO

good lighting	
flashlight	without flashlight
90%	85%

bad lighting	
flashlight	without flashlight
85 %	5 %

text style	
normal	bold
90%	1%

folded receipt	
no	yes
90%	30 %

LIVE DEMO

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- Some Key-functionalities couldn't be finished during the semester. Major Topics are:
  - Session handling
  - Group functionalities
  - Online Database
  - Advanced filter possibilities for Reports
  - Advanced picture processing



# ShopAdmin

Control expenses app with receipt scanner

## Vision

Whom is it for?

students or young family

Functionality:

- Manually enter your outgoing transactions
- Scanner auto-extract receipt information such as shop names, data and time, amount

What problems does it solve?

Save time for counting expenses

Challenges:

- Using Android for the first time
- Implementing Tesseract Library OCR engine