TECHNISCHE UNIVERSITÄT DRESDEN

Department of Computer Science Institute for System Architecture, Chair for Computer Networks

Application Development for Mobile and Ubiquitous Computing

Seminar Task
First Presentation

Group No.7
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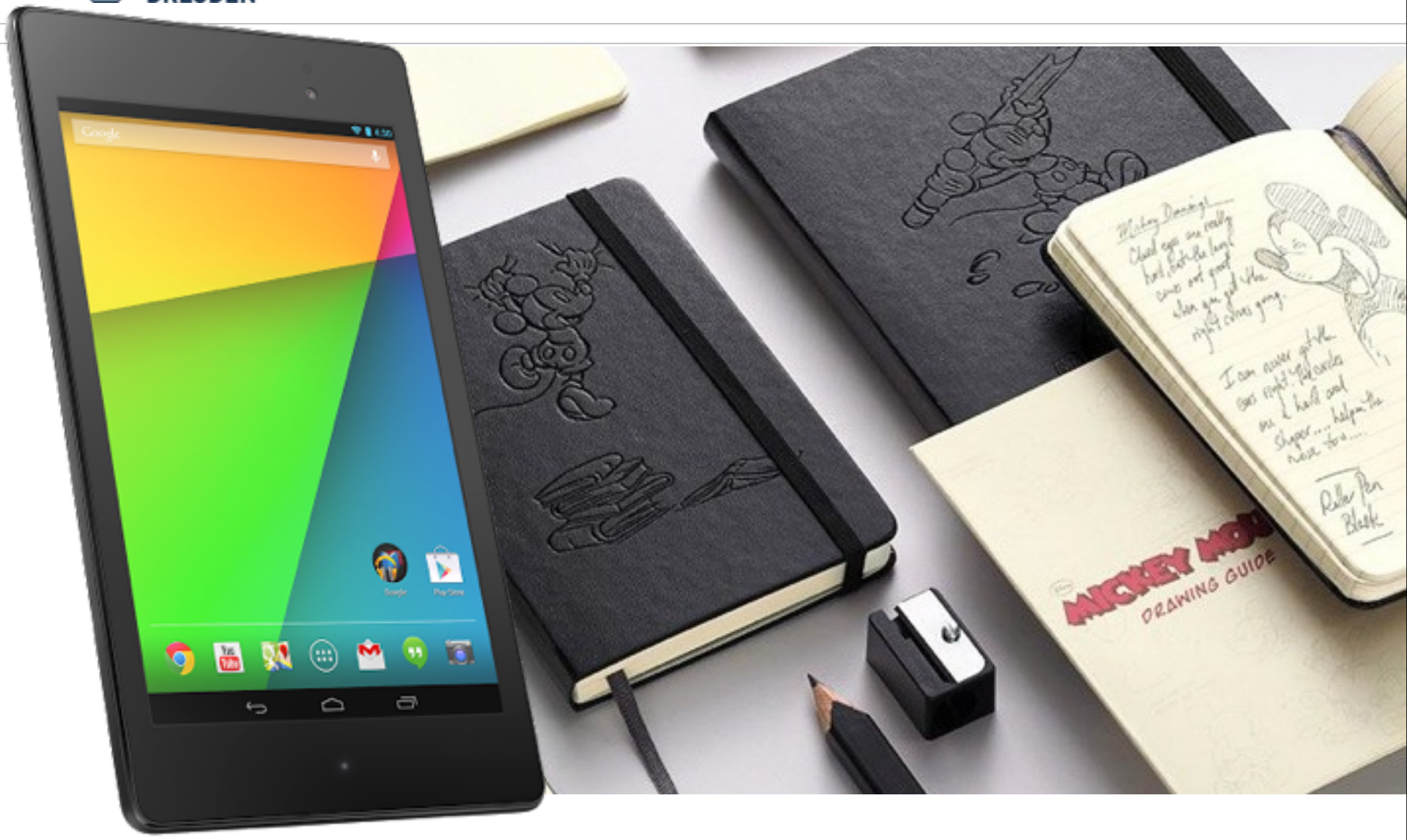
Application Scenario

Here is some problems of traditional notebook:

- You have to make sure which notebook is for that very subject.
- You cannot record on your traditional notebook.
- You have to organize your notebooks.
- It is impossible to search information in your notebook.
- **Your notebook may be burned without backup.**

Application Scenario

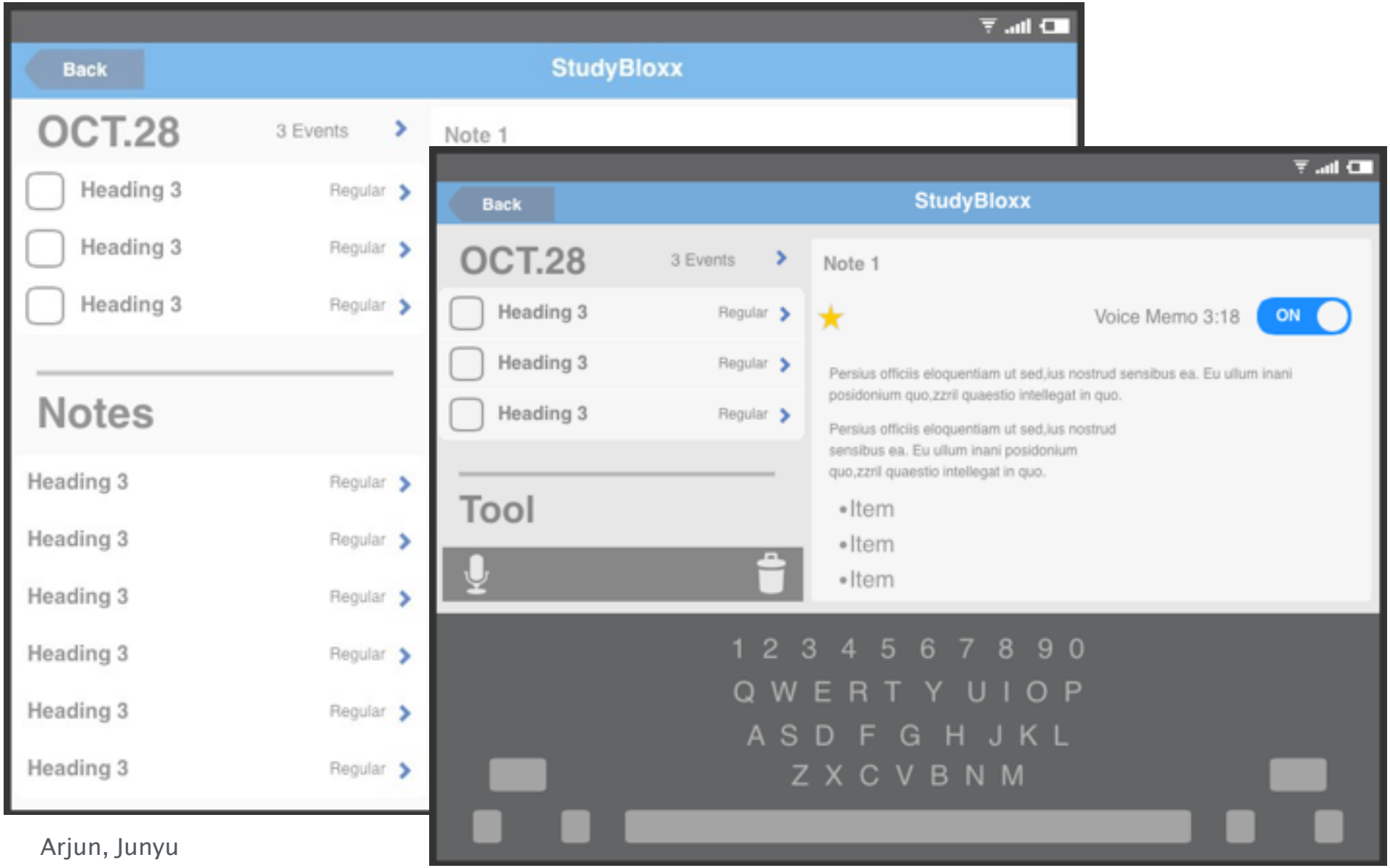


Application Scenario

StudyBloxx is an Android app which assists the user in organization of her notes and lecture recordings based on the user's calendar

- Tablets are being used more and more to **make notes** and may soon be used by students in place of a paper notebook.
- Students want to their **notes and audio recordings** of lectures **organized** as per their calendar.
- Users don't want to tag, catalog and store their material individually but this should be **automated**.
- By matching the time at which the sound recording and notes were made and the **corresponding event in the calendar** the app can know to which the course the recording belongs.
- Indexing and searching can also be added.
- **Backing up** the material online is also a crucial feature.

Mockups



Arjun, Junyu

Technologies

Android SDK(Client)

- Java SE6
- Latest Android Version – 4.3 Jellybean. (Kitkat will be released soon)
- Tablet compatibility by using Fragments.
- Android App Compatibility library to backport features to older versions of Android

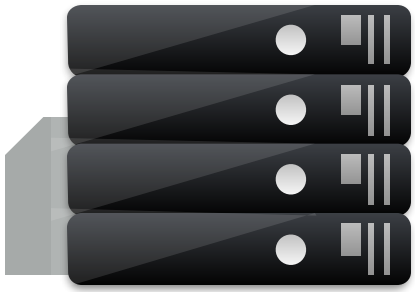
Django(Server)

- Python based framework for web applications.
- Feature-Rich and flexible.
- API generation facilities.
- Uses Model-View-Controller architecture.

Architecture

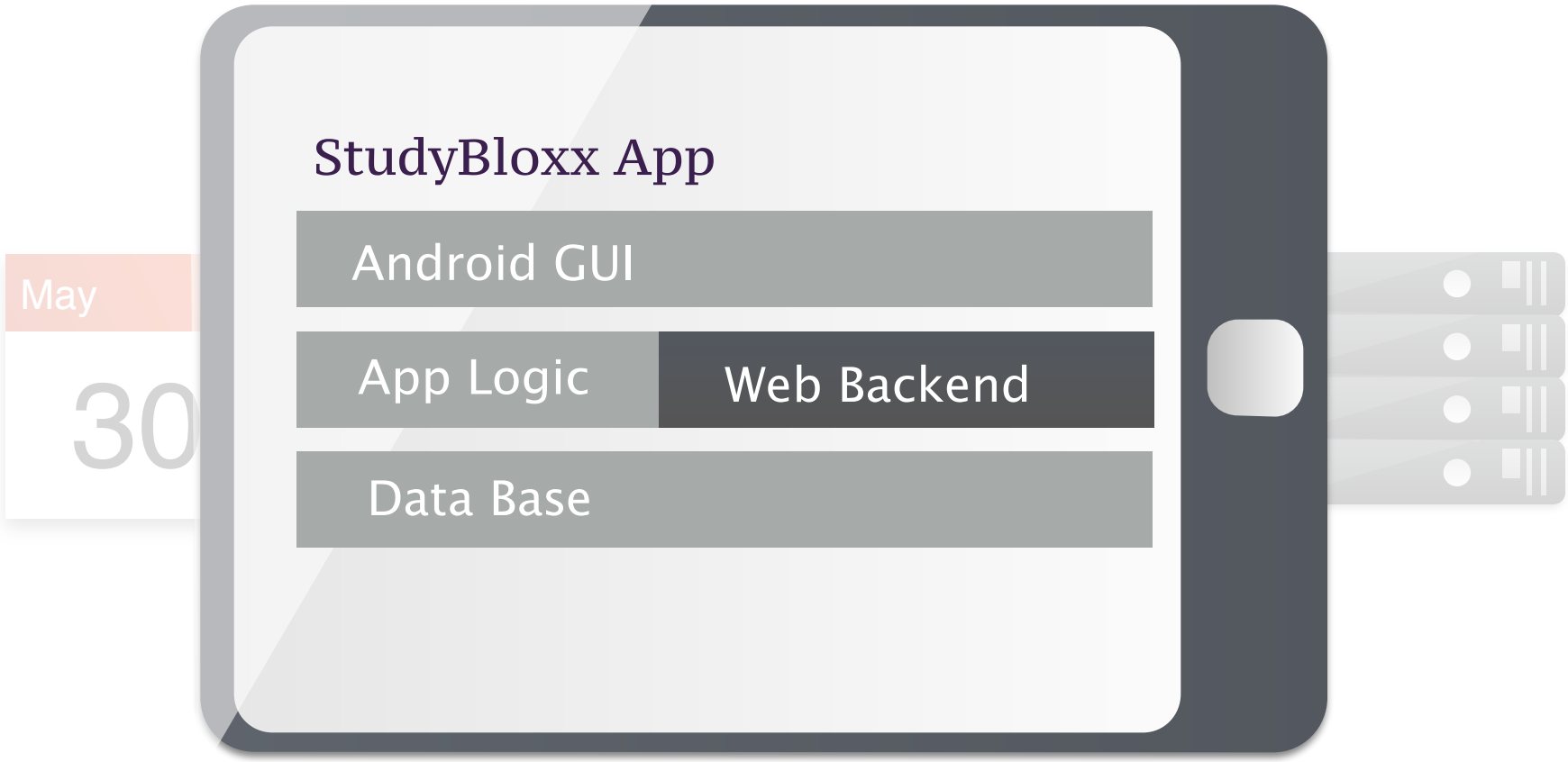
Calendar Provider

StudyBloxx App

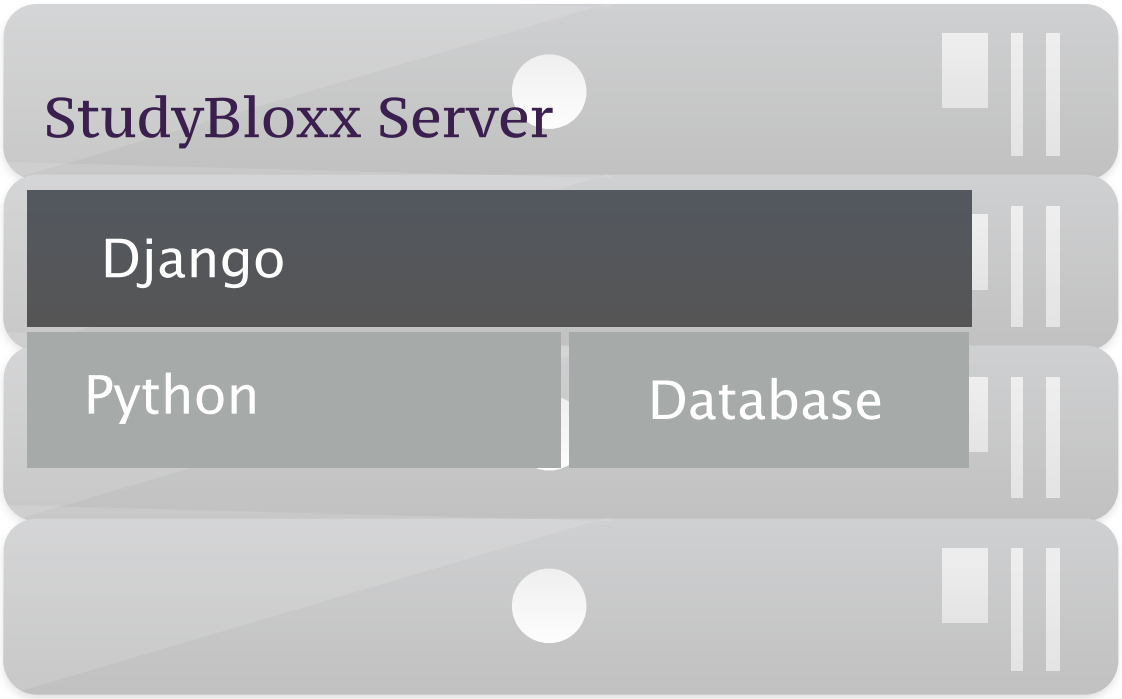


StudyBloxx Server

Architecture



Architecture



The Challenges

- **Processor Resources** – Older versions of Android do not have powerful processors. Sound recording is sometimes poor if not done correctly.
- **Battery Consumption** – The phone screen is locked and the apps in the background are stopped to save power. Careful use of locks to prevent this.
- **Network data transfer** – The auto-back up should happen only through Wi-Fi so that the user's data plan is not utilized. This can be turned on and off.

Work plan

1. Complete analysis of the architecture with UML diagrams, interaction diagrams and control flow diagrams.
2. Separate the client and server into it's components and map them to corresponding constructs in Android and express.js.
3. Implement the components and test features on both the client and server side as they are completed. Ballpark estimate of this path is:
    A. Sync and display available courses on server and client.
    B. Basic note taking functionality using stylus.
    C. Basic sound recording functionality.
    D. Upload and sync files with the web backend
    E. Implement Web based UI to view uploaded notes and recording and share with classmates.(If time permits)

Questions?