Project Requirements

Project Name: Mensa@Unibe

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Customer: Bledar Aga

Revision History

Version	Date	Revision Description
.01	26.09.2013	Initial documentation
.02	01.10.2013	Andi & Sàndor merged, use cases
1.0	02.10.2013	All parts merged (Jan & Marc)

Date: October 2, 2013

Content

1. Introduction

1.1 Purpose

The mensa application has the purpose to serve as a portable and quick accessible menu list with additional features on most Android devices.
It will provide a rating system which will enable users to share there opinion about the daily meal. This will ensure a pleasant lunchtime with a good meal.
Also it will be possible to share the menu trough existing social media as WhatsApp or Facebook. With that you can show your friends, what you recommend to eat that day.
Another purpose is the fast reachability of the nearest mensa when hungry, which will be fulfilled with by including GPS tracking.

1.2 Stakeholders

Our stakeholders are Android using students from the University of Bern (16'000 students 2012, average 75% Android users, 5% having no mobile phone => circa 11'400 potential users), the different mensas of Bern (10 mensas, 7 of them serve menus) and the customer himself.

Our direct customer is Bledar Aga. He needs a perfectly working app within the time schedule.

1.3 System overview

A brief system overview, what functions should be implemented in the application.

- Overview of mensa
  After Starting a List of Mensas need to be provided.

- Details about menu of current day
  After a Click on a specific Mensa you should see the Menu of the day and be able to switch on an upcoming day.

- Find closest mensa
  Provide a Feature to find the closest Mensa.

- Way of reach a given Mensa
  Provide a Feature to find a specific Mensa.

- Favorite mensa
  Provide a possibility to mark a Mensa as favorite and make sure there is quick access to it.

- Get notified if menu matches some criteria in my favorite mensa

- Read English translation of a menu
  Provide a translation to the German Mensa.

- Set user name
  You should be able to have a nickname.

- Choose friends
  A feature to add /delete Friends.

- Notifications
  Implement Notifications for invitations/messages from friends and favorite Menus. Doing so also implement an option to disable specific notifications.

- Mark Mensa where the user plans to go for lunch
  A way of marking a Mensa at a given time. And notification if a friend will be there at the same time.

- Rate a Menu
  Implement a Rating System (Stars) and Comments.
- The Weekly Menu of all Mensa have to available offline after the first synchronization process with the server after a new weekly menu was uploaded.

1.4 References

We will refer to https://github.com/lexruee/Mensa-Unibe-Webservice for our menu data.

We will be using the ActionBarSherlock http://actionbarsherlock.com/ to provide compatibility for earlier versions of Android.

2 Overall description

2.1 Use cases

Check diagram_v2.png for a global overview of all use cases and how they interact.

2.1.1 List of all mensas

1. Actors

User

2. Description

As a costumer, I want to see a complete list, with all mensas of the campus.

3. Trigger

User starts the App and sees the home-screen with the list.

4. Pre-conditions

1. First start: User has an active internet connection.

5. Post-conditions

1. User sees a list of all mensas.
2. User can choose one mensa.

6. Main scenario

1. User opens the app
2. System shows a list of all mensas
3. User choose a mensa
4. System shows brief information about the mensa and options

7. Alternative scenarios

2a. System has no internet connection

a. System tries to get a cached list of the mensas
b. System shows the cached list of the mensas

2b. System has no internet connection

a. System tries to get a cached list of the mensas
b. No cached version available
c. System shows error message

8. Special requirements

1. Parse the list of mensas

9. Notes

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2.1.2 Details about menu of current day

1. Actors
User

2. Description
As a user I want to see details about the menus served at a given mensa in the current day.

3. Trigger
User hits the “Current Day Menu” button of the actual mensa

4. Pre-conditions
1. User chose the mensa

5. Post-conditions
1. User sees the served menus of the current day

6. Main scenario
1. User wants to see the served menus
2. System shows details of the served menus

7. Alternative scenarios
1a. User has no internet connection
    a. System tries to get a cached version
    b. Cached version available, shows it

1b. User has no internet connection
    a. System tries to get a cached version
    b. No cached version available
    c. System shows error message

8. Special requirements
1. Parse the data about served menus

9. Notes
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2.1.3 Details about menu of the coming days

1. Actors
User

2. Description
As a user I want to see details about the menus served at a given mensa in the coming days.

3. Trigger
User hits the “Coming Days Menu” button of the actual mensa

4. Pre-conditions
1. User chose the mensa

5. Post-conditions
1. User sees the served menus of the current day

6. Main scenario
1. User wants to see the served menus
2. System shows details of the served menus

7. Alternative scenarios
1a. User has no internet connection
   a. System tries to get a cached version
   b. Cached version available, shows it

1b. User has no internet connection
   a. System tries to get a cached version
   b. No cached version available
   c. System shows error message

8. Special requirements
1. Parse the data about served menus

9. Notes
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2.1.4 Find closest mensa

1. Actors
User

2. Description
As a user I want to know which is the closest mensa

3. Trigger
User hits the “Get Closest Mensa” button.

4. Pre-conditions
1. User has enabled GPS
2. System has the permission to use the GPS data

5. Post-conditions
1. User sees the closest mensa

6. Main scenario
1. User wants to see the closest menu
2. System calculates the closest mensa with the GPS data
3. System shows the closest mensa

7. Alternative scenarios
2a. System has no permission to use the GPS data
   a. System asks for permission to use GPS data
   b. User gives the permission to the system
   c. Back to main scenario

2b. System has no permission to use the GPS data
   a. System asks for permission to use GPS data
   b. User declines
   c. System shows error message

2c. GPS is not enabled on the device
   a. System asks to enable the GPS
   b. User enables the GPS
   c. Back to main scenario

2d. GPS is not enabled on the device
   a. System asks to enable the GPS
   b. User does not enable the GPS
   c. System shows error message

8. Special requirements
1. Permission to use the GPS data
2. Calculate distance with coordinates

9. Notes
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2.1.5 Way to reach a given mensa

1. Actors
User

2. Description
As a user I want to know how to reach a given mensa

3. Trigger
User hits the “Show Way” button of the actual mensa

4. Pre-conditions
1. User chose the mensa
2. User has an active internet connection
3. User has enabled GPS
4. System has the permission to use GPS data

5. Post-conditions
1. User sees the way to a given mensa

6. Main scenario
1. User wants to know how to reach a given mensa
2. System shows the way with on a Map

7. Alternative scenarios
1a. User has no internet connection
   a. System shows error message

1b. GPS is disabled
   a. System asks user to enable GPS
   b. User enables GPS
   c. Go back to main scenario

1c. GPS is disabled
   a. System asks user to enable GPS
   b. User declines
   c. System shows error message

1d. System has no permission to use the GPS data
   a. System asks for permission to use GPS data
   b. User gives the permission to the system
   c. Back to main scenario

1e. System has no permission to use the GPS data
   a. System asks for permission to use GPS data
   b. User declines
   c. System shows error message

8. Special requirements
2. Use Google Maps for leading and showing the way

9. Notes
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2.1.6 See current day menu of favorite canteen

1. Actors

User

2. Description

As a user I want see the current day menu of a canteen from my favorites list

3. Trigger

User navigates to favorites list

4. Pre-conditions

1. User added at least one canteen to favorites list
2. Favorite canteens have menu for current day

5. Post-conditions

Insert menu for current day to the specified canteens

6. Main Scenario

1. User navigates to favorites list
2. System lists favorite canteens
3. System checks for current day menus of favorite canteens
4. System inserts current day menu to every canteen in this list

7. Alternative Scenarios

1a. There are no canteens in favorites list
   a. System prompts user to add canteens to favorites list
   b. User selects favorite canteens
   c. Use Case resumes on step 2

1b. There are no canteens in favorites list
   a. System prompts User to add canteens to favorites list
   b. User declines
   c. Use Case finish

3a. There is no current day menu for the canteens
   a. System prompts user to update menu database
   b. User accepts
   c. Use Case resumes on step 3

3b. There is no current day menu for the canteens
   a. System prompts user to update menu database
   b. User declines
   c. Use Case finish

8. Special Requirements

System lookup and insert (step 4 and 5) cannot take more then 2 seconds.

9. Notes

What to do if alternative scenarios are finishing with user declines? - TBD

2.1.7 Get notified if menu matches some criteria in my favorite canteen

1. Actors

User

2. Description

As a user I want to get notified if a menu served at my favorite canteen matches some criteria

3. Trigger

A menu matches some criteria set by the user

4. Pre-conditions

1. User set already at least one criteria
2. User set at least one favorite canteen
3. A menu matches a previously set criteria
4. Matching menu is in a favorite canteen

5. Post-conditions

1. User receives a notification

6. Main scenario

1. User sets a criteria for a favorite canteen
2. System saves the criteria in interests data
3. When menus are updated, system looks if a menu matches a criteria from interests data
4. If a menu meets a criteria, system looks if this is a menu of a favorite canteen
5. If it is a menu of a favorite canteen, system notifies user

7. Alternative Scenarios

3a. There is no interests data available

a. Use Case finish

8. Special Requirements

9. Notes

Do not notify user if the availability of menu is already passed
Notify user just once
If there are more notifications, group them in one

2.1.8 Read English translation of a menu

1. Actors

User

2. Description

As a user I want to be able to read the English translation of a menu

3. Trigger

User clicks the English language button on the menu view

4. Pre-conditions

1. at least one menu has an English translation

5. Post-conditions

1. system presents English translation of current menu

6. Main Scenario

1. User navigates to menu view
2. System presents the current menus
3. System checks if English translation is available for currently viewed menus
4. System inserts language button to presented menus
5. User clicks language button
6. System loads the corresponding English translations
7. System presents the English version of the menus

7. Alternative Scenarios

3a. There is no English translation available for none of the menus

a. Use Case finish

8. Special Requirements

9. Notes

How to get translations for menus? - TBD

2.1.9 Set user name

1. Actors

User

2. Description

As a user I want to be able to set my user name

3. Trigger

no user name is saved

4. Pre-conditions

1. the user doesn't have a user name set up

5. Post-conditions

1. system saves user name

6. Main Scenario

1. System prompts user to set up a name
2. User sets up the user name
3. System saves user name data

7. Alternative Scenarios

1a. User declines to set up a name

a. Use Case finish

8. Special Requirements

1. user name has to be unique identifier

9. Notes

1. What is the best way to not annoy the user? -TBD
2. Asking for email address? -TBD
3. Asking for accounts data?-TBD

2.1.10 Choose friends

1. Actors

User

2. Description

As a user I want choose my friends which are using the Mensa app

3. Trigger

User clicks choose friends button

4. Pre-conditions

1. User set up already a user name
2. User has friends in his contact list which are using the Mensa app

5. Post-conditions

System saves friends list data

6. Main Scenario

1. User clicks choose friends button
2. System checks user phone contacts, who are using the Mensa app
3. System lists the matched contacts to choose from
4. User selects contacts to add to friends list
5. User clicks add button
6. System saves the data to friends list

7. Alternative Scenarios

2a. There are no contacts using Mensa app

a. System notifies user that no contacts matched
b. System advises the user to let friends know about the app
c. Use Case finish

5a. User have not selected any contacts

a. User clicks add button
b. System prompts user to select contacts
c. User accepts
d. Use Case jumps to step 3

5b. User have not selected any contacts

a. User clicks add button
b. System prompts user to select contacts
c. User declines
d. Use Case finish

8. Special Requirements

In case the system is interrupted (an incoming phone call for ex.) step 4 should be saved, to be able to resume

9. Notes

1. How to find out which contacts are using the Mensa app? - TBD

2.1.11 Delete a friend

1. Actors
User

2. Description
As a user I want delete a person from my friends list

3. Trigger
User clicks delete friend button

4. Pre-conditions
1. User has a friends list

5. Post-conditions
System deletes person from friends list

6. Main Scenario
1. User navigates to friends list
2. System presents the list
3. User clicks delete friend button
4. System prompts confirm
5. User accepts
6. System deletes person from friends list

7. Alternative Scenarios
4a. User declines confirm
   a. Use Case finish

8. Special Requirements

9. Notes
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2.1.12 Enable/disable notifications for friends

1. Actors

User

2. Description

As a user I want to enable/disable which friends of mine get notifications when I plan to goo for lunch

3. Trigger

User checks enable/disable friends to get notifications check-box

4. Pre-conditions

1. User has a friends list

5. Post-conditions

System enables/disables notifications for selected friends

6. Main Scenario

1. User navigates to friends list
2. System presents the list
3. User checks the enable/disable friend check-box
4. User clicks confirms changes
5. System enables/disables notifications for friends

7. Alternative Scenarios

4a. User cancels changes

a. Use Case finish

8. Special Requirements

1.

9. Notes

1. -

2.1.13 Choose where I plan to go for lunch and get notification if a friend joins me

1. Actors

User (primary)
Friends of the user (secondary)

2. Description

As a user I want to let my friends know where I plan to go for lunch. If they want to join me, I want to be notified.

3. Trigger

User clicks mark button on canteen where he plans to go for lunch

4. Pre-conditions

1. User has a friends list
2. Notification is enabled at least for one friend
3. Planned canteen is open at the specified time

5. Post-conditions

1. System saves planned time and canteen
2. System notifies enabled persons from friends list
3. If a friend confirms to join, system sends a join notification

6. Main Scenario

1. User navigates to canteens
2. System presents the canteen list
3. User clicks mark for lunch
4. System asks for time
5. User sets time
6. System validates time
7. System saves time and canteen
8. System sets expiration time of notification
9. System sends join notifications to enabled friends
10. Friend receives notification
11. Friend confirms join
12. System sends join confirmation
13. User receives confirmation

7. Alternative Scenarios

6a. Planned canteen is closed at the specified time
   a. System notifies user, that the time is not valid
   b. Use Case resume at step 4

9a. Friend declines to join
   a. Use Case finish

8. Special Requirements

Notification should have an expiration time, that If it arrives too late, it should be dropped.

2.1.14 Rate menu I have eaten

1. Actors

User

2. Description

As a user I want to be able to rate a menu I have eaten

3. Trigger

User clicks rating stars on viewed menu

4. Pre-conditions

1. User has set up a user name
2. There is a list with current and past week menus
3. The menu is available to eat or it was available in the past week

5. Post-conditions

1. System saves rating for menu
2. System updates rating for menu database

6. Main Scenario

1. User navigates to current and past week menu view
2. System presents menu list
3. User clicks rating stars on a menu
4. System saves rating for corresponding menu
5. System updates rating data for menu database

7. Alternative Scenarios

3a. User has not set up user name
   a. System prompts user to set up a user name
   b. User sets up user name
   c. Use Case resume on step 4

3b. User has not set up user name
   a. System prompts user to set up a user name
   b. User declines
   c. Use Case finish

4a. User rated already the same menu before
   a. System overwrites old rating of user
   b. Use Case resume on step 5

8. Special Requirements

User shouldn't be able to rate a menu which will be available in the future, hence user did not try the corresponding menu

9. Notes

1. -

2.1.15 Check how people rated a certain menu

1. Actors
User

2. Description
As a user I want to be able to check how other people rated a certain menu

3. Trigger
User navigates to menu view

4. Pre-conditions
1. A menu has at least one rating

5. Post-conditions
System presents rating of corresponding menu

6. Main Scenario
1. User navigates to menu view
2. System loads menu list
3. System loads rating for corresponding menus
4. System presents menu list with ratings

7. Alternative Scenarios
3a. Corresponding menu has no rating
   a. System presents corresponding menu 0 rating
   b. Use Case resume on step 4

8. Special Requirements
Menu rating database should contain an arithmetic mean of the overall ratings

9. Notes
1. How to achieve the arithmetic mean?
2. Compute in database, when a rating is updated?

2.2 Actor characteristics

The average user is a student or an employee of the University of Bern. He regularly eats in one of the mensas of the University. He is above the average intelligence and likes to have a fast way to get information about the served menus. He should be familiar with using an app on a smartphone.
We except, that the most users will be normal students with common knowledge about the usage of smartphones an apps.

3 Specific requirements

3.1 Functional requirements

3.1.1 Client

- Overview of mensa
  After Starting a List of Mensas need to be provided.

- Details about menu of current day
  After a Click on a specific Mensa you should see the Menu of the day and be able to switch on an upcoming day.

- Find closest mensa
  Provide a Feature to find the closest Mensa.

- Way of reach a given Mensa
  Provide a Feature to find a specific Mensa.

- Favorite mensa
  Provide a possibility to mark a Mensa as favorite and make sure there is quick access to it.

- Get notified if menu matches some criteria in my favorite mensa

- Read English translation of a menu
  Provide a translation to the German Mensa.

- Set user name
  You should be able to have a nickname.

- Choose friends
  A feature to add /delete Friends.

- Notifications
  Implement Notifications for invitations/messages from friends and favorite Menus. Doing so also implement an option to disable specific notifications.

- Mark Mensa where the user plans to go for lunch

A way of marking a Mensa at a given time. And notification if a friend will be there at the same time.

- Rate a Menu
  Implement a Rating System (Stars) and Comments.
- The Weekly Menu of all Mensa have to available offline after the first synchronization process with the server after a new weekly menu was uploaded.

3.1.2 Server

- Provide up to date information about all mensas including menus, location
- (Provide a user Database)

3.2 Non-functional requirements

- Novice User should be able to learn the app navigation within minutes.
- Client-Server-Communication needs to work properly and availability provided 24 hours 7 days a week. The only exception would be scheduled server maintenance.
- The storage used on the smartphone should be kept under 10 MB in the alpha version (if more feature will be added this amount can increase)
- The Application needs to run stable on all Android devices with Jelly Bean (4.1 or higher).
- Personal data on the server should be treated with the current security standards
- The Implementation should meet the ISO/IEC 9126 standard (http://de.wikipedia.org/wiki/ISO/IEC_9126)
- The user-event-response time should be under 0.1 seconds (Exception: data synchronization with Server Mensa plan and loading maps)
- Data traffic should be kept under 1MB / Usage doesn't include traffic caused by watching the maps.