



Application Development for Mobile and Ubiquitous Computing

Initial Presentation

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EXAMPLE

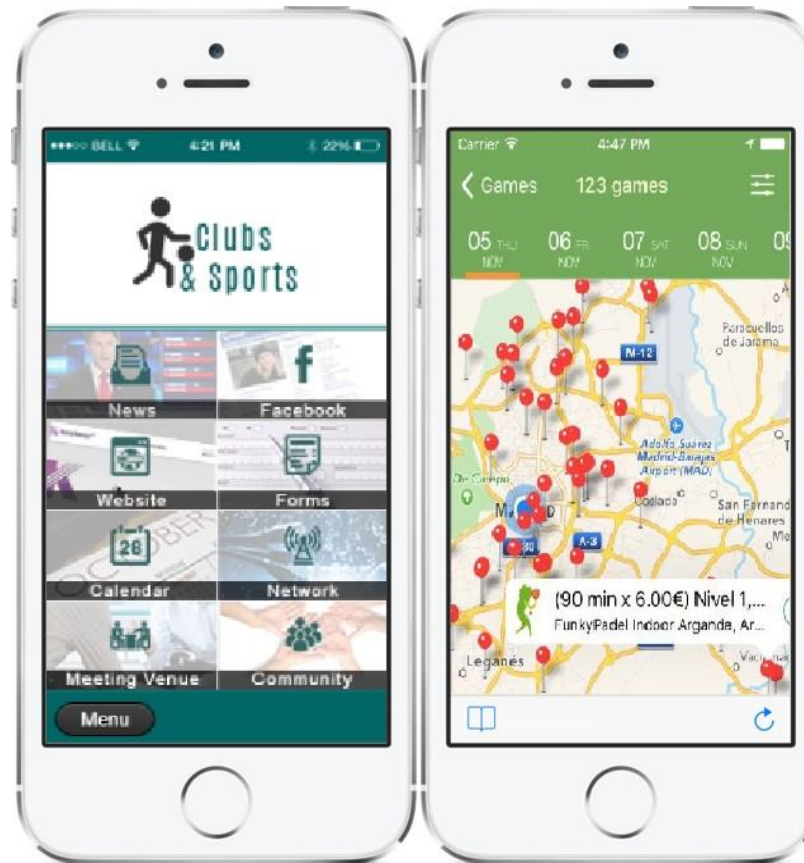
Sporty, Sports App

- The University Sports Center (abbreviated to USZ) has the task of providing students and employees of the TU Dresden with a variety of sports program.
- **Problems:** many websites ⇒ user has to search each site
- **Solution:** convenient UI for reaching results effectively



The collage shows four screenshots illustrating the current website and a proposed mobile app interface:

- News:** A screenshot of a news article titled "SPORTPROGRAMM WINTERSEMESTER 17/18" dated Sep 14, 2017. The text states: "Bald startet wieder ein neues Semester und damit auch ein neues Sportprogramm."
- Sportangebot:** A screenshot of a sports offer page for Wintersemester 17/18 (09.10.2017-04.02.2018). It features an alphabetical index (A|B|C|D|E|F|G|H|I|J|K|L|M|N|O|P) and a list of activities under 'A': Aerobic Boxing, Aerobic Mix, Aikido, and Akrobatik.
- Sportpartnerbörse:** A screenshot of a sports partner exchange board. It includes a search form with fields for "Sportart:" (set to "egal"), "sie suchen:" (set to "egal"), "Kenntnisse:" (set to "alles anzeigen"), and "Alter:" (set to "egal" with a "bis:" field also set to "egal"). A "Datenbank durchsuchen" button is at the bottom.
- Sportstätten:** A screenshot of a mobile app interface for finding sports facilities. It shows a list of locations: "F) Sporthallen Nöthnitzer Str.", "Halle I", "Baechvolleyball-Anlage", "Halle II", and "Nebenträume". A red star icon is placed above the app interface, with a red box containing the text "Find games/events nearby". The app interface also shows a map with red location pins and a "Games" section with "123 games" and a calendar view for November 2017.





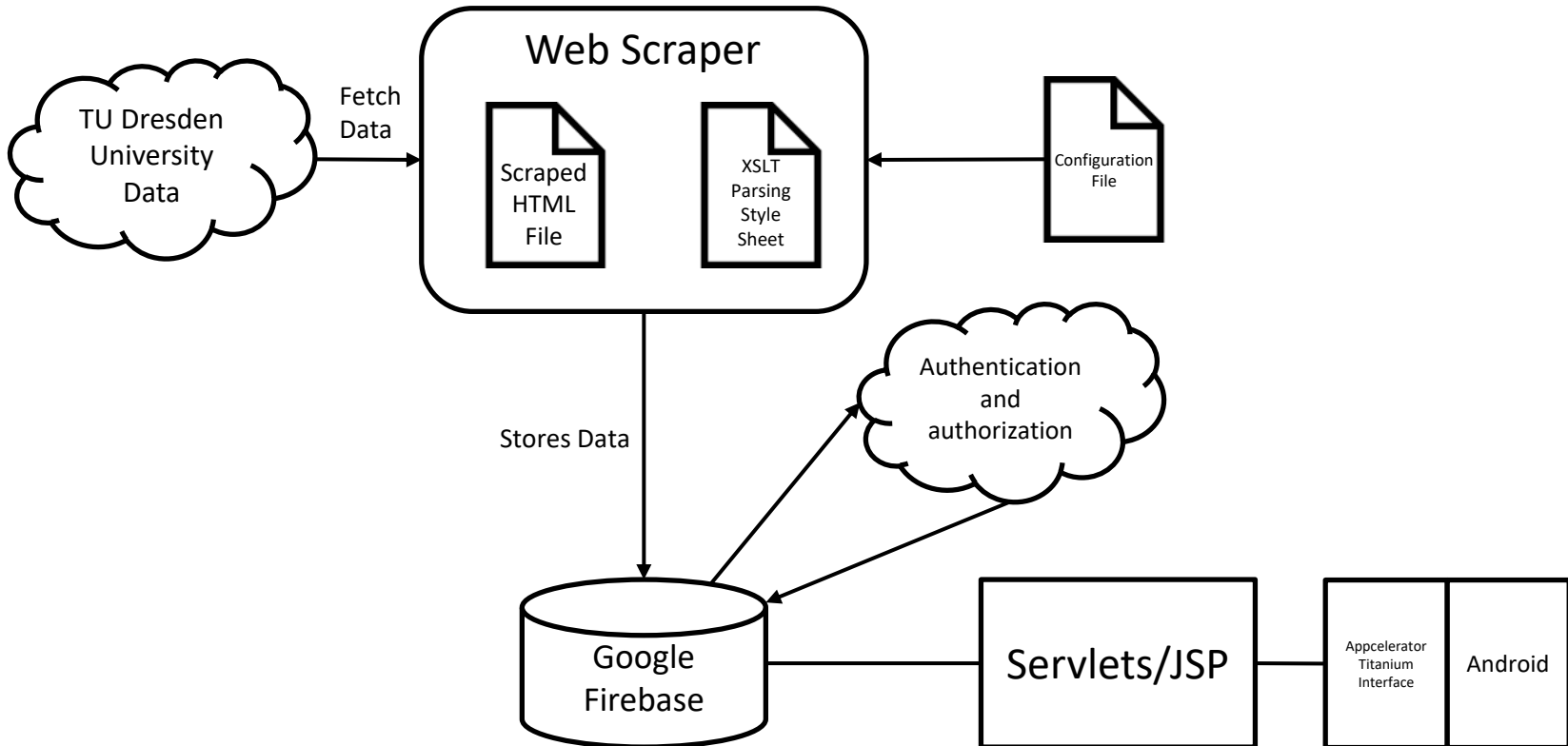
- Connectivity Challenge
 - Reduce the amount of data to be transferred via the wireless link (use server component for search, processing and aggregation of data to reduce network traffic over wireless link)
- Context:
 - Detect type and speed of network
- Adaptation:
 - Introduce proxy on server side for data fetching and preprocessing
 - Reduce quality and size of images
 - Lazy evaluation on client side (text first, images later)

- Offline Challenge
 - Provide some functionality when offline (e.g. Bookmarked sports, offline-notifications, booked events in calendar)
- Context:
 - Detect if your App is online or offline
- Adaptation:
 - Caching of Data
 - Use cached data if application is offline, Update cache if connectivity is good
 - Persistently store information from cache

- Usability Challenge
 - Present lift information properly on Nexus 5 and Pixel XL display
 - Minimize effort for user input
- Context:
 - Detect screen size and device type
 - Detect user location with GPS
- Adaptation:
 - Adapt layout for iPhone and iPad
 - Auto fill „Start field“ by using GPS location
 - Cache search queries

- Client:
 - Android on Nexus 5S
 - (some additional HTML parsing on external websites)
 - we will keep to TU Dresden corporate design and style guide
 - GPS for location tracking
 - Use Facebook Graph API for searching events nearby

- Server:
 - Google Firebase



- Sporty
 - Enroll in University Sport Courses, Find Sport Partner, Find Games Nearby
 - data scraped from USZ page

