Acceptance Test Plan

- for Diabetter, a Diabetes data dashboard

Team members

Alexandra Nikolova	- 1339311
Rik Litjens	- 1317059
Vasil Shteriyanov	- 1307282
Gabriela Zanova	- 1307509
Konstantin Velkov	- 1307436
Roel Koopman	- 1299743
Rinse Vlaswinkel	- 1312529
Nikaels Balasovs	- 1250221
Jeroen Gijsbers	- 1305832
Kevin Dirksen	- 1302191

Client & Platform Owner
M. Chaudron & P. Van Gorp

Project Managers
A. Pintea & C. Olteanu

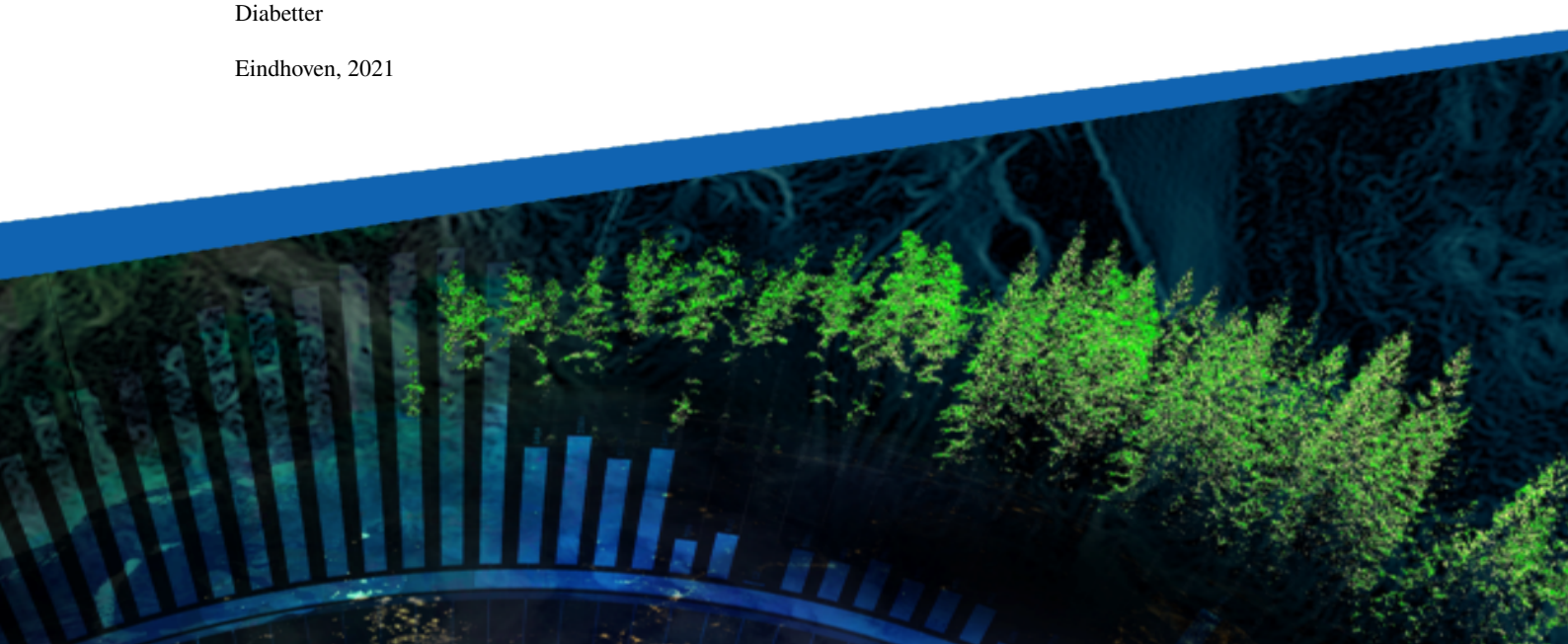
Supervisor
G. Kahraman

Eindhoven University of Technology

Department of Mathematics and Computer Science

Diabetter

Eindhoven, 2021



Abstract

This document is the Acceptance Test Plan (ATP) for the Diabetter dashboard, a web-based data application for people living with Diabetes type 1. It uses functionalities of the GameBus[2] platform, like data storage. The main purpose of the Diabetter dashboard is to visualize data considering the factors of interest for Diabetes type 1 patients in a simple and intuitive way. Enabling analyses and showing possible interactions between these factors is an important feature of the application. The test cases in the document correspond to the requirements from the User Requirements Document (URD) [1]. This document is in line with the ESA.

Contents

Document status sheet and change records

Document title	Acceptance Test Plan
Document identifier	Diabetter.ATP/0.2
Authors	Alexandra Nikolova Rik Litjens Vasil Shteriyanov Gabriela Zanova Konstantin Velkov Roel Koopman Rinse Vlaswinkel Nikaels Balasovs Jeroen Gijsbers Kevin Dirksen
Document status	Finished, unapproved

Document History

Version	Date	Authors	Description
0.1	11-06-2021	Vasil, Alexandra & Gabriela	First version.
0.2	17-06-2021	Vasil, Alexandra & Gabriela	Second version.
0.3	17-06-2021	All	Third version.

Document Change Record

Version	Date	Version	Changes
0.1	11-06-2021	Vasil, Alexandra & Gabriela	First version.
0.2	17-06-2021	Vasil, Alexandra & Gabriela	Second version.
0.3	17-06-2021	All	Implementing client comments & final changes.

1 Introduction

1.1 Purpose

The Acceptance Test Plan (ATP) specifies test cases that need to be performed by the customer in order to confirm that the to-be-delivered product is acceptable. That is, in accordance with the User Requirements Document (URD) [1]. It furthermore describes the procedure that the user must follow to run all tests properly.

1.2 Overview

This document consists of four chapters. Chapter 2 covers the features to be tested, together with an overview of the testing process. Chapter 3 contains the specifications all test cases. Each test case consists of a unique identifier, a description, the preconditions for executing that test case, the requirements that correspond to the test case, and the input and output specifications. Chapter 4 explains the test procedure, where all test cases defined in chapter 3 will be executed in a logical order. Chapter 5 reports the results of the tests.

1.3 List of definitions

Some of the used terms, phrases, and abbreviations might be ambiguous. Therefore we include all relevant definitions in Table 1 and 2.

1.3.1 Definitions

A1C estimate	Average blood glucose level over the past 3 months.
Activity entry	An activity that a user has done and has made a record in the web application.
Activity history	A collection of user activities.
Activity type	A subgroup of activities that includes similar activities, e.g. runs, walks.
Classification threshold of the hyperglycemia occurrences	The value above which, the application shall classify glucose level values as hyperglycemia occurrences.
Classification threshold of the hypoglycemia occurrences	The value below which, the application shall classify glucose level values as hypoglycemia occurrences.
Diabetes	When diabetes is mentioned, we refer to Diabetes type 1.
Editable data	Previously collected data for insulin, mood and profile settings that can be changed
Emotional history	A collection of users' emotional status inputs.
Emotional status entry	An emotion that a user has experienced and has made a record in the web application.
Event type	One of the following: A performed activity, an entered meal/snack (food), an entered emotion status.

Food entry	A food that a user has consumed and has made a record in the web application.
Food history	A collection of the users food entries.
Food information	Food details such as calories, carbs, name, time, date.
Food type	One of the following: breakfast, lunch, dinner, snack.
Glucose data scan	The user scans his CGM and reads the buffered glucose data, which is subsequently uploaded to the GameBus servers.
Glucose value types	Can be one of the following: "Low", "Very Low", "Normal", "High", "Very High". The application sets them by default, but the user can change them.
Health metrics	Glucose, insulin.
Hyperglycemia occurrence	The application interprets the Hyperglycemia occurrence as a glucose value above Classification threshold of the hyperglycemia occurrences.
Hypoglycemia occurrence	The application interprets the Hypoglycemia occurrence as a glucose value below Classification threshold of the hypoglycemia occurrences.
Insulin information	Indicates when the insulin was taken, whether it was rapid-acting or slow-acting, and its amount.
Insulin intake type	Can be one of the following: rapid-acting or slow-acting.
Intensity of an activity	A uniform measure of the level of physical strain during an activity.
Specified time frame	A time interval and a date interval selected by the user.
Summary statistics of activity data	Average heartbeat, sum of steps, burnt calories.
Summary statistics of food data	Sum of carbohydrates, calories.
Summary statistics of glucose data	Average, min, max.
Supervisor	A supervisor figure of a normal user with Diabetes. He can see and change the data of the normal user.
Supervise	See and change the data of the normal user.
The application	All systems designed and developed by the Diabetter team, ranging from the web page to the processing of data behind the scenes.
User	Normal user or Supervisor user.
Visualization	Graphs or diagrams.

Table 1: Definitions of terms that are used in this document

1.3.2 Abbreviations

ATP	Acceptance Test Plan
CGM	Continuous glucose monitor
URD	User Requirements Document
CGM	Continuous glucose monitor
CSV	Comma Separated Values
e.g.	Exempli gratia, indicating an example
Hyper	Hyperglycemia
Hypo	Hypoglycemia

Table 2: Definitions of abbreviations that are used in this document

1.4 List of references

[1] Diabetter, *User Requirements Document*. Eindhoven University of Technology, 2021.

[2] GameBus.https://blog.gamebus.eu/. Accessed: 04-05-2021

[3] Diabetter, Software Transfer Document. Eindhoven University of Technology, 2021.

2 Test Plan

2.1 Test items

The software to be tested is the Diabetter dashboard. The testing procedure includes all functionalities of the application that are described in the User Requirements Document[1].

2.2 Features to be tested

The features to be tested correspond to requirements from the URD which are prioritized using the MoSCow method. All requirements with priority "Must Have" are implemented and are going to be tested. Some requirements with "Should Have" and "Could Have" priority are also implemented and going to be tested. No requirements with priority "Won't Have" are implemented and will not be tested. The requirements with TBR(To be researched) priority are not implemented, thus will not be tested. Requirement REL 0.0 with priority "Must Have", stating "The application shall facilitate all use cases without crashing." is tested throughout the test procedure, as passing all the test cases verifies it.

2.3 Test deliverables

Before the execution of the test cases, the following items will be needed:

- The User Requirements Document
- Chapters 1 through 4 of the Acceptance Test Plan document

After the execution of the test cases, the following items will be delivered.

- All sections of the Acceptance Test Plan document
- Problem reports (if any)

2.4 Testing tasks

Before executing the test procedures described in Chapter 4, the following tasks have to be realized.

- Designing the test cases
- Linking the test cases to the corresponding requirements in the User Requirements Document
- Ensuring that all the environmental needs, described in Section 2.5 are met

2.5 Environmental needs

For the acceptance test plan execution, the following resources are required:

- A desktop or laptop computer with internet connection.
- A desktop or laptop computer running Google Chrome web browser, version 90 or higher.
- GameBus account that plays the role of a normal user, provided by the Diabetter team
- GameBus account that has requested supervisor role from the normal user account, provided by the Diabetter team
- GameBus account that has already approved supervisor role from the normal user account, provided by the Diabetter team
- All files to be uploaded and used during the testing procedure, provided by the Diabetter team

2.6 Test case pass/fail criteria

In Chapter 3, the test cases for the acceptance plan are designed. A test case passes if the generated output is the same as the specified output, given that the precondition is met and the correct parameters are used where needed. The test case fails if there is a mismatch between the generated and the specified output. Each test case is run at least once in the described Test Procedures in Chapter 4. The acceptance test passes only if all test cases testing "Must Have" requirements mentioned in Chapter 3 pass.

3 Test Case Specifications

3.1 General

ATP - 1 Accessing the Diabetter application

Preconditions: The user is not logged in to a Diabetter account
User Requirements: GEN 0.0, ENV 0.0, ENV 0.1

Parameters: -

Input Specifications	Output Specifications
1. Open Google Chrome web browser version 90 or higher	
2. Enter diabetter.win.tue.nl:8080 to the URL bar.	3. The Login page of the Diabetter application is shown.
4. Verify that the text on the page that is not a user input is in English.	

3.2 Privacy & Security

ATP - 2 Successful login into the Diabetter application

Preconditions: The user has access to the Diabetter application and is on the Login page.
The user has a valid Gamebus account, but is not logged in.
GameBus Daily_run provider is not connected for atp@user.nl

User Requirements: USER 0.1, PS 0.0, PS 0.2, PS 0.3, PS 0.4, ENV 0.1, ENV 0.2

Parameters: $user\_email$, $user\_password$, $role$, $user\_name$

Input Specifications	Output Specifications
1. Enter $\{user\_email\}$ in the email field.	
2. Click the "LOG IN" Button.	
	3. The user is redirected to the Gamebus Sign up Page.
4. Click the "LOGIN" Button on the top menu.	
5. Enter $\{user\_email\}$ in the username field.	
6. Enter $\{user\_password\}$ in the password field.	
7. Click "LOGIN".	
	8. You are redirected to a Gamebus Page. On the left of the page a menu is shown.
9. Click "Settings".	
	10. On the right side of the page the Settings component is shown.
11. Click "DATA" on the top menu.	
12. Scroll down the page until you see the "Daily_run" provider.	
13. Click the "Connect" button to the right of "Daily_run" provider.	
	14. A confirmation pop-up appears asking "Are you sure".
15. Click "CONFIRM".	
	16. The confirmation pop-up disappears.
17. Go to the Diabetter tab.	
18. Click "DONE".	
	19. You are logged in to the Diabetter application and the Main page is shown in English.
	20. To the left of your profile picture on the header $\{user\_name\}$ and below it $\{role\}$ are shown.
21. Click on "Select user" next to $\{user\_name\}$.	
	22. The applications shows "Select user" field.
23. Click on the "Select user" filed.	
	24. The application shows "No data available" because the $\{role\}$ is "User". Thus no other user data can be seen or modified.

ATP - 3 Unsuccessful login into the Diabetter application

Preconditions: The user has access to the Diabetter application and is on the Login page.

User Requirements: PS 0.0, PS 0.1

Parameters: $wrong\_user\_email$

Input Specifications	Output Specifications
1. Enter $\{wrong\_user\_email\}$ in the email field. 2. Press the login button	 3. The system does not redirect to the dashboard. 4. The system shows an error message.

3.3 Main Page

ATP - 4 Support for visualizations

Preconditions: The user is logged in to the Diabetter application.

User Requirements: GEN 0.1, USER 5.1, DATA 1.0, DATA 1.1, DATA 1.2, DATA 1.3, DATA 1.4, DATA 1.7

Parameters: -

Input Specifications	Output Specifications
1. Click on the Diabetter logo on the top left on the header.	 2. You are redirected to the Main Page. 3. Visualizations can be seen. The visualization contains sub-graphs of glucose, emotions, insulin, carbs, exercises.

ATP - 5 Support for reminders

Preconditions: The user is logged in to the Diabetter application.

User Requirements: EMOT 0.0

Parameters: -

Input Specifications	Output Specifications
	1. A reminder to enter emotional status is shown.

ATP - 6 Blood Glucose Attributes

Preconditions: The user has logged in to the Diabetter application.
The user is on the Main Page.

User Requirements: HM 0.0, HM 0.1, HM 0.2, HM 0.3

Parameters: -

Input Specifications	Output Specifications
2. Hover over the visualization.	1. The Dashboard Page is shown. A visualization with the Glucose of the user for the specified period is shown. The color at the top of the line graph indicates the type of the glucose entry: Very Low, Low, Normal, High, or Very High, where the legend at the bottom indicates which color is for which type. 3. A tooltip with information next to the mouse is shown. At the top the date and time of the glucose entry is shown. Below that, the value of the glucose entry is given.

ATP - 7 Entering emotional status

Preconditions: The user has logged in to the Diabetter application.
The user is on the Main Page.

User Requirements: EMOT 0.2, EMOT 0.3, EMOT 1.0, EMOT 3.0, PERF 0.1

Parameters: -

Input Specifications	Output Specifications
1. Scroll down to the "Enter Emotions" component.	
	2. A question asking "How happy are you?" with three options is shown.
	3. A question asking "How excited are you?" with three options is shown.
4. Choose any answer for both questions.	
5. Press "ENTER EMOTION".	
	6. An "Upload Successful" pop up is shown within 5 seconds.
	7. On the bottom right of the profile picture on the header, the last entered emotional statuses can be seen.

ATP - 8 Set Specified Time Frame

Preconditions: The user is on the main page of Diabetter.

User Requirements: STF 0.0, STF 0.1, STF 0.2, STF 0.3, PERF 0.0

Parameters: : $start\_date$, end_date, $start\_time$, end_time

Input Specifications	Output Specifications
1. Select the filter icon on the top right of the visualization overview.	
	2. The system displays the query menu.
3. Select the field for the date.	
	4. The system displays a calendar.
5. Select the $\{start\_date\}$ and $\{end\_date\}$ by clicking on the dates in the calendar.	
6. Select the "OK" button.	
	7. The system hides the calendar and displays $\{start\_date\}$ and $\{end\_date\}$ in the date field.
8. Select the "APPLY FILTERS" button.	
	9. The system hides the query menu and sets the $\{start\_date\}$ and $\{end\_date\}$ for the visualizations within 5 seconds.
10. Select the left slider at the bottom of the visualization overview and drag it to an approximate $\{start\_time\}$. 11. Select the right slider at the bottom of the visualization overview and drag it to an approximate $\{end\_time\}$.	
	12. The system displays the specified time frame.

ATP - 9 Insulin Intake over a specified time frame

Preconditions: The user has logged in to the Diabetter application.
The user is in the Main Page.
The user has set a specified time frame and it includes insulin data.

User Requirements: HM 2.21

Parameters: $start\_date$, end_date, $start\_time$, end_time

Input Specifications	Output Specifications
1. Hover the cursor on the first insulin bar on the visualization.	
	2. The system shows the date, time and value of the insulin intake.
3. Confirm that the date is larger or equal to the $\{start\_date\}$ and that the time is larger or equal to $\{start\_time\}$.	
4. Hover the cursor on the last insulin bar on the visualization.	
	5. The system shows the date, time and value of the insulin intake.
6. Confirm that the date is smaller or equal to the $\{end\_date\}$ and that the time is smaller or equal to $\{end\_time\}$.	

ATP - 10 Blood glucose over a specified time frame

Preconditions: The user has logged in to the Diabetter application.
The user is in the Main Page.
The user has set a specified time frame and it includes blood glucose values.

User Requirements: HM 2.0

Parameters: $start\_date$, end_date, $start\_time$, end_time

Input Specifications	Output Specifications
1. Hover the cursor on the first glucose point on the visualization.	
	2. The system shows the date and time of the glucose point.
3. Confirm that the date is larger or equal to the $\{start\_date\}$ and that the time is larger or equal to $\{start\_time\}$.	
4. Hover the cursor on the last glucose point on the visualization.	
	5. The system shows the date and time of the glucose point.
6. Confirm that the date is smaller or equal to the $\{end\_date\}$ and that the time is smaller or equal to $\{end\_time\}$.	

ATP - 11 Percentage and amount of time of glucose types over a specified time frame.

Preconditions: The user is on the main page of Diabetter.
The user has set a specified time frame.
The specified time frame has values for all glucose types.

User Requirements: HM 2.1, HM 2.2, HM 2.3, HM 2.4, HM 2.5, HM 2.6, HM 2.7, HM 2.8, HM 2.9, HM 2.10

Parameters: : -

Input Specifications	Output Specifications
1. Press reset icon on the top right side of the overview visualization	
2. Position the cursor on top of the "Very High" section of the stacked bar chart inside the "GLUCOSE" tab.	
	3. The system displays a tooltip showing the percentage and the amount of time the user's blood glucose values were "Very High" for a specified time frame.
4. Position the cursor on top of the "High" section of the stacked bar chart inside the "GLUCOSE" tab.	
	5. The system displays a tooltip showing the percentage and the amount of time the user's blood glucose values were "High" for a specified time frame.
6. Position the cursor on top of the "Normal" section of the stacked bar chart inside the "GLUCOSE" tab.	
	7. The system displays a tooltip showing the percentage and the amount of time the user's blood glucose values were "Normal" for a specified time frame.
8. Position the cursor on top of the "Low" section of the stacked bar chart inside the "GLUCOSE" tab.	
	9. The system displays a tooltip showing the percentage and the amount of time the user's blood glucose values were "Low" for a specified time frame.
10. Position the cursor on top of the "Very Low" section of the stacked bar chart inside the "GLUCOSE" tab.	
	11. The system displays a tooltip showing the percentage and the amount of time the user's blood glucose values were "Very Low" for a specified time frame.

ATP - 12 No visualization data message.

Preconditions: The user is logged in to the Diabetter application.
The user is on the main page of Diabetter.

User Requirements: HM 2.11

Parameters: : bad_start_date, bad_end_date

Input Specifications	Output Specifications
1. Select the filter button on the visualization overview.	
	2. The system displays the query menu.
3. Select the field for the date.	
	4. The system displays a calendar.
5. Select the $\{bad\_start\_date\}$ and $\{bad\_end\_date\}$ by clicking on the dates in the calendar.	
6. Select the "OK" button.	
	7. The system hides the calendar and displays $\{bad\_start\_date\}$ and $\{bad\_end\_date\}$ in the date field.
8. Select the "Apply filters" button.	
	9. The system displays a message "No Data".

ATP - 13 Display consumed calories for current date.

Preconditions: The user is logged in to the Diabetter application.
The user is on the main page.

User Requirements: FOOD 0.1

Parameters: : -

Input Specifications	Output Specifications
1. Select the filter button on the visualization overview.	
	2. The system displays the query menu.
3. Select the field for the date.	
	4. The system displays calendar.
5. Click on the current date twice.	
6. Click "OK".	
	7. The system hides the calendar and displays the current date twice in the date field.
8. Click "APPLY FILTERS".	
	9. The system hides the query menu and sets the specified time frame of the visualization.
10. Select the "Cumulative" tab on the component to the right of the visualization overview.	
	11. The system displays the consumed calories for the current date.

ATP - 14 Visualize carbohydrates for a specified time frame.

Preconditions: The user is logged in to the Diabetter application.
The user is on the main page.
The user has set a specified time frame.

User Requirements: FOOD 3.1

Parameters: : $start\_date$, end_date, $start\_time$, end_time

Input Specifications	Output Specifications
1. Hover the cursor on the first carbs bar on the visualization.	
	2. The system shows a tooltip with the date and time of the carbs bar.
3. Confirm that the date is larger or equal to the $\{start\_date\}$ and that the time is larger or equal to $\{start\_time\}$.	
4. Hover the cursor on the last carbs bar on the visualization.	
	5. The system shows a tooltip with the date and time of the carbs bar.
6. Confirm that the date is smaller or equal to the $\{end\_date\}$ and that the time is smaller or equal to $\{end\_time\}$.	

ATP - 15 Visualize emotions for a specified time frame.

Preconditions: The user is logged in to the Diabetter application.
The user is on the main page.
The user has set a specified time frame.

User Requirements: EMOT 3.2

Parameters: : $start\_date$, end_date, $start\_time$, end_time

Input Specifications	Output Specifications
1. Hover the cursor on the first emotion circle on the visualization.	
	2. The system shows a tooltip with the date and time of the emotion.
3. Confirm that the date is larger or equal to the $\{start\_date\}$ and that the time is larger or equal to $\{start\_time\}$.	
4. Hover the cursor on the last emotion circle on the visualization.	
	5. The system shows a tooltip with the date and time of the emotion.
6. Confirm that the date is smaller or equal to the $\{end\_date\}$ and that the time is smaller or equal to $\{end\_time\}$.	

ATP - 16 Visualize burnt calories for a specified time frame.

Preconditions: The user is logged in to the Diabetter application.
The user is on the main page.
The user has set a specified time frame.
The specified time frame includes the data about exercises and calories.

User Requirements: ACT 3.6

Parameters: : $start\_date$, end_date, $start\_time$, end_time

Input Specifications	Output Specifications
1. Hover the cursor on the first exercise start point on the exercise visualization.	
	2. The system shows a tooltip with the date, time and calories of the exercise point.
3. Confirm that the date is larger or equal to the $\{start\_date\}$ and that the time is larger or equal to $\{start\_time\}$.	
4. Hover the cursor on the last exercise start point on the exercise visualization.	
	5. The system shows a tooltip with the date, time and calories of the exercise point.
6. Confirm that the date is smaller or equal to the $\{end\_date\}$ and that the time is smaller or equal to $\{end\_time\}$.	

ATP - 17 Visualize hypoglycemia occurrences.

Preconditions: The user is logged in and on the main page.
The user has set a specified time frame.
The specified time frame includes data with glucose values below the hypoglycemia threshold.

User Requirements: HM 2.13

Parameters: -

Input Specifications	Output Specifications
1. Select the filter button on the visualization overview.	
	2. The system shows the query menu.
3. Select the Glucose Parameters selector.	
4. Select the "Hypos" option.	
5. Click outside the Glucose Parameters selector.	
	6. The system shows "Hypos" in the Glucose Parameters selector.
7. Select "APPLY FILTERS".	
	8. The system displays the hypoglycemia occurrences in the selected time frame.

ATP - 18 Visualize hyperglycemia occurrences.

Preconditions: The user is logged in and on the main page.
The user has set a specified time frame.
The specified time frame includes data with glucose values below the hyperglycemia threshold.

User Requirements: HM 2.14

Parameters: -

Input Specifications	Output Specifications
1. Select the filter button on the visualization overview.	
	2. The system shows the query menu.
3. Select the Glucose Parameters selector.	
4. Select the "Hyper" option.	
5. Click outside the Glucose Parameters selector.	
	6. The system shows "Hyper" in the Glucose Parameters selector.
7. Select "APPLY FILTERS".	
	8. The system displays the hyperglycemia occurrences in the selected time frame.

ATP - 19 Display glucose visualizations with 5 min intervals

Preconditions: The user is logged in and on the main page.

User Requirements: HM 1.0

Parameters: -

Input Specifications	Output Specifications
1. The user grabs the bottom time selector and drags it until a 5 minute interval is reached.	
2. Try to drag the time selector even more.	
	3. This action is prevented by the dashboard.

ATP - 20 Display glucose levels in the mmol/L unit

Preconditions: The user is logged in and on the main page.

User Requirements: HM 1.1

Parameters: -

Input Specifications	Output Specifications
1. Navigate to the "CUMULATIVE" tab to the right of the visualization view.	2. A1C Est. (glucose for last 3 months) is shown in the units mmol/L.

3.4 Profile Page

ATP - 21 Profile Page

Preconditions: The user has logged in to the Diabetter application.

User Requirements: USER 0.0, USER 3.0, USER 3.1, USER 3.2, USER 4.0, USER 4.1, USER 4.2, USER 5.2, USER 5.3, USER 5.4, DATA 0.6

Parameters: new_age, new_height, new_weight

Input Specifications	Output Specifications
1. Click on the arrow icon to the right of your profile picture on the header.	
	2. A drop-down menu will appear with the options "Profile" and "Logout".
3. Click "Profile".	
	4. The user is redirected to the Profile Page.
	5. On the top left of the page, a component with the user's personal information is shown. His age, height, weight are visible. Currently they are "-" instead of values.
6. Click "Edit" on the top right of the component.	
7. Change the age value to $\{new\_age\}$.	
8. Change the height value to $\{new\_height\}$.	
9. Change the weight value to $\{new\_weight\}$.	
10. Click "Done" on the top right of the component.	
	11. The age, height and weight values are changed. The current age, height and weight values of the user are shown.

ATP - 22 Default Thresholds

Preconditions: The user has logged in to the Diabetter application.
The user is in the Profile Page.

User Requirements: HM 3.5, HM 3.6, HM 3.7

Parameters: -

Input Specifications	Output Specifications
	1. At the center of the page a component "Glucose Settings" is shown. 2. At the bottom a section "Thresholds" can be seen. 3. The default A1C value is set to 7. 4. The default threshold of the hypoglycemia is set to 4. 5. The default threshold of the hyperglycemia is set to 10.

ATP - 23 Supervisor Permission

Preconditions: The user has logged in to the Diabetter application.
The user is in the Profile Page.

User Requirements: USER 1.0, USER 1.1

Parameters: $supervisor\_email\_approved$, $supervisor\_email\_pending$

Input Specifications	Output Specifications
1. At the bottom left of the page a component "Supervisors" is shown.	
	2. A subsection "Approved is shown" and $\{supervisor\_email\_approved\}$ can be seen. 3. Below the "Approved" subsection, a subsection "Awaiting approval" is shown. $\{supervisor\_email\_pending\}canbeseen.$
4. Click on the trash icon to the right of $\{supervisor\_email\_approved\}$.	
	5. $\{supervisor\_email\_approved\}$ can no longer be seen in the Approved supervisors subsection.
6. Click the check icon to the right of $\{supervisor\_email\_pending\}$	
	7. $\{supervisor\_email\_pending\}$ can be seen in the "Approved" subsection.

ATP - 24 Supervisor Abilities

Preconditions: The user is logged in to the Diabetter application as a supervisor.

User Requirements: USER 2.0, USER 2.1, USER 2.2, USER 2.3, PS 0.3

Parameters: $user\_email$, $new\_insulin\_amount$, $new\_insulin\_type$, new_date,new_time

Input Specifications	Output Specifications
	1. On the navigation bar "Select user" to the left of your name and role is shown.
2. Click on "Select user".	
	3. A field "Select user" is shown.
4. Click on "Select user" field.	
	5. A list of users that you supervise is shown. $\{user\_email\}$ can be seen on the list.
6. Click on $\{user\_email\}$.	
	7. The data of $\{user\_email\}$ can be seen on the screen.
8. Click on the table icon to the right the arrow icon.	
	9. You are redirected to a new page: the History Page of $\{user\_email\}$. A table with insulin entries are visible.
10. Click on the plus icon on the Insulin table.	
	11. The system displays a pop up where the user can add an insulin entry.
12. Enter the $\{new\_insulin\_amount\}$ in the amount field.	
13. Click the type drop-down.	
	14. The system displays the insulin type options.
15. Select the $\{new\_insulin\_type\}$.	
	16. The system hides the insulin type options and displays $\{new\_insulin\_type\}$ in the insulin type field on the pop up.
17.Select the date field.	
	18. The system displays a date picker.
19. Select the $\{new\_date\}$.	
20. Select the Ok button on the date picker.	
	21. The system hides the date picker and displays $\{new\_date\}$ in the date field on the pop up.
22. Select the time field.	
	23. The system displays a time picker.
24. Select the $\{new\_time\}$.	
25. Click the "OK" button on the time picker.	
	26. The system hides the time picker and displays $\{new\_time\}$ in the time type field on the pop up.
27. Select the save button.	
	22. The system adds the insulin entry and displays it in the table.

ATP - 25 Reminder Disabling

Preconditions: The user has logged in to the Diabetter application.

User Requirements: EMOT 0.1, EMOT 1.1, EMOT 1.2

Parameters: -

Input Specifications	Output Specifications
	1. A reminder to enter emotional status is not shown.
2. Delete a cookie by clicking on the icon left of the URL at the top of the page. Then click on the cookies tab, click on the Diabetter folder and then move to the cookies folder. In there, there is an emotion reminder cookie named "EMOTION_REMINDER" which you need to select and then press remove/verwijderen.	
3. Refresh the page	
	4. The reminder to enter emotion status is shown again.
5. Navigate to the profile section and turn off emotion reminder slider at the bottom right 6. Press the Diabetter logo on the top left to go back to the Main Page 7. Repeat steps two and three	
	8. No reminder to enter emotion status is shown

ATP - 26 Change hyperglycemia thresholds

Preconditions: The user is logged in to the Diabetter application and is on the profile page.

User Requirements: HM 4.6

Parameters: : $hyper\_threshold$

Input Specifications	Output Specifications
1. Navigate to the "Glucose Settings" component. 2. Enter $\{hyper\_threshold\}$ in the Hyperglycemia threshold text field. 3. Click the "Done" button on the top right of the "Glucose Settings" component. 5.Refresh the page.	4. The system saves the new hyperglycemia threshold. 6. The system renders the page with the saved hyperglycemia threshold.

ATP - 27 Change hypoglycemia threshold

Preconditions: The user is logged in the Diabetter application and is on the profile page.

User Requirements: HM 4.7

Parameters: : $hypo\_threshold$

Input Specifications	Output Specifications
1 Navigate to the "Glucose Settings" component. 2. Enter $\{hypo\_threshold\}$ in the Hypoglycemia threshold text field. 3. Click the "Done" button on the top right of the "Glucose Settings" component. 5. Refresh the page.	4. The system saves the new hypoglycemia threshold. 6. The system renders the page with the saved hypoglycemia threshold.

ATP - 28 Change A1C Goal

Preconditions: The user is logged in the Diabetter application and is on the profile page.

User Requirements: HM 4.10

Parameters: : $a1c\_goal$

Input Specifications	Output Specifications
1. Click on the A1C text field in the "Glucose Settings" component. 2. Enter $a1c\_goal$ in the A1c text field. 3. Click the "Done" button on the top right of the "Glucose Settings" component. 5.Refresh the page.	4. The system saves the new A1c goal. 6. The system renders the page with the saved A1c goal.

ATP - 29 Change Burnt Calories Goal

Preconditions: The user is logged in the Diabetter application and is on the profile page.

User Requirements: ACT 2.10

Parameters: : $burnt\_goal$

Input Specifications	Output Specifications
1. Click on the Burnt calories goal text field in the "Food Settings" Component. 2. Enter $burnt\_goal$ in the Burnt calories goal text field. 3. Click the "Done" button on the top right of the "Food Settings" component. 5. Refresh the page.	4. The system saves the new Burnt calories goal. 6. The system renders the page with the saved Burnt calories goal.

ATP - 30 Change Consumed calories Goal

Preconditions: The user is logged in the Diabetter application and is on the profile page.

User Requirements: FOOD 1.1

Parameters: : $consumed\_goal$

Input Specifications	Output Specifications
1. Click on the Consumed calories goal text field in the "Food Settings" Component. 2. Enter $consumed\_goal$ in the Consumed calories goal text field. 3. Click the "Done" button on the top right of the "Food Settings" component. 5. Refresh the page.	4. The system saves the new Consumed calories goal. 6. The system renders the page with the saved Consumed calories goal.

ATP - 31 Default threshold of the blood glucose types.

Preconditions: The user is logged in to the Diabetter application.
The user is on the Profile Page.
The user has not changed the default health settings.

User Requirements: HM 3.0, HM 3.1, HM 3.2, HM 3.3, HM 3.4

Parameters: : -

Input Specifications	Output Specifications
	1. The default threshold of the "Very High" blood glucose values is above 13.9 mmol/L on the slider for the "Very High" range. 2. That the default range of the "High" blood glucose values is between 10.1 mmol/L and 13.9 mmol/L on the slider for the "High" range. 3. The default range of the "Normal" blood glucose values is between 3.9 mmol/L and 10.0 mmol/L on the slider for the "Normal" range. 4. The default range of the "Low" blood glucose values is between 3.0 mmol/L and 3.8 mmol/L on the slider for the "Low" range. 5. The default threshold of the "Very Low" blood glucose values is below 3.0 mmol/L on the slider for the "Very Low" range.

ATP - 32 Upload Abbott Libre .csv file with glucose and insulin data to the application and to GameBus

Preconditions: The user is logged in to the Diabetter application.
The user is on the profile page.

User Requirements: HM 4.0, DATA 0.0, DATA 0.1

Parameters: $abbott\_file$, $date$

Input Specifications	Output Specifications
1. Press the Diabetter logo at the top left to navigate to the Main page.	
2. Select the query menu.	
3. Select $\{date\}$	
4. Press "OK" button.	
5. Press "APPLY FILTER" at the bottom right of the dialogue	
	6. There is no glucose and insulin data on this day.
7. Press the arrow icon to the right of your profile picture. Press "Profile"	
8. Navigate to the "Upload" component on the right side of the page.	
9. Click on the "Select type" drop down menu.	
	10. The application shows the possible options.
11. Choose the "Abbott" option from the drop down menu	
12. Click on the "Upload file" field.	
13. Choose the $\{abbott\_file\}$ to upload.	
14. Press the "UPLOAD" button once and wait.	
	15. A post request is sent to GameBus
	16. The csv file for the glucose and insulin data is uploaded to the application.
17. Press the Diabetter logo at the top left to navigate to the Main page.	
18. Select the query menu.	
19. Select $\{date\}$	
20. Press "OK" button.	
21. Press "APPLY FILTER" at the bottom right of the dialogue	
	22. There is glucose and insulin data on this day.

ATP - 33 Upload excel file with food data to the application and to GameBus

Preconditions: The user is logged in to the Diabetter application.
The user is on the profile page.

User Requirements: FOOD 1.0, DATA 0.2

Parameters: $food\_diary$, $date$

Input Specifications	Output Specifications
1. Press the Diabetter logo at the top left to navigate to the Main page.	
2. Select the query menu.	
3. Select $\{date\}$	
4. Press "OK" button.	
5. Press "APPLY FILTER" at the bottom right of the dialogue	
	6. There is one food data point on this day.
7. Press the arrow icon to the right of your profile picture. Press "Profile".	
8. Navigate to the "Upload" component on the right side of the page.	
9. Click on the "Select type" drop down menu.	
	10. The application shows the possible options.
11. Choose the "Food diary" option from the drop down menu	
12. Click on the "Upload file" field.	
13. Choose the $\{food\_diary\}$ to upload.	
14. Press the "UPLOAD" button.	
	15. A post request is sent to GameBus.
	16. The food diary file is uploaded.
17. Press the Diabetter logo at the top left to navigate to the Main page.	
18. Select the query menu.	
19. Select $\{date\}$	
20. Press "OK" button.	
21. Press "APPLY FILTER" at the bottom right of the dialogue	
	22. There are multiple food entries on this day.

ATP - 34 Modify the ranges and thresholds of the blood glucose types

Preconditions: The user is logged in to the Diabetter application.

The user is on the profile page.

User Requirements: USER 5.0, HM 4.1, HM 4.2, HM 4.3, HM 4.4, HM 4.5

Parameters: $new\_veryHigh$, new_high, new_normal, new_low, $new\_veryLow$

Input Specifications	Output Specifications
1. Navigate to the "Glucose Settings" part on the center of the profile page.	
2. Change the current value of "Very High" by sliding the slider to the new value: $\{new\_veryHigh\}$.	
3. Change the current values of "High" by sliding the slider to the new values: $\{new\_high\}$.	
4. Change the current values of "Normal" by sliding the slider to the new values: $\{new\_normal\}$.	
5. Change the current values of "Low" by sliding the slider to the new values: $\{new\_low\}$.	
6. Change the current value of "Very Low" by sliding the slider to the new value: $\{new\_veryLow\}$.	
7. Click on the "Done" button on the top right side of the "Glucose Settings" component.	
	8. The application saves the ranges and thresholds of the blood glucose types.
9. Refresh the page.	
10. Confirm the changes are saved.	

3.5 History Page

3.5.1 Insulin

ATP - 35 Insulin Attributes

Preconditions: The user has logged in to the Diabetter application.

User Requirements: HM 0.4, HM 0.5, HM 0.6, HM 0.7

Parameters: -

Input Specifications	Output Specifications
1. Click on the table icon to the right of the arrow icon.	2. You are redirected to a new page - the History Page. On the right half of the page a table with history Insulin entries can be seen. 3. The table includes the amount, type, date, time of each insulin intake.

ATP - 36 Delete insulin input

Preconditions: The user is on the history page of the application.
The user is on the Insulin tab of the history table.

User Requirements: HM 4.17, PERF 0.3

Parameters: -

Input Specifications	Output Specifications
1. Select the minus icon on the first insulin entry. 3. Click "OK".	2. The system displays a pop up asking the user to confirm the action. 4. The delete request is performed within 5 seconds.

ATP - 37 Enter insulin input

Preconditions: The user is on the history page of the application.
The user is on the Insulin tab on the history table.

User Requirements: HM 4.11, HM 4.12, HM 4.13, HM 4.14, HM 4.15

Parameters: $new\_insulin\_amount$, $new\_insulin\_type$, new_date, new_time

Input Specifications	Output Specifications
1. Select the plus icon on the Insulin Table.	
	2. The system displays a pop up where the user can add an insulin entry.
5. Enter the $\{new\_insulin\_amount\}$ in the amount field.	
6. Click the type drop-down.	
	7. The system displays the insulin type options.
8. Select the $\{new\_insulin\_type\}$.	
	9. The system hides the insulin type options and displays $\{new\_insulin\_type\}$ in the insulin type field on the pop up.
10.Select the date field.	
	11. The system displays a date picker.
12. Select the $\{new\_date\}$.	
13. Select the Ok button on the date picker.	
	14. The system hides the date picker and displays $\{new\_date\}$ in the date field on the pop up.
15. Select the time field.	
	16. The system displays a time picker.
17. Select the $\{new\_time\}$.	
18. Click the "OK" button on the time picker.	
	19. The system hides the time picker and displays $\{new\_time\}$ in the time type field on the pop up.
20. Select the save button.	
	21. The system adds the insulin entry and displays it in the table.

3.5.2 Food

ATP - 38 History food entries, Food attributes

Preconditions: The user is logged in the Diabetter application.
The user is on the History Page.

User Requirements: FOOD 0.0, FOOD 2.0, FOOD 2.1, FOOD 2.2, FOOD 2.3, FOOD 2.4, FOOD 2.6

Parameters: -

Input Specifications	Output Specifications
1. Select the "FOOD" tab on the history table.	2. The system displays the food entries. The table includes the type, time, date, carbohydrates, calories and glycemic index.

ATP - 39 Filter food History on number of carbohydrates.

Preconditions: The user is logged in the Diabetter application.
The user is on the Food tap of the History Page.

User Requirements: FOOD 1.3, PERF 0.4

Parameters: $operator$, $carbs\_amount$

Input Specifications	Output Specifications
1. Select the "Carbs" selector on top of the food history table.	2. The system displays the drop-down of possible carbohydrate filters: "<=", ">=", "=".
3. Select the $\{operator\}$ from the drop-down of possible carbohydrate filters.	4. The system displays the $\{operator\}$ in the "Carbs" selector.
5. Fill the text field under the "Carbs" header with the $\{carbs\_amount\}$.	6. The filter request is performed within 5 seconds.
	7. The system filters the table and displays only the food items "x", which satisfy the condition: "x $\{operator\}$ $\{carbs\_amount\}$".

ATP - 40 Visualize glucose data around food entry.

Preconditions: The user is logged in the Diabetter application.
The user is on the Food tab of the history page.
There are food entries available in the table.

User Requirements: FOOD 3.0

Parameters: -

Input Specifications	Output Specifications
1. Select first food entry from the table.	2. The system displays glucose values in the range 2 hours before the time of the food entry and 2 hours after the time of the food entry in the visualization overview on the left of the history table.

3.5.3 Activity

ATP - 41 Past activities, Activity Attributes

Preconditions: The user is logged in the Diabetter application.
The user is on the History Page.

User Requirements: ACT 0.0, ACT 1.0, ACT 1.1, ACT 1.2, ACT 1.3, ACT 1.4, ACT 1.5, ACT 1.6, ACT 1.11, ACT 2.0

Parameters: -

Input Specifications	Output Specifications
1. Select the "ACTIVITIES" tab on the history table.	2. The system displays the past activity entries. The table includes the name, type, starting/ending date, starting/ending time, burnt calories of each activity and duration as "Dur.".

ATP - 42 Visualize glucose values during the time of an activity.

Preconditions: The user is logged in the Diabetter application.
The user is on the History Page.

User Requirements: ACT 3.0

Parameters: -

Input Specifications	Output Specifications
1. Select the first activity entry in the Activities table.	2. The system filters the visualization overview along with the blood glucose visualization around the time frame of the activity.

ATP - 43 Filter activity on start time.

Preconditions: The user is logged in the Diabetter application.
The user on the history page.

User Requirements: ACT 2.1, PERF 0.4

Parameters: $operator$, $start\_time$

Input Specifications	Output Specifications
1. Select the "Start time" selector on top of the activity history table.	
	2. The system displays the drop-down of possible start time filters: "<=", ">=", "=".
3. Select the $\{operator\}$ from the drop-down of possible start time filters.	
	4. The system displays the $\{operator\}$ in the "Start time" selector.
5. Fill the text field under the "Start time" header with the $\{start\_time\}$.	
	6. The filter request is performed within 5 seconds.
	7. The system filters the table and displays only the activities "x", which satisfy the condition: "x $\{operator\}$ $\{start\_time\}$".
8. Remove the filter.	
	9. The system removes the filters and displays all entries.

ATP - 44 Filter activity on end time.

Preconditions: The user is logged in the Diabetter application.
The user is on the Activity tab of the history page.

User Requirements: ACT 2.2, PERF 0.4

Parameters: $operator$, end_time

Input Specifications	Output Specifications
1. Select the "End time" selector on top of the activity history table.	
	2. The system displays the drop-down of possible end time filters: "<=", ">=", "=".
3. Select the $\{operator\}$ from the drop-down of possible end time filters.	
	4. The system displays the $\{operator\}$ in the "End time" selector.
5. Fill the text field under the "End time" header with the $\{end\_time\}$.	
	6. The filter request is performed within 5 seconds.
	7. The system filters the table and displays only the activities "x", which satisfy the condition: "x $\{operator\}$ $\{end\_time\}$".
8. Remove the filter.	
	9. The system removes the filters and displays all entries.

ATP - 45 Filter activity on date.

Preconditions: The user is logged in the Diabetter application.
The user is on the Activity tab of the history page.

User Requirements: ACT 2.3, PERF 0.4

Parameters: $operator$, $date\_1$, $date\_2$

Input Specifications	Output Specifications
1. Select the "Start Date" selector on top of the activity history table.	
	2. The system displays the drop-down of possible date filters: "<=", ">=", "=".
3. Select the $\{operator\}$ from the drop-down of possible date filters.	
	4. The system displays the $\{operator\}$ in the "Start Date" selector.
5. Fill the text field under the "Date" header with the $\{date\_1\}$.	
	6. The filter request is performed within 5 seconds.
	7. The system filters the table and displays only the activities "x", which satisfy the condition: "x $\{operator\}$ $\{date\_1\}$".
8. Change the Start Date to $\{date\_2\}$.	
	9. The system shows no activities.
10. Remove the filter.	
	11. The system removes the filters and displays all entries.

ATP - 46 Filter activity on type.

Preconditions: The user is logged in the Diabetter application.
The user is on the Activity tab of the history page.

User Requirements: ACT 2.4, PERF 0.4

Parameters: $type\_name$

Input Specifications	Output Specifications
1. Fill the text field under the "Type" header with the $\{type\_name\}$.	
	2. The system filters the table and displays only the activities of type $\{type\_name\}$.

3.5.4 Emotion

ATP - 47 Emotion attributes

Preconditions: The user has logged in to the Diabetter application.
The user is on the History Page.

User Requirements: EMOT 2.0, EMOT 2.1, EMOT 2.2, EMOT 2.3

Parameters: -

Input Specifications	Output Specifications
1. Click on the "EMOTIONS" button at the top of the right component.	2. The past emotion data can be seen. The table includes the happiness value, the excitement value, the date and time of the emotion.

ATP - 48 Edit emotion input

Preconditions: The user is logged in the Diabetter application and is on the History page.
The user is on the Emotions tab on the history table.

User Requirements: EMOT 1.4, PERF 0.2

Parameters: $happiness\_emoji$, $excitement\_emoji$

Input Specifications	Output Specifications
1. Select the "pen" icon on the first emotion entry.	2. The system displays a pop up where the user can edit the emotion entry.
3. Select the $\{happiness\_emoji\}$.	
4. Select the $\{excitement\_emoji\}$.	
5. Select the save button.	6. The edit request is performed within 5 seconds.
	7. The system updates the emotion entry and displays it in the table.

ATP - 49 Delete emotion input

Preconditions: The user is logged in the Diabetter application.
The user is on the history page of the application.
The user is on the Emotions tab of the history table.

User Requirements: EMOT 1.3, PERF 0.3

Parameters: -

Input Specifications	Output Specifications
1. Select the "minus" icon on the first emotion entry.	2. The system displays a pop up asking the user to confirm the action.
3. Click the "OK" button.	4. The delete request is performed within 5 seconds.

ATP - 50 Visualize glucose data around an emotional status.

Preconditions: The user is logged in to the Diabetter application.
The user is on the Emotion tab of the history page.
There are emotion entries available in the table.

User Requirements: EMOT 3.1

Parameters: -

Input Specifications	Output Specifications
1. Select an emotion entry from the table.	2. The system displays glucose values in the range 2 hours before the time of the emotion entry and 2 hours after the time of the emotion entry in the visualization overview on the left of the history table.

ATP - 51 Upload file with food data from Eetmeter to the application and to GameBus

Preconditions: The user is logged in the Diabetter application.
The user is on the profile page.

User Requirements: FOOD 1.0, DATA 0.5

Parameters: $eetmeter\_file$, $date$

Input Specifications	Output Specifications
1. Press the Diabetter logo at the top left to navigate to the Main page.	
2. Select the query menu, select $\{date\}$ and press the ok button.	
3. Press apply filter at the bottom right of the dialogue	
	4. There is no food data on this day.
5. Press on the arrow icon next to you profile picture. Press "Profile".	
6. Navigate to the "Upload" component on the right side of the page.	
7. Click on the "Select type" drop down menu.	
	8. The application shows the possible options.
9. Choose the "Eetmeter" option from the drop down menu	
10. Click on the "Upload file" field.	
11. Choose the $\{eetmeter\_file\}$ to upload.	
12. Press the "UPLOAD" button.	
	13. A post request is sent to GameBus
	14. The Eetmeter file is uploaded
15. Press the Diabetter logo at the top left to navigate to the Main page.	
16. Select the query menu, select $\{date\}$ and press the ok button.	
17. Press apply filter at the bottom right of the dialogue	
	18. There is food data on this day.

ATP - 52 Import Excel file with food data from OneDrive to the application and send it to GameBus

Preconditions: The user is logged in. Furthermore, there is a onedrive account with a food diary on it.

User Requirements: FOOD 1.0, DATA 0.3, DATA 0.4

Parameters: $onedrive\_username$, $onedrive\_password$, $onedrive\_path$, $date$

Input Specifications	Output Specifications
1. Press the Diabetter logo at the top left to navigate to the Main page.	
2. Select the query menu, select $\{date\}$ and press the ok button.	
3. Press apply filter at the bottom right of the dialogue	
	4. There are a few food entries on this day.
5. Navigate to the "Connect OneDrive" component on the right side of the page.	
6. Click on the "CONNECT" button.	
	7. The user is redirected to the OneDrive sign up page.
8. If no credentials can be entered, press Use Another Account	
	9. User is shown the login input field
10. Enter $onedrive\_username$	
11. Enter $onedrive\_password$	
	12. The user is logged in and redirected to Diabetter
13. Enter the $onedrive\_path$	
14. Press "UPLOAD"	
	15. Upload path is saved locally and food diary file is imported
	16. Data is sent to GameBus
17. Press the Diabetter logo at the top left to navigate to the Main page.	
18. Select the query menu, select $\{date\}$ and press the ok button.	
19. Press apply filter at the bottom right of the dialogue	
	20. There is now a food entry at 15:30.

ATP - 53 Edit Insulin Input

Preconditions: The user is logged in the Diabetter application and is on the History page.

The user is on the Insulin tab on the history table.

User Requirements: HM 4.16, PERF 0.2

Parameters: $insulin\_amount$, $insulin\_type$

Input Specifications	Output Specifications
1. Select the "pen" icon on the first insulin entry.	
	2. The system displays a pop up where the user can edit the insulin entry.
3. Write $\{insulin\_amount\}$ in the field for "Amount".	
4. Select the "Type" selector.	
	5. The system displays a drop-down with two possible options: "Rapid", "Slow".
6. Select $\{insulin\_type\}$.	
	7. The system hides the drop-down.
8. Select the save button.	
	9. The edit request is performed within 5 seconds.
	10. The system updates the insulin entry and displays it in the table.

4 Test Procedures

4.1 Purpose

This section describes how the acceptance test of Diabetter should be executed such that each test specification is covered. A test case is executed successfully if, when performed by the user according to the input specifications and using the correct parameters and precondition, the system output corresponds to the output specifications. If all test cases are executed successfully, it may be concluded that Diabetter is functionally correct as defined in the URD [1].

4.2 Procedures

Before executing the acceptance test all environmental needs as described in section 2.5 should be met. Furthermore, before starting the Diabetter team will send the tester(s) the files needed to execute the test cases successfully.

4.2.1 Access

1. Run ATP-1 - Accessing the Diabetter application

4.2.2 Authentication: user

1. Run ATP-3 - Unsuccessful login into the Diabetter application:
   - $wrong\_user\_name$: wrong@email.com
2. Run ATP-2 - Successful login into the Diabetter application:
   - $user\_email$: atp@user.nl
   - $user\_password$: atpusernl
   - $user\_name$: atp user
   - $role$: user

4.2.3 Profile Page User Activity

1. Run ATP-5: Support for reminders
2. Run ATP-21: Profile Page
   - new_age: 21
   - new_height: 190
   - new_weight: 80
3. Run ATP-22: Default Thresholds

4. Run ATP-23: Supervisor Permission
   - $supervisor\_email\_approved$: atp@supervisor.nl
   - $supervisor\_email\_pending$: atp@supervisor2.nl
5. Run ATP-31: Default threshold of the blood glucose types
6. Run ATP-26: Change hyperglycemia thresholds
   - $hyper\_threshold$: 10.5
7. Run ATP-27: Change hypoglycemia thresholds
   - $hypo\_threshold$: 3.5
8. Run ATP-28: Change A1C Goal
   - $a1c\_goal$: 8
9. Run ATP-29: Change Burnt calories Goal
   - $burnt\_goal$: 2200
10. Run ATP-30: Change Consumed calories Goal
    - $consumed\_goal$: 2200
11. Run ATP-34: Modify the ranges and thresholds of the blood glucose types
    - $new\_veryHigh$: 13.8
    - new_high: 10.0 - 13.7
    - new_normal: 3.8 - 9.9
    - new_low: 2.9 - 3.7
    - $new\_veryLow$: 2.8
12. Run ATP-32: Upload Abbott Libre .csv file with glucose and insulin data to the application and to GameBus
    - $abbott\_file$: `abbott_14th_upload.csv`
    - $date$: 2021-06-14
13. Run ATP-51: Upload file with food data from Eetmeter to the application and to GameBus
    - $eetmeter\_file$: `eetmeter_14th_upload.xml`
    - $date$: 2021-06-14
14. Run ATP-33: Upload excel file with food data to the application and to GameBus
    - $food\_diary$: `foodDiary_14-15th_upload.xlsx`
    - $date$: 2021-06-14
15. Run ATP-52: Import excel file with food data from One Drive to the application and to GameBus
    - $onedrive\_username$: diabettertest2@outlook.com
    - $onedrive\_password$: tcC2qR7YvuH6WwuAPBFH
    - $onedrive\_path$: `Documents/foodDiary_14th.xlsx`
    - $date$: 2021-06-14

4.2.4 Main Page User Activity

1. Run ATP-4: Support for visualizations
2. Run ATP-6: Blood Glucose Attributes
3. Run ATP-7: Entering emotional status
4. Run ATP-19: Display glucose visualizations with 5 min intervals
5. Run ATP-20: Display glucose levels in the mmol/L unit
6. Run ATP-12: No visualizations data message
   - bad_start_date: 2022-07-01
   - bad_end_date: 2022-07-01
7. Run ATP-8: Set Specified Time Frame
   - $start\_date$: 2021-06-16
   - end_date: 2021-06-17
   - $start\_time$: 03:00
   - end_time: 16:00
8. Run ATP-9: Insulin Intake for a Specified Time Frame
   - $start\_date$: 2021-06-16
   - end_date: 2021-06-17
   - $start\_time$: 03:00
   - end_time: 16:00
9. Run ATP-10: Blood glucose over a specified time frame
   - $start\_date$: 2021-06-16
   - end_date: 2021-06-17
   - $start\_time$: 03:00
   - end_time: 16:00
10. Run ATP-14: Visualize carbohydrates for a specified time frame
    - $start\_date$: 2021-06-16
    - end_date: 2021-06-17
    - $start\_time$: 03:00
    - end_time: 16:00
11. Run ATP-15: Visualize emotions for a specified time frame
    - $start\_date$: 2021-06-16
    - end_date: 2021-06-17
    - $start\_time$: 03:00

- end_time: 16:00

12. Run ATP-16: Visualize burnt calories for a specified time frame
    - $start\_date$: 2021-06-16
    - end_date: 2021-06-17
    - $start\_time$: 03:00
    - end_time: 16:00
13. Run ATP-17: Visualize hypoglycemia occurrences
14. Run ATP-18: Visualize hyperglycemia occurrences
15. Run ATP-13: Display consumed calories for current date
16. Run ATP-11: Percentage and amount of time of glucose types for a specified time frame

4.2.5 History Page User Activity

1. Run ATP-35: Insulin Attributes
2. Run ATP-37: Enter insulin input
    - $new\_insulin\_amount$: 4
    - $new\_insulin\_type$: Slow
    - new_date: 2021-06-18
    - new_time: 14:00
3. Run ATP-53: Edit Insulin Input
    - $new\_insulin\_amount$: 5
    - $new\_insulin\_type$: Slow
4. Run ATP-36: Delete insulin input
5. Run ATP-38: History food entries, Food attributes
6. Run ATP-39: Filter food history on number of carbohydrates
    - $operator$: >=
    - $carbs\_amount$: 20
7. Run ATP-40: Visualize glucose data around food entry
8. Run ATP-41: Past activities, Activity Attributes
9. Run ATP-42: Visualize glucose values during the time of an activity
10. Run ATP-43: Filter activity on start time
    - $operator$: >=
    - $start\_time$: 13:00

11. Run ATP-44: Filter activity on end time
    - $operator$: <=
    - end_time: 17:00
12. Run ATP-45: Filter activity on date
    - $operator$: >=
    - $date\_1$: 2021-06-18
    - $date\_2$: 2021-06-19
13. Run ATP-46: Filter activity on type
    - $type\_name$: WALK
14. Run ATP-47: Emotion attributes
15. Run ATP-48: Edit emotion input
    - $happiness\_emoji$: 1
    - $excitement\_emoji$: 1
16. Run ATP-49: Delete emotion input
17. Run ATP-50: Visualize glucose data around an emotional status

4.2.6 Authentication: supervisor

1. Logout of the application by following the steps below:
    - Click on the arrow icon which is to the right of your profile picture on the header.
    - From the options select "Logout".
    - You are now logged out of Diabetter and on the Login page
2. Run ATP-1 - Successful login into the Diabetter application:
    - $supervisor\_email$: atp@supervisor2.nl
    - $supervisor\_password$: atpsupervisor2nl
    - $user\_name$: atp supervisor2
    - $role$: supervisor

4.2.7 User Reminder

1. Run ATP-25 - Reminder Disabling

4.2.8 Supervisor Activities

1. Run ATP-24 - Supervisor Abilities
    - $user\_email$: atp@user.nl
    - $new\_insulin\_amount$: 6
    - $new\_insulin\_type$: RAPID
    - new_date: 2021-06-18
    - new_time: 15:00

5 Test Reports

The test reports can be found in section 5 of the Software Transfer Document (STD) [3].

6 Traceability Matrix

6.1 Mapping Test Cases to User Requirements

ATP	URD
General	
ATP-1	GEN 0.0, ENV 0.0, ENV 0.1
Privacy & Security	
ATP-2	USER 0.1, PS 0.0, PS 0.2, PS 0.3, PS 0.4, ENV 0.1, ENV 0.2
ATP-3	PS 0.0, PS 0.1
Main Page	
ATP-4	GEN 0.1, USER 5.1, DATA 1.0, DATA 1.1, DATA 1.2, DATA 1.3, DATA 1.4, DATA 1.7
ATP-5	EMOT 0.0
ATP-6	HM 0.0, HM 0.1, HM 0.2, HM 0.3
ATP-7	EMOT 0.2, EMOT 0.3, EMOT 1.0, EMOT 3.0, PERF 0.1
ATP-8	STF 0.0, STF 0.1, STF 0.2, STF 0.3, PERF 0.0
ATP-9	HM 2.21
ATP-10	HM 2.0
ATP-11	HM 2.1, HM 2.2, HM 2.3, HM 2.4, HM 2.5, HM 2.6, HM 2.7, HM 2.8, HM 2.9, HM 2.10
ATP-12	HM 2.11
ATP-13	FOOD 0.1
ATP-14	FOOD 3.1
ATP-15	EMOT 3.2
ATP-16	ACT 3.6
ATP-17	HM 2.13
ATP-18	HM 2.14
ATP-19	HM 1.0
ATP-20	HM 1.1
Profile Page	
ATP-21	USER 0.0, USER 3.0, USER 3.1, USER 3.2, USER 4.0, USER 4.1, USER 4.2, USER 5.2, USER 5.3, USER 5.4, DATA 0.6
ATP-22	HM 3.5, HM 3.6, HM 3.7
ATP-23	USER 1.0, USER 1.1
ATP-24	USER 2.0, USER 2.1, USER 2.2, USER 2.3, PS 0.3
ATP-25	EMOT 0.1, EMOT 1.1, EMOT 1.2
ATP-26	HM 4.6
ATP-27	HM 4.7

ATP-28	HM 4.10
ATP-29	ACT 2.10
ATP-30	FOOD 1.1
ATP-31	HM 3.0, HM 3.1, HM 3.2, HM 3.3, HM 3.4
ATP-32	HM 4.0, DATA 0.0, DATA 0.1
ATP-33	FOOD 1.0, DATA 0.2
ATP-34	USER 5.0, HM 4.1, HM 4.2, HM 4.3, HM 4.4, HM 4.5

History Page

ATP-35	HM 0.4, HM 0.5, HM 0.6, HM 0.7
ATP-36	HM 4.17, PERF 0.3
ATP-37	HM 4.11, HM 4.12, HM 4.13, HM 4.14, HM 4.15
ATP-38	FOOD 0.0, FOOD 2.0, FOOD 2.1, FOOD 2.2, FOOD 2.3, FOOD 2.4, FOOD 2.6
ATP-39	FOOD 1.3, PERF 0.4
ATP-40	FOOD 3.0
ATP-41	ACT 0.0, ACT 1.0, ACT 1.1, ACT 1.2, ACT 1.3, ACT 1.4, ACT 1.5, ACT 1.6, ACT 1.11, ACT 2.0
ATP-42	ACT 3.0
ATP-43	ACT 2.1, PERF 0.4
ATP-44	ACT 2.2, PERF 0.4
ATP-45	ACT 2.3, PERF 0.4
ATP-46	ACT 2.4, PERF 0.4
ATP-47	EMOT 2.0, EMOT 2.1, EMOT 2.2, EMOT 2.3
ATP-48	EMOT 1.4, PERF 0.2
ATP-49	EMOT 1.3, PERF 0.3
ATP-50	EMOT 3.1
ATP-51	FOOD 1.0, DATA 0.5
ATP-52	FOOD 1.0, DATA 0.3, DATA 0.4
ATP-53	HM 4.16, PERF 0.2

6.2 Mapping User Requirements to Test Cases

URD	ATP	Priority
General		
GEN 0.0	ATP-1	M
GEN 0.1	ATP-4	M
GEN 0.2	Not implemented	W
GEN 0.3	Not implemented	W
User Management		
USER 0.0	ATP-21	M

USER 0.1	ATP-2	M
USER 1.0	ATP-23	M
USER 1.1	ATP-23	M
USER 2.0	ATP-24	M
USER 2.1	ATP-24	M
USER 2.2	ATP-24	M
USER 2.3	ATP-24	S
USER 2.4	Not implemented	C
USER 3.0	ATP-21	S
USER 3.1	ATP-21	S
USER 3.2	ATP-21	S
USER 4.0	ATP-21	S
USER 4.1	ATP-21	S
USER 4.2	ATP-21	S
USER 4.3	Not implemented	C
USER 4.4	Not implemented	C
USER 5.0	ATP-34	M
USER 5.1	ATP-4	M
USER 5.2	ATP-21	S
USER 5.3	ATP-21	S
USER 5.4	ATP-21	S
USER 5.5	Not implemented	C

Specified Time

STF 0.0	ATP-8	M
STF 0.1	ATP-8	M
STF 0.2	ATP-8	M
STF 0.3	ATP-8	M

Health Metrics

HM 0.0	ATP-6	M
HM 0.1	ATP-6	M
HM 0.2	ATP-6	M
HM 0.3	ATP-6	M
HM 0.4	ATP-35	M
HM 0.5	ATP-35	M
HM 0.6	ATP-35	M
HM 0.7	ATP-35	M
HM 1.0	ATP-19	M
HM 1.1	ATP-20	M
HM 1.2	Not implemented	S
HM 1.3	Not implemented	S
HM 1.4	Not implemented	S
HM 1.5	Not implemented	S
HM 1.6	Not implemented	S

HM 1.7	Not implemented	S
HM 1.8	Not implemented	S
HM 1.9	Not implemented	S
HM 1.10	Not implemented	C
HM 1.11	Not implemented	C
HM 1.12	Not implemented	C
HM 2.0	ATP-10	M
HM 2.1	ATP-11	M
HM 2.2	ATP-11	M
HM 2.3	ATP-11	M
HM 2.4	ATP-11	M
HM 2.5	ATP-11	M
HM 2.6	ATP-11	M
HM 2.7	ATP-11	M
HM 2.8	ATP-11	M
HM 2.9	ATP-11	M
HM 2.10	ATP-11	M
HM 2.11	ATP-12	M
HM 2.12	Not implemented	S
HM 2.13	ATP-17	S
HM 2.14	ATP-18	S
HM 2.15	Not implemented	S
HM 2.16	Not implemented	S
HM 2.17	Not implemented	S
HM 2.18	Not implemented	S
HM 2.19	Not implemented	S
HM 2.20	Not implemented	S
HM 2.21	ATP-9	S
HM 2.22	Not implemented	S
HM 3.0	ATP-31	M
HM 3.1	ATP-31	M
HM 3.2	ATP-31	M
HM 3.3	ATP-31	M
HM 3.4	ATP-31	M
HM 3.5	ATP-22	S
HM 3.6	ATP-22	S
HM 3.7	ATP-22	S
HM 4.0	ATP-32	M
HM 4.1	ATP-34	M
HM 4.2	ATP-34	M
HM 4.3	ATP-34	M
HM 4.4	ATP-34	M
HM 4.5	ATP-34	M
HM 4.6	ATP-26	S
HM 4.7	ATP-27	S
HM 4.8	Not implemented	S

HM 4.9	Not implemented	S
HM 4.10	ATP-28	S
HM 4.11	ATP-37	S
HM 4.12	ATP-37	S
HM 4.13	ATP-37	S
HM 4.14	ATP-37	S
HM 4.15	ATP-37	S
HM 4.16	ATP-53	S
HM 4.17	ATP-36	S
HM 4.18	Not implemented	S
HM 4.19	Not implemented	S
HM 4.20	Not implemented	C

Activity

ACT 0.0	ATP-41	M
ACT 0.1	Not implemented	S
ACT 0.2	Not implemented	C
ACT 0.3	Not implemented	C
ACT 1.0	ATP-41	M
ACT 1.1	ATP-41	M
ACT 1.2	ATP-41	M
ACT 1.3	ATP-41	M
ACT 1.4	ATP-41	M
ACT 1.5	ATP-41	M
ACT 1.6	ATP-41	M
ACT 1.7	Not implemented	S
ACT 1.8	Not implemented	C
ACT 1.9	Not implemented	C
ACT 1.10	Not implemented	C
ACT 1.11	ATP-41	C
ACT 2.0	ATP-41	M
ACT 2.1	ATP-43	S
ACT 2.2	ATP-44	S
ACT 2.3	ATP-45	S
ACT 2.4	ATP-46	S
ACT 2.5	Not implemented	C
ACT 2.6	Not implemented	C
ACT 2.7	Not implemented	C
ACT 2.8	Not implemented	C
ACT 2.9	Not implemented	C
ACT 2.10	ATP-29	C
ACT 3.0	ATP-42	M
ACT 3.1	Not implemented	S
ACT 3.2	Not implemented	S
ACT 3.3	Not implemented	S

ACT 3.4	Not implemented	C
ACT 3.5	Not implemented	C
ACT 3.6	ATP-16	C
ACT 3.7	Not implemented	C

Food

FOOD 0.0	ATP-38	M
FOOD 0.1	ATP-13	M
FOOD 0.2	Not implemented	S
FOOD 1.0	ATP-51, ATP-33, ATP-52	M
FOOD 1.1	ATP-30	S
FOOD 1.2	Not implemented	S
FOOD 1.3	ATP-39	S
FOOD 1.4	Not implemented	S
FOOD 1.5	Not implemented	C
FOOD 1.6	Not implemented	C
FOOD 1.7	Not implemented	C
FOOD 1.8	Not implemented	C
FOOD 1.9	Not implemented	C
FOOD 1.10	Not implemented	C
FOOD 2.0	ATP-38	M
FOOD 2.1	ATP-38	M
FOOD 2.2	ATP-38	M
FOOD 2.3	ATP-38	M
FOOD 2.4	ATP-38	M
FOOD 2.5	Not implemented	S
FOOD 2.6	ATP-38	C
FOOD 3.0	ATP-40	M
FOOD 3.1	ATP-14	M
FOOD 3.2	Not implemented	S

Emotion

EMOT 0.0	ATP-5	M
EMOT 0.1	ATP-25	M
EMOT 0.2	ATP-7	M
EMOT 0.3	ATP-7	M
EMOT 0.4	Not implemented	C
EMOT 1.0	ATP-7	M
EMOT 1.1	ATP-25	M
EMOT 1.2	ATP-25	M
EMOT 1.3	ATP-49	S
EMOT 1.4	ATP-48	S
EMOT 1.5	Not implemented	C
EMOT 2.0	ATP-47	M
EMOT 2.1	ATP-47	M

EMOT 2.2	ATP-47	M
EMOT 2.3	ATP-47	M
EMOT 3.0	ATP-7	M
EMOT 3.1	ATP-50	S
EMOT 3.2	ATP-15	S

Privacy & Security

PS 0.0	ATP-3, ATP-2	M
PS 0.1	ATP-3	M
PS 0.2	ATP-2	M
PS 0.3	ATP-2, ATP-24	M
PS 0.4	ATP-2	M
PS 0.5	Not implemented	S

Performance

PERF 0.0	ATP-8	M
PERF 0.1	ATP-7	M
PERF 0.2	ATP-48, ATP-53	M
PERF 0.3	ATP-36, ATP-49	M
PERF 0.4	ATP-39, ATP-43, ATP-44, ATP-45, ATP-46	M
PERF 0.5	Not implemented	S
PERF 0.6	Not implemented	S
PERF 0.7	Not implemented	S
PERF 0.8	Not implemented	S
PERF 0.9	Not implemented	S
PERF 0.10	Not implemented	C
PERF 0.11	Not implemented	C
PERF 0.12	Not implemented	C
PERF 0.13	Not implemented	C
PERF 0.14	Not implemented	C

Reliability

REL 0.0	Addressed in Section 2.2: Features to be tested	M
REL 0.1	Not implemented	S

Environment

ENV 0.0	ATP-1	M
ENV 0.1	ATP-1, ATP-2	M
ENV 0.2	ATP-2	M
ENV 0.3	Not implemented	S
ENV 0.4	Not implemented	S
ENV 0.5	Not implemented	C
ENV 0.6	Not implemented	C

ENV 0.7	Not implemented	C
ENV 0.8	Not implemented	C
ENV 0.9	Not implemented	C
ENV 0.10	Not implemented	C

Data

DATA 0.0	ATP-32	M
DATA 0.1	ATP-32	M
DATA 0.2	ATP-33	M
DATA 0.3	ATP-52	S
DATA 0.4	ATP-52	S
DATA 0.5	ATP-51	S
DATA 0.6	ATP-21	S
DATA 0.7	Not implemented	C
DATA 0.8	Not implemented	TBR
DATA 0.9	Not implemented	C
DATA 0.10	Not implemented	C
DATA 0.11	Not implemented	C
DATA 0.12	Not implemented	C
DATA 0.13	Not implemented	C
DATA 0.14	Not implemented	W
DATA 0.15	Not implemented	W
DATA 1.0	ATP-4	M
DATA 1.1	ATP-4	M
DATA 1.2	ATP-4	M
DATA 1.3	ATP-4	M
DATA 1.4	ATP-4	S
DATA 1.5	Not implemented	S
DATA 1.6	Not implemented	S
DATA 1.7	ATP-4	C
DATA 1.8	Not implemented	S
DATA 1.9	Not implemented	S
DATA 1.10	Not implemented	S
DATA 1.11	Not implemented	C
DATA 1.12	Not implemented	C
DATA 1.13	Not implemented	C
DATA 1.14	Not implemented	C
DATA 1.15	Not implemented	C
DATA 1.16	Not implemented	C

A Client

Name: **Michel Chaudron**

Date: 28 June 2021

Approval: