"Resource Search - Meeting" was specified as part of the UbiCompForAll project in order to identify potential users of the technology that will be developed in the project and to generate design ideas for the services these users might compose.

Summary

Anne composes a service which makes it quick and easy to invite friends who are currently in the city centre to meet her at a café. Also, she composes a service for finding and reserving tables at a nearby café. She often uses the two services in combination.

Problem description

This scenario is the second of three scenarios which are related in that they all contain some elements of resource search and are located in the city. This scenario focuses on arranging meetings with friends, and café table reservation, while the related scenarios cover parking and planning of shopping.

Support for composing services containing an element of resource search and reservation is of interest for the end user who wants to simplify or automate frequent reservation tasks, and is also of interest for providers of the resources who benefit from the resources being booked.

This scenario is related to the domains of social networking, travel, eating out, and resource allocation.

Main actor (s)

Anne (24) is a student in the master program in history. Anne rents an apartment within fifteen minutes walking distance from the city, together with two other students. She likes to meet friends and to go shopping, but always plan the shopping upfront.

Per (27) is a friend of Anne. He is a master of business administration. He lives alone in an apartment in the suburbs of the city. Per owns a car, and likes to drive when he visits the city. He is a helpful person, and enjoys spending time with his friends. Per prefers to improvise in his private life.

Activity scenario

Anne is also in the city this Saturday morning. She decides that it would be nice to meet some of her friends at a café, and activates her Meet Me Now service which sends invitations to all of her friends which is currently located in the city centre. While he is browsing the new CD arrivals in a record shop, Per receives Anne's invitation at his phone, and he accepts the invitation. Anne receives replies from Per and three other friends who accepts the invitation. She uses her Find Café Table to find a table at a café nearby for them, and confirms an offer to reserve a table for six at Richs café for the next two hours. She then uses the Meet Me Now service to notify her friends about the choice of location. Per and her other friends receive this information as an update to their calendar entry for the café visit with Anne.

Composition scenario

Before she composed the Meet Me Now service, Anne used to send text messages to all of her friends to arrange meeting them. However, she often experienced that some of the friends were

not in the city, and many replied in a manner which required her to send individual replies to them. To avoid spending a lot of time writing text messages she decided to compose a service. She first searched for similar services on the net, and found one service composition for organising meetings and another which located nearby friends and displayed on a map. She combined ideas from these two services to create her new Meet Me Now service.

On some occasions Anne experienced that it was difficult to find a café table when meeting her friends. She decided to make a new service for reserving tables. She considered to include it in the Meet Me Now service, but decided that she would not always use them in combination, and thus composed the Find Café Table.

Alternative stories

Users with other preferences than Anne could have composed variants of the meet me now service, which e.g.:

- ignores the table reservation aspects, and allows inviter to choose the meeting location before sending the initial invitation to the friends

- presents a list of cafés and/or current events in the city to the friends invited, and allows them to state their preference

- opens a chat with the friends accepting the invitation which is used to agree on the time and place to meet

Properties

The variations between the scenario of Anne and the alternative stories show that there are several useful ways of composing services for meeting. Personalised compositions would be preferable to a generic application because it can automate and directly support the different variants which depend on personal preferences of the users.

One challenge is that the Meet Me Now service requires access to the current position of friends. Legally, this probably requires the consent of the friends.

Another practical challenge for creating a working version of the Find Café Table service which could be used by real users is that it depends on resource allocation / information services for café tables. While creating prototypes of these services should not be a problem, having real working services would require involvement of multiple providers of café table reservation.

External evaluation

Trådløse Trondheim has investigated which related systems exist for table reservation, and whether the proposed services could connect to the cash register systems to keep track of reserved tables. The conclusion is that it is possible, but it will probably require implementation of an online module for retrieving the required information from the cash register system.

There are many different systems for cash registered in restaurants/bars. Cash registers based on PCs with touch screens are becoming more frequent. The systems depend on the provider, and different modules are available for different systems. An important function of such systems is to send orders for food to the kitchen from the bar. Some of these systems also provide table reservation functionality. However, the systems do not currently include integration with online table reservation systems. Instead, table reservations are typically received through phone or e-mail, and then registered manually in the cash register.

Related scenarios

This scenario is part of a group of scenarios which are related in that they all contain some elements of resource search and are located in the city. The scenarios use (some of) the same actors, and tell a story in the following order:

- Resource Search – Parking

- Resource Search – Meeting (this scenario)

- Resource Search – Shopping

More details

This chapter presents a summary use case diagram for the meeting scenario and an overview of how the logic of the main scenario and some of their variants can be realised as compositions. The following use case shows the actors and use cases identified from the main and the alternative stories of the scenario. The need for "edit friend list" is derived from "find friends in area" as the latter require a list of friends to work with.
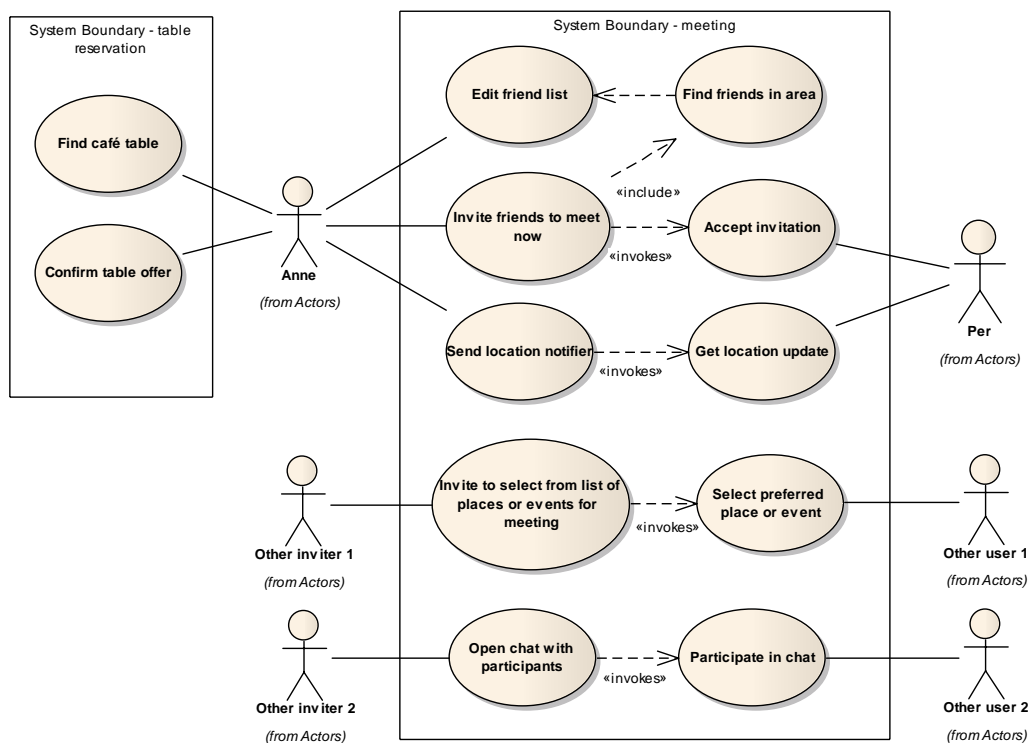

Figure 1 - Use case diagram for the meeting scenario

This chapter presents an overview of how the logic of the main sub-scenarios and some of their variants can be realised as compositions. The compositions are described as sequence diagrams which illustrate which elements are composed and how they interact. Sequence diagrams were used because they help identifying the needed building blocks and the interactions which are needed. A visual formalism which could be used by end users to compose services covering the scenarios will be defined is future work, and is not provided here.

Note that for simplicity the UI is in most of the sequence diagrams used to coordinate the logic of the composition. Further analysis are needed on whether the composition should instead be isolated in a separate element, e.g. in a controller part as in the "meet me now" sequence diagram.

The following sequence diagrams shows compositions and interactions which cover the meeting sub-scenario including the meeting and table reservation use cases for Anne.
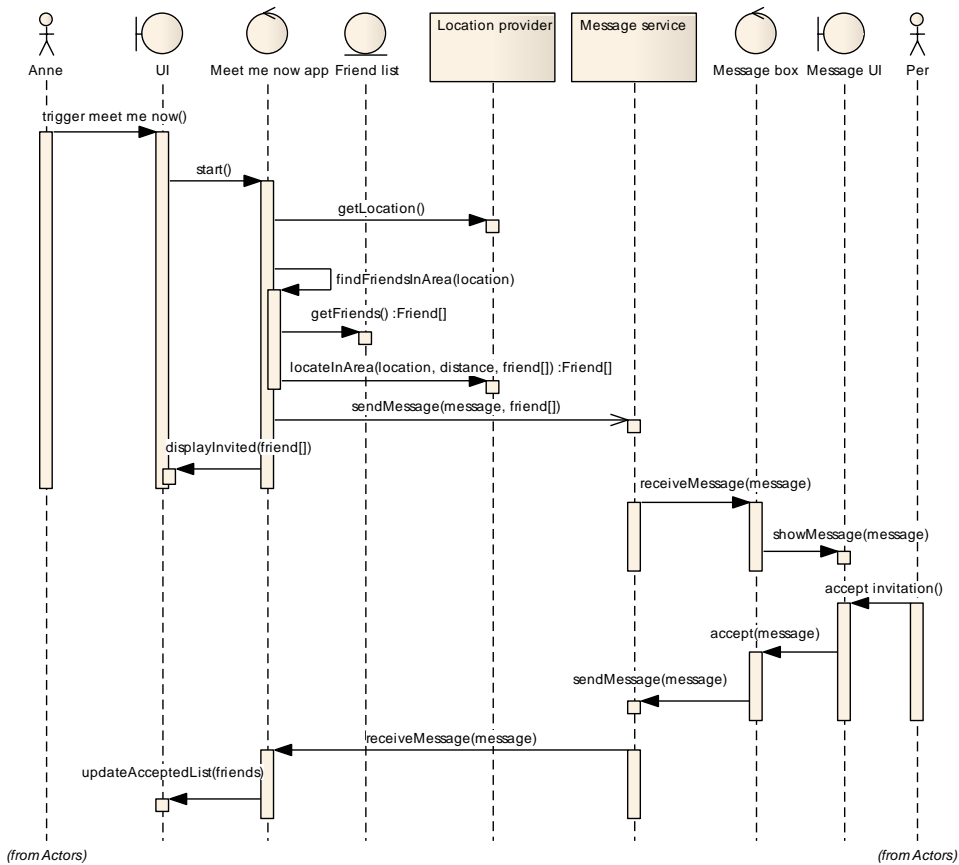

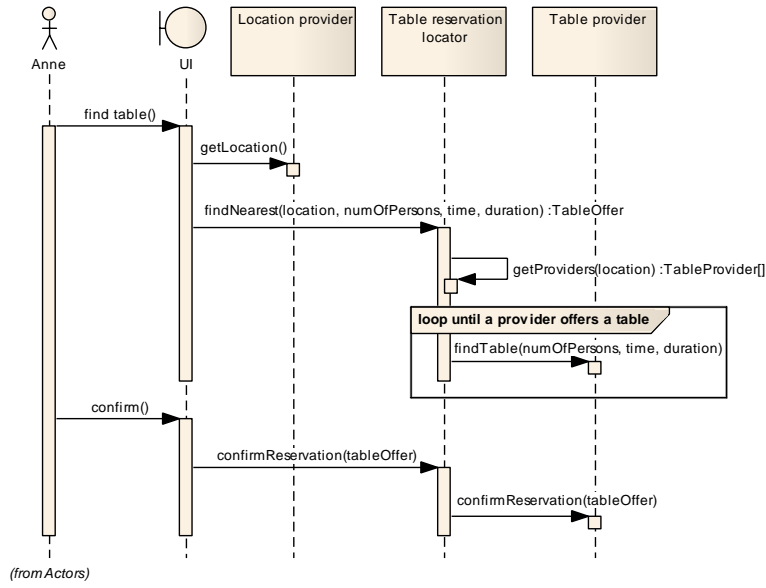*Figure 2 - Sequence diagram for the meet me now service*

Figure 3 - Sequence diagram for the table reservation service