TECHNISCHE UNIVERSITÄT DRESDEN

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

Application Development for Mobile and Ubiquitous Computing

Seminar Task

Third Presentation

GroupNo 4
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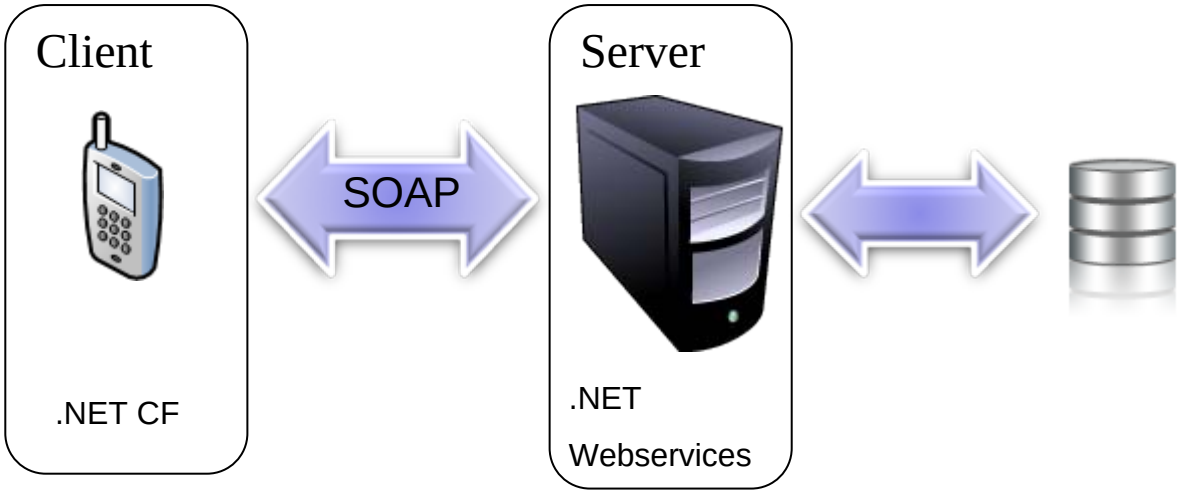
Application Scenario

- Supermarkets!!!
- Small local storage, but big central storage
- The store has to require items to the central storage and these must be selected and sent
- Workers in the central storage receive a list of items regarding each request, select all the items and send it to the requesting store

- How to do it?
  - Mobile devices using a .NET application and wireless LAN connection
  - Servers running .NET WebServices
  - Database
  - SOAP for communication between client and server



Prototype(1)


Login
Username
Password
Login


Main Form
Items
Get List
N/A Item
1
2
3
4
5
6
7
8
9
Cl
10
Selected
Logout


MY APPLICATION
Get List
Scan the cart barcode
Register Cart

Prototype(2)


Main Form
Items
product1 - 1
product2 - 2
product3 - 3
product4 - 4
product5 - 5
product6 - 6
product7 - 7
product8 - 8
product9 - 9
product10 - 10
Get List
N/A Item
product10
10
1 2 3
4 5 6
7 8 9
Cl 10
Selected
Logout


Main Form
Items
product1 - 1
product2 - 2
product3 - 3
product4 - 4
product5 - 5
product6 - 6
product7 - 7
product8 - 8
product9 - 9
product10 - 2
Get List
N/A Item
product10
2
1 2 3
4 5 6
7 8 9
Cl 10
Selected
Logout


List completed
ok
N/A Item
1 2 3
4 5 6
7 8 9
Cl 10
Selected
Logout

Challenges

- Mobile devices restrictions due to:
  - Small screen
    - So we want to keep the information simple
  - Maximize usability
    - Few “required” buttons to perform a task
    - Some “optional” buttons to make the task easier
      - For instance number buttons to avoid using the keyboard
    - Colors to distinguish buttons so the user does not need to read
  - Low processing power (to process big lists coming from the Web Services)
    - Simple information to process
    - WP7 architecture supports only SOAP messages, that is bad ☹
  - Data security/safety regarding transmission and use of the device by others
    - Use of certificates

Lessons Learned

- Platform
  - Easy to use
  - Many ready-to-use components
  - Many limitations
    - Internet access only by Web Services/SOAP
    - No multithreading/background thread
    - No DB on the client
  - Really good if the application meets the limitations, bad otherwise