UNIVERSITY OF ZAGREB

FACULTY OF ORGANISATION AND INFORMATICS

V A R A Ž D I N

Viktor Lazar, vlazar@foi.hr

Martina Šestak, msestak2@foi.hr

Goran Vodomin, gvodomin@foi.hr

Matej Vuković, mvukovic2@foi.hr

BLUETOOTH LE SHOWCASE

USER DOCUMENTATION FOR SOFTWARE ANALYSIS AND DEVELOPMENT PROJECT

Varaždin, 2015.

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V A R A Ž D I N

Team number: T01

Team name: Heisenbug

Team members:

Viktor Lazar, 0108063551

Martina Šestak, 0016091250

Goran Vodomin, 0016092445

Matej Vuković, 0016094754

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Mentors:

Dr.sc. Zlatko Stapić

Ivan Švogor, mag.inf.

Evolaris mentors:

Christian Adelsberger

Hermann Moser

Martin Schumann

Varaždin, January 2015.

We fully accept the changes as needed improvements and authorize initiation of work to proceed. Based on our authority and judgment, the continued operation of this system is authorized.

Martin Schumann
Product owner

Martina Šestak
Developer

Viktor Lazar
Developer

Goran Vodomin
Developer

Matej Vuković
Developer

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1.0 GENERAL INFORMATION

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1.1 System Overview

SeierFriendApp is mobile application which is intended to use by costumers of local shopping center in Graz, to be more specific it is a Seiersberg Shopping City. In order to use SeierFriendApp, customer first has to download the application. At the moment application is not published yet, but most likely it would available on official web page of shopping city or it will be published on Google Play Store. The main goal of SeierFriendApp is to provide discounts on goods that are sold in shopping city. Each time when costumer visits shopping city, if he has SeierFriendApp installed, application register his visit and provide him certain number of points. Costumer collects points and considering on amount of points he have application provide him friend status. Friend status could be basic, top and premium friend. The higher status costumer have discounts on goods are higher. Also when customer visit shopping city, SeierFriendApp is automatically launched. User can discard notification on mobile or he can look point's number, friend status or list of discounts (vouchers).

Product is consisted of two parts, web services and mobile app. Web services are responsible for providing point numbers, discounts and friend status. The main tasks of mobile app is to collect data from services and present them to costumer. Also important task of mobile app is to register visit of costumer to shopping city. Registered visits are sent to via mobile app to web services which then manipulate with received data.

SeierFriendApp has intuitive graphical interface and it would be explained in further text. For user is important to know that application is still under development major functionalities described above are implemented.

1.2 Authorized Use Permission

SeierFriendApp contains user personal data. Any unauthorized use of user personal data such as copies of data is not applicable and it has to be in accordance with state law where application is used.

1.3 Organization of the Manual

Provide a list of the major sections of the User's Manual (1.0, 2.0, 3.0, etc.) and a brief description of what is contained in each section.

1.4 Acronyms and Abbreviations

Here is a list of abbreviations which is used in document:

- BLE – Bluetooth Low Energy
- BLE module – Bluetooth Low Energy hardware adapter inside mobile device

2.0 SYSTEM SUMMARY

2.0 SYSTEM SUMMARY

2.1 System Configuration

SeierFriendApp has some specific hardware requirements. For normal functioning and performing all mayor described functionalities the mobile device must have Bluetooth Low Energy module. BLE is needed when user visits shopping city. Inside shopping city there are BLE terminals which mobile app scans, and when visitor is in range of terminal mobile app detects its. If user wouldn't have BLE module, then SeierFriendApp couldn't detect if he is in shopping city or not.

Beside hardware requirements there are also software requirements. SeierFriendApp is intended for Android mobile platform, therefore it wouldn't work on Windows Phone or iOS. Also it is important for users to have at least Jelly Bean version of Android so that they could properly install SeierFriendApp.

2.2 Data Flows

SeierFriendApp has local storage where most important data is stored. All mayor data provided form web services is stored in local database. Data that could be found in local storage: user data such as first name, last name, point number, friend status, list of discounts and etc...

2.3 User Access Levels

SeierFriendApp does not assume different levels of users. There is one type of user which can access all application data and functionalities.

2.4 Contingencies and Alternate Modes of Operation

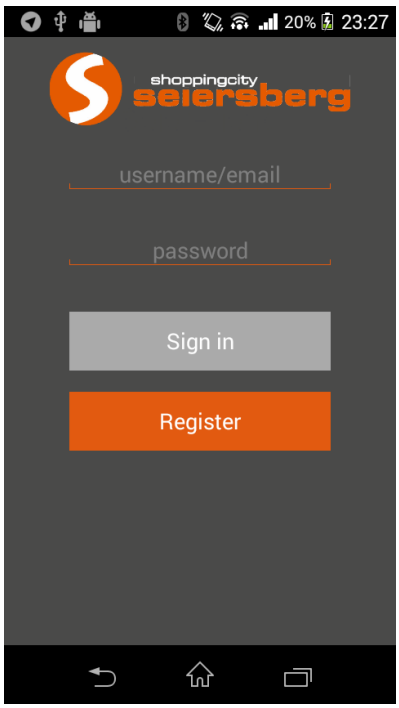
If user accidentally deletes application local data or even remove application from mobile device there is no need to fear that data is lost (such point number, friend status, and discounts). All data is stored on web services and it can be collected again.

3.0 GETTING STARTED

3.0 GETTING STARTED

3.1 Logging On

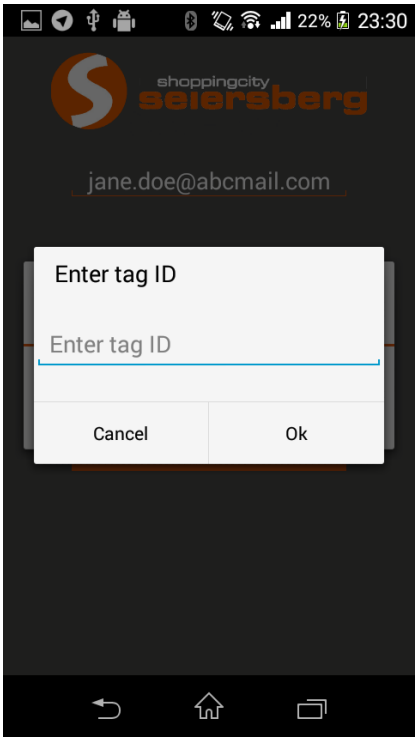
When application is downloaded and properly installed, if user doesn't have account, firstly he has to register himself. Registration can be done by pressing Register button shown on picture 1. User is then directed to official web page of shopping center where registration can be done (see picture 2.). When registration is done, user becomes friend of Seiersberg shopping city. When username/email and password is created user can proceed with logging in into application.



Picture 1. Sign in

Picture 2. Registration

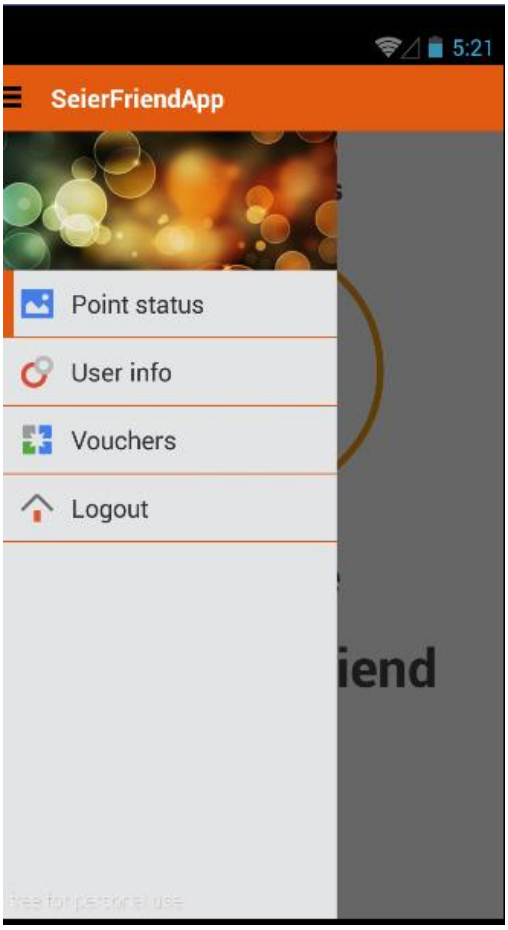
If this is a first login for new user, he also has to provide TagId. TagId is provided by shopping city during registration and it's important for user to have it. TagId is used for "check in", respectively for gaining points for each visit to shopping city. Picture 3. shows how to enter TagId, and it's very important for user to enter correct TagId. On second and further logins, application won't prompt for entering TagId, it's only entered once on first login.



Picture 3. Enter TagId

3.2 System Menu

Picture 4. System menu shows the main system menu and his functionalities. There are four main functionalities: Point status, User info, Vouchers and Logout. System menu is implemented as side bar and one way for to access system menu is by swiping from left edge of screen to right edge. Another way is pressing the button near title SeierFriendApp. Main goal of system menu is navigation through application. Each module of application is accessible from system menu.



Picture 4. System menu

3.3 Changing Username and Password

Changing Username and Password can be done through official web page of shopping city. How to access web page of shopping city is shown on picture 2.

3.4 Exit System

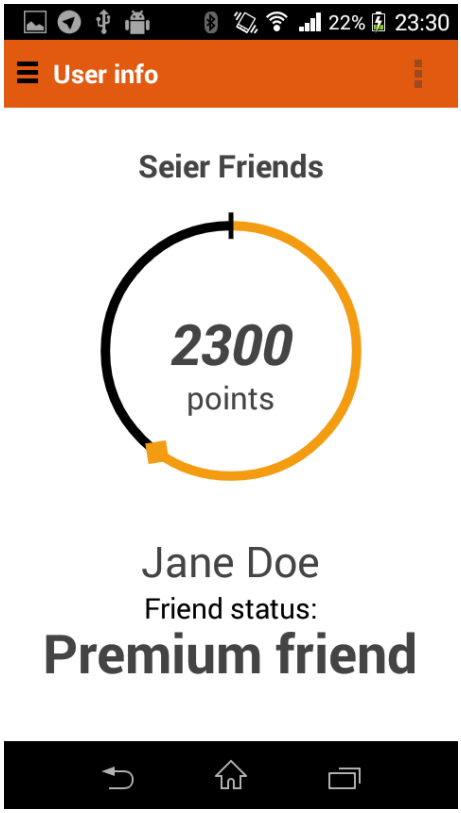
User can simply exit from system by clicking Logout button on System menu, logout button is shown on picture 4.

4.0 USING THE SYSTEM (ONLINE)

4.0 USING THE SYSTEM (ONLINE)

4.1 Point status

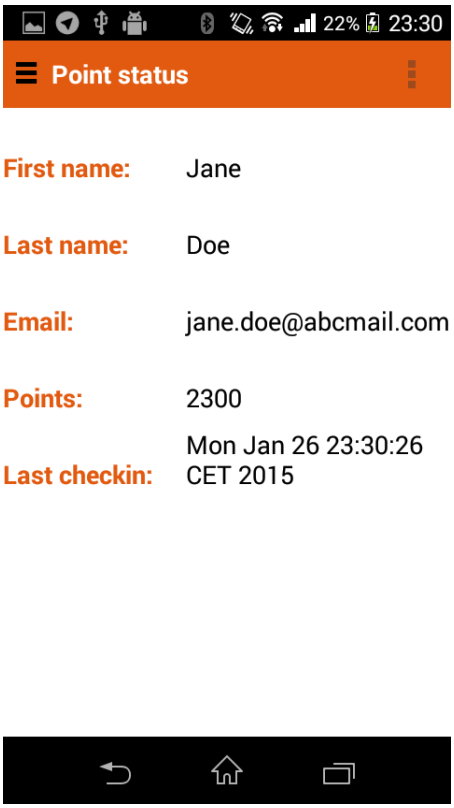
Point status is one of the main functionality of SeierFriendApp. Its main goal is to provide number of points which logged user have. Points are shown inside of circular bar, below is the name of logged user and his friend status. Again each registered user can have three level of friend status: Basic, Top and Premium. Each friend level depend on point number and higher points and friend status gain more attractive discounts (vouchers). Picture 5 shows Point status functionality.



Picture 5. Point status

4.2 User info

User info shows basic information about logged user such as first name, last name, email, number of points and last check in. Last check in indicates to the user when is the last time when he got the points. Picture 6 shows User info functionality.



Picture 6. User info

4.3 Vouchers

Vouchers (discounts) is one of the core functionality of SeierFriendApp. Vouchers provides information about discounts on goods which logged user has. Each voucher is shown inside the list. The content of list depends on data provided by web services. Picture 7 shows Vouchers functionality.

Picture 7. Vouchers

4.4 Check in

Check in occurs when user is in the range of Bluetooth terminals inside the shopping city, which means that user has visited shopping city. If application is not force stopped, then in background scans for Bluetooth terminals. When application is in range of Bluetooth terminal it launches notification on user mobile device. Notification is shown inside notification bar, and if user want's he can start application from notification to see new point status, voucher list, friend status etc... Besides that user can ignore notification. Picture 8. shows Check in functionality.

Picture 8. Check in

4.5 Special Instructions for Error Correction

Error could occur when application fetches the data from web services. In that case please log out from application clear local storage and log in again and make sure that your device has internet connection. Error could also occur when application is scanning for BLE terminals. If application does not recognize when user is in shopping city try to restart Bluetooth and make sure that device have BLE hardware module.

4.6 Caveats and Exceptions

On first login into application user has to enter correct TagId in order to do successful check in, respectively gain point numbers.

6.0 QUERYING

5.0 QUERYING

6.1 Query Capabilities

Data inside SeierFriendApp is stored in local relational database. All data is collected from web services and stored into local database. To show correct data for logged user application use standard SQL queries to retrieve data from local database. Some of the query examples which application uses is:

```
select tagID from login where email==?; or
select * from user where loggedin==true;
```

6.2 Query Procedures

Application does not use any stored procedures.

7.0 REPORTING

6.0 REPORTING

6.1 Report Capabilities

Application does not provide any reports to end user.

6.2 Report Procedures

Application does not provide any report procedures for user.