Mobile Services Exam Projects

F. Ricci
2010/2011
Application Domains

- **For sale-based organizations:** provide information to their salepeople in the field, allowing them to bring up live pricing and estimates.

- **For health-care orgs:** provide access to, formularies, policies, procedures, patient charts at the patient’s bedside.

- **For real estate:** provide potential buyers with live listings of similar properties nearby, information about the house, school information, average home values nearby, while touring a property.

- **For local government:** increase awareness and community participation, to elicit feedback on public projects or weight important issues facing the community.

- **For retailers:** provide instant points of purchase, provide ongoing customer support, link to online reviews, while the customer is holding a product in her hand.
Decide Together a TV Program

- **Functions**
  - Two or more people (e.g., a family) should be able to search in a TV program list
  - Search program by keywords or metadata (genre)
  - Browse detailed information on the program (plot, pictures, etc.)
  - Select one program and make a proposal to your peers
  - They can reply with 'yes' or make a counter offer
  - Design a process that will "converge", i.e., they reach a common choice
  - Store the selected program in a local database (all the peers)

- **Implementation details**
  - Find a list of TV programs from the web or build your own sample db
  - Communicate with your peers with SMS (or sockets, if you have wifi).
Rooms Management

- **Functions**
  - There are some rooms – with various features - that are available on time slots
  - Users can ask the system to reserve a room for them with certain particular features (capacity, projector, blackboard, etc.)
  - Search for available rooms
  - The system offers the rooms better suited for the request
  - The user can accept or reject the system offer

- **Implementation details**
  - Implement everything on mobile devices – also the server with all the rooms data
  - Store the rooms schedule in a record store
  - Interacts with clients with either via socket, or http, or SMS.
News Recommendations

- **Functions**
  - Download a list of News from a RSS feed (e.g. BBC [http://newsrss.bbc.co.uk/rss/newsonline_uk_edition/technology/rss.xml](http://newsrss.bbc.co.uk/rss/newsonline_uk_edition/technology/rss.xml) (better: a source of local news for Bolzano)
  - Browse the result list
  - Browse detailed information about the news
  - Select a news and store it in a local store (organize the news in categories)
  - Implement a function that **suggests** some items based on the similarity to some of the news in your local store

- **Implementation details**
  - Use an existing RSS feed
  - Parse the XML using an existing library like kXML
  - Exploit the RecordStore library
Task List Alert

- **Functions**
  - Imagine a *particular* Field Force Automation situation and design the application for that scenario: e.g., fuel distribution, parcel delivery, care giver ...
  - Add, delete, modify a task (and its features)
  - Add, delete, modify a task category
  - View tasks filtering by date, category, keyword, location (according to the application)
  - Build an alert function that alert you
    1. when a task is due
    2. you are in a good situation to perform the task (e.g., approaching the right location).

- **Implementation**
  - Use the MIDP record Store, and the location API
Care Giver

- **Functions**
  - Service Request (an ill person in need of assistance)
    - User sends help request by pressing a key
    - She gets a response from the care giver (read and confirm receipt)
  - Receive directions from care giver
    - User receives an alert message (e.g. “take the pills”)
    - The alert is repeated if no confirmation is given
    - User acknowledges the receipt and the acceptance to the caller
    - After a timeout the caller is warned that the receiver has not acknowledge the request

- **Implementation**
  - Use SMS for exchanging information between the care giver and the user
  - The MIDlet must listening for incoming SMS and make the interaction simple and easy to manage.
Route Geo Tagging

- **Functions**
  - Record a sequence of positions and related notes (picture, comment, features) during a route (RouteStage) – imagine a specific application scenario (e.g., annotation of a bike route or mountain path)
  - Upload the RouteStages to an Exist DB and keep them organized in an Itinerary
  - Retrieve the itineraries that are closer to you and with features that you are interested in (length, slope, terrain..)

- **Implementation**
  - Position can be obtained using the location API
  - Use Exist server APIs for uploading and downloading RouteStages
  - The RouteStages are organized in annotated collections

Requested by www.ectrlsolutions.com
Around me

- **Functions**
  - Download a list of geotagged Hotels, Restaurants, Attractions from an XML Feed that will be provided
  - Retrieve the elements that are closer to the current location of the user or to a position specified manually
  - Select elements and store them in a local store - organize the selected elements in the calendar
  - Implement a function that **suggests** additional attractions and restaurants according to proximity and free slots in the calendar (taking into account opening hours)

- **Implementation details**
  - Parse the XML using an existing library like kXML
  - Use Exist server APIs for uploading and downloading XML data

Requested by www.ectrlsolutions.com
Orienteering

- **Functions**
  - Implement a game where a user gets a mission on the mobile phone
  - The mission consists in reaching a certain number of targets
  - When you get a target you get the description of the next target (e.g., find a location where there is x)
  - The mobile must log your actions
  - At the end of the game the mobile debriefs the game
  - Send the mission execution log to another user

- **Implementation**
  - Position can be obtained using the location API
  - The missions are stored locally by the application and randomly assigned to the user.
Domotics (Home Automation)

- **Functions**
  - Control the state of your heating system (raise the temperature in one room, cover/uncover the solar panels, start-up/shut-down the furnace, ...)
  - Receive messages from your heating telling you how much you are spending
  - Define rules that switch-on/off based on your location [http://www.technologyreview.com/blog/mimssbits/25752/?nlid=3507](http://www.technologyreview.com/blog/mimssbits/25752/?nlid=3507)

- **Implementation**
  - Build a nice GUI for this application (simple!)
  - Use SMS or sockets connections with push
  - Simulates the events in the furnace and the actuation of commands
  - Imagine that in the house there is another "phone" that communicate with your mobile.
Generalities

- The project should require more or less 40 hours
- The project “deliverables” includes:
  - The code (one zip file): must be deployable in the Java ME SDK
  - If you need a server component – implement and upload it as you like, but should be accessible from FUB
  - One text file (readme.txt) describing all the required steps to install and run the program on the SDK
  - One document (pdf file, less than 3000 words) describing:
    - The system functions and the human computer interaction: what is doing and how a typical interaction proceeds (use snapshots from the GUI)
    - The structure of the code (classes and files): describe the role of each class and the main methods
    - The major technical problems that have been tackled and how these have been solved.
About the grade

- I will evaluate the following elements:
  - **Usability of the system** (no errors, no strange commands, easy to learn, enjoy using the system)
  - System functions coverage – with respect to the project description
  - Quality of the presentation
  - Quality and completeness of the report
  - Deployment and running - how fast I will deploy and run the system on my PC without errors

- Present your project at the last class if you want to pass at the winter session

- The presentation must be contained in 15 mins and must illustrate the same points described in the report

- **If you reuse existing code you must clearly write what code you used and what have you done on top of that!**
Next steps

- Build a group of 2 people or work alone
- Select a project among those described here
  - Or propose some changes to one of those
  - or write down a project description in a similar way
- Send an email to me (as soon as possible) with the following data
  - Group members: names and id numbers
  - Selected project: if it is not one of those suggested include the project description, or if you propose some changes (new functions) please describe them in the email.