# Application Development for Mobile and Ubiquitous Computing
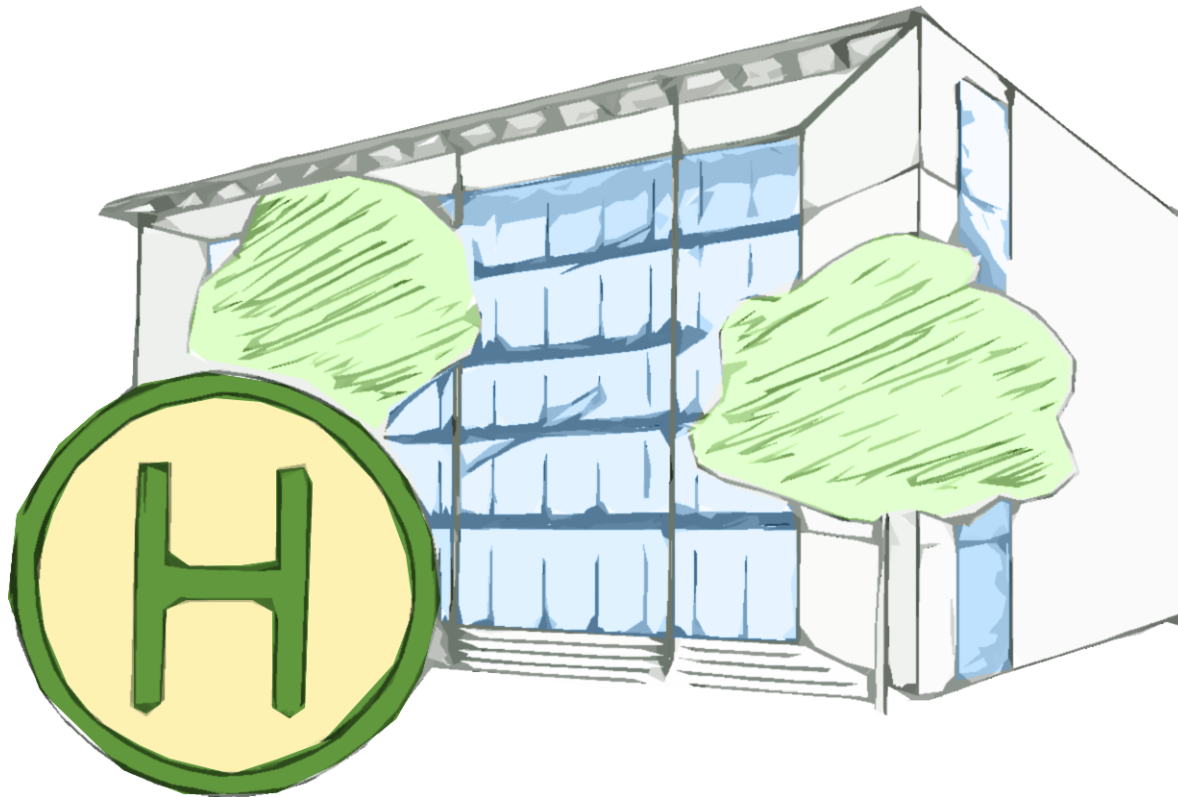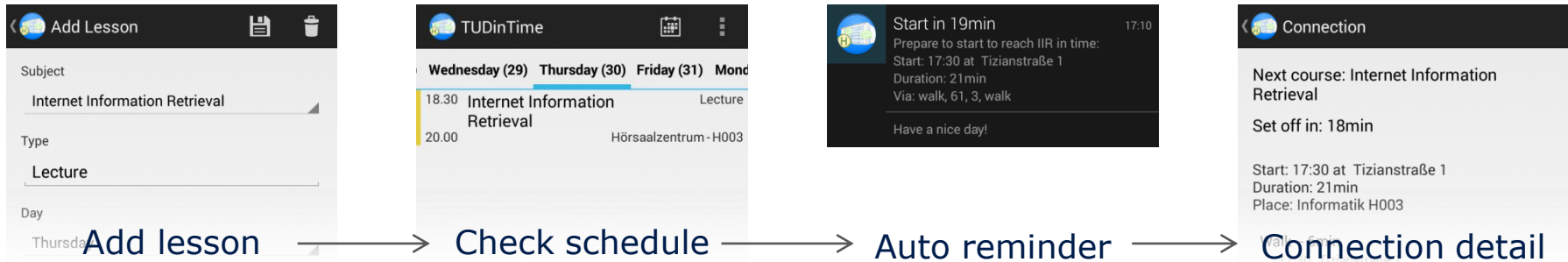
# TUDinTime

# Final Presentation

GroupNo. 5
Team: Tom Horak, Christina Korger

**TUDinTime:** timetable application for TU students with auto journey planner

**Add lesson** → **Check schedule** → **Auto reminder** → **Connection detail**
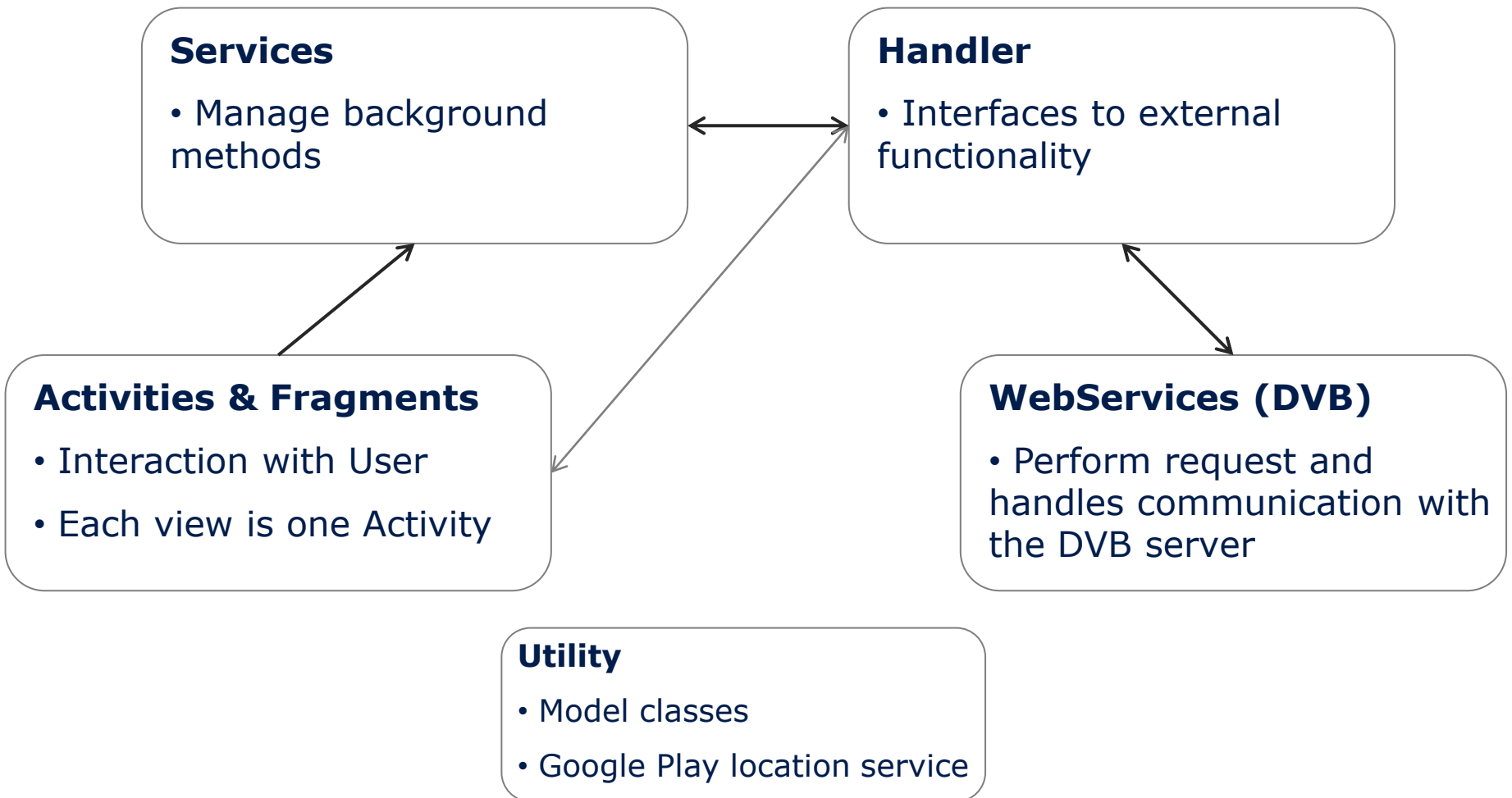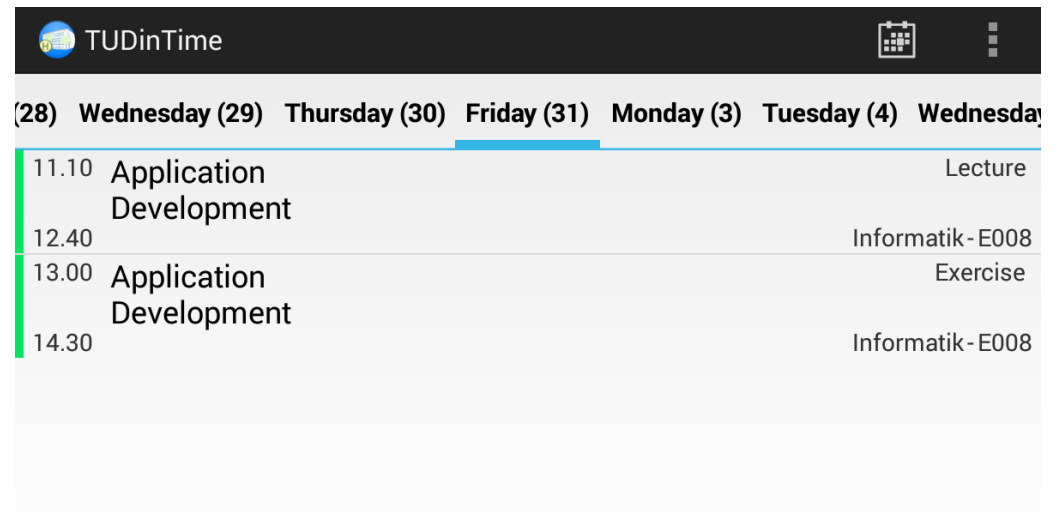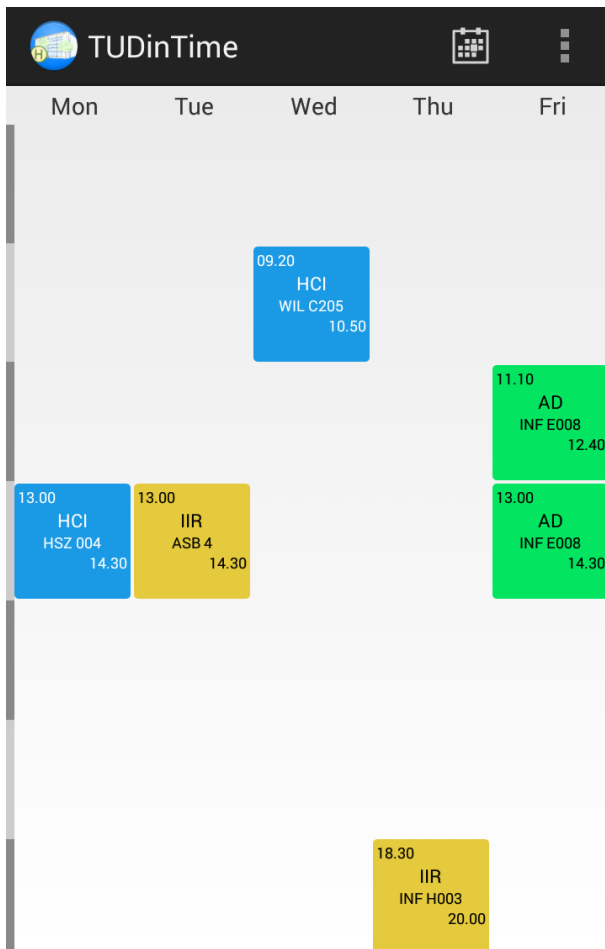
1. Add lessons to timetable with time and room number

2. Service loads connection from current position in background (based on schedule)

3. Service sends reminder some minutes before user has to start

4. View details of connection via click on notification

**Add lesson** → **Check schedule**

**Auto reminder** → **Connection detail**
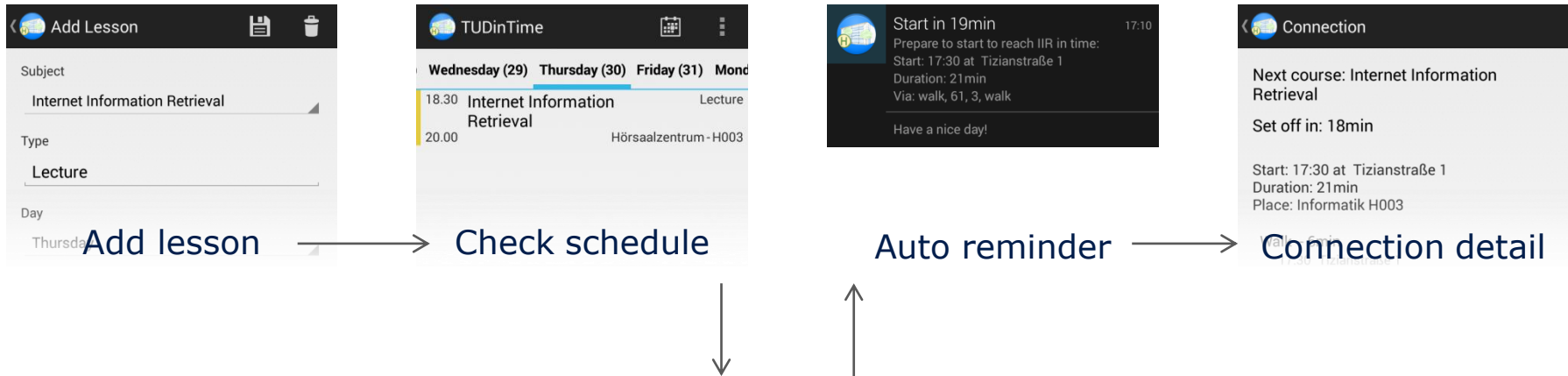
*2 hours before lesson start:*

1. Retrieve current position of user

2. Retrieve address of building

3. Perform connection request to DVB

4. Prepare notification

**TECHNISCHE UNIVERSITÄT DRESDEN**

**Services**

• Manage background methods

**Handler**

• Interfaces to external functionality

**Activities & Fragments**

• Interaction with User

• Each view is one Activity

**WebServices (DVB)**

• Perform request and handles communication with the DVB server

**Utility**

• Model classes

• Google Play location service

Timetable View:

• Day and week view

• Supports both landscape and portrait mode

Add subject and lesson:

• List of buildings is provided by app

• Time slots are predefined

**TECHNISCHE UNIVERSITÄT DRESDEN**

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**Settings**

**GENERAL**

Silence
Switch phone to silent during lessons ☑

Vibrate
Turn on vibration ☐

Notification
Notify on journey details automatically ☑

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**Connection**

Next course: Internet Information Retrieval

Set off in: 18min

Start: 17:30 at  Tizianstraße 1
Duration: 21min
Place: Informatik H003

Walk -- 6min
    17:30  Tizianstraße 1
to  17:36  Zellescher Weg

Li. 61 (Dresden Tharandter Straße) -- 3min
    17:36  Zellescher Weg
to  17:39  Nürnberger Platz

Li. 3 (Dresden Coschütz) -- 1min
    17:42  Nürnberger Platz
to  17:43  Münchner Platz

Walk -- 8min
    17:43  Münchner Platz
to  17:51  Nöthnitzer Straße 46

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Settings and connection info:

• Possibility to turn off notifications

• Notification shows short info, details are displayed in activity

**Start in 19min**                    17:10
Prepare to start to reach IIR in time:
Start: 17:30 at  Tizianstraße 1
Duration: 21min
Via: walk, 61, 3, walk

Have a nice day!
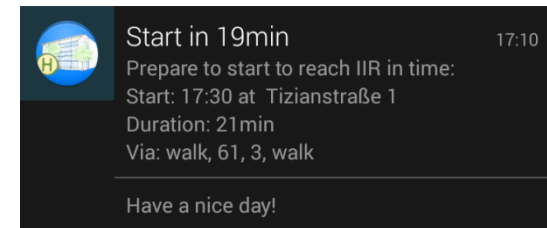
- Localization:

    - Position is checked for every course at least twice

    - Using Google Play localization service

    - Highly efficient, use of concrete technology depend on user


- Network:

    - Prefetching to prevent network problems

    - Reload of connection only when position changed

- Prefetching strategy
  - …aware of position
  - …aware of resource handling
  - …aware of good timing
  - → No perfect strategy

- Flexilibity versus Complexity
  - …adapt well in every situation
  - …don't be to complex for user
  - → Hard to find good tradeoff

- Our Experiences with Android
  - Android needs some attention, especially for non-trivial layouts
  - But is well documented and supported
  - And offers good system services (Location, HttpCon)
  - Development with emulator is painful

- Our Experiences with our App
  - No time for extensive testing
  - Not fully proofed for (students) daily routine yet

- TUDinTime
  - Works well for the first version
  - A lot of possible extensions
    - Offer takeoff notification also for preference "bike"
    - Offer notifications also for specifieable home location
    - Extend for other universities and cities' public transport systems