eWALL Smart Caring Home

User Manual

What is eWALL?

eWALL is a smart home system using a large touch-screen for feedback and control. The platform offers various health- and wellbeing services aimed at elderly with age related impairments, and patients suffering from Chronic Obstructive Pulmonary Disease (COPD.) or elderly suffering from early stages of dementia or mild cognitive impairments (MCI).

Different services target different members of the target population. eWALL consists of the following components: Main eWALL Screen – a 40-42" touch-screen located in the user's home for feedback and control of the eWALL services; Home Sensor Network for gathering data about the user and his environment in the home; Home Device Gateway – a central processing unit in the home that controls the eWALL main screen and collects and forwards data to the cloud; Cloud Platform – central web-based platform where data from all eWALL users is collected for data collection, intelligent decision making and data processing is taking place here.

eWALL offers the following services to its users, that can be activated, deactivated and configured based on the specific user's needs: Daily Physical Activity Service, Sleep Service, Physical Video Exercise Service, Bike Exercise Service, Cognitive Game Mental Training Service, Daily Functioning Monitoring Service, Healthcare Monitoring Service, and Domotics Services, and Well-being Advertisements.. During the proof of concept study, the eWALL is installed in the participant's home for a period of 6 weeks. for 6 weeks installed in the participant's home.

Getting started

After installation you will receive a letter with your username and password. For getting started make sure that the eWALL machine is turned on and you can see the login page on your eWALL screen, like in the picture below.

Touch the flag representing your preferred language. In this way you make sure you will understand you will interface.

- Touch the part where it says username. You will see the text getting smaller and covering up leaving space for you to type in your username. Use your wireless keyboard for typing your username.
- Touch the part where it says password. You will see the same behavior of the text, similar to the username. Using the eWALL wireless keyboard, type your password.
- Press the login button.
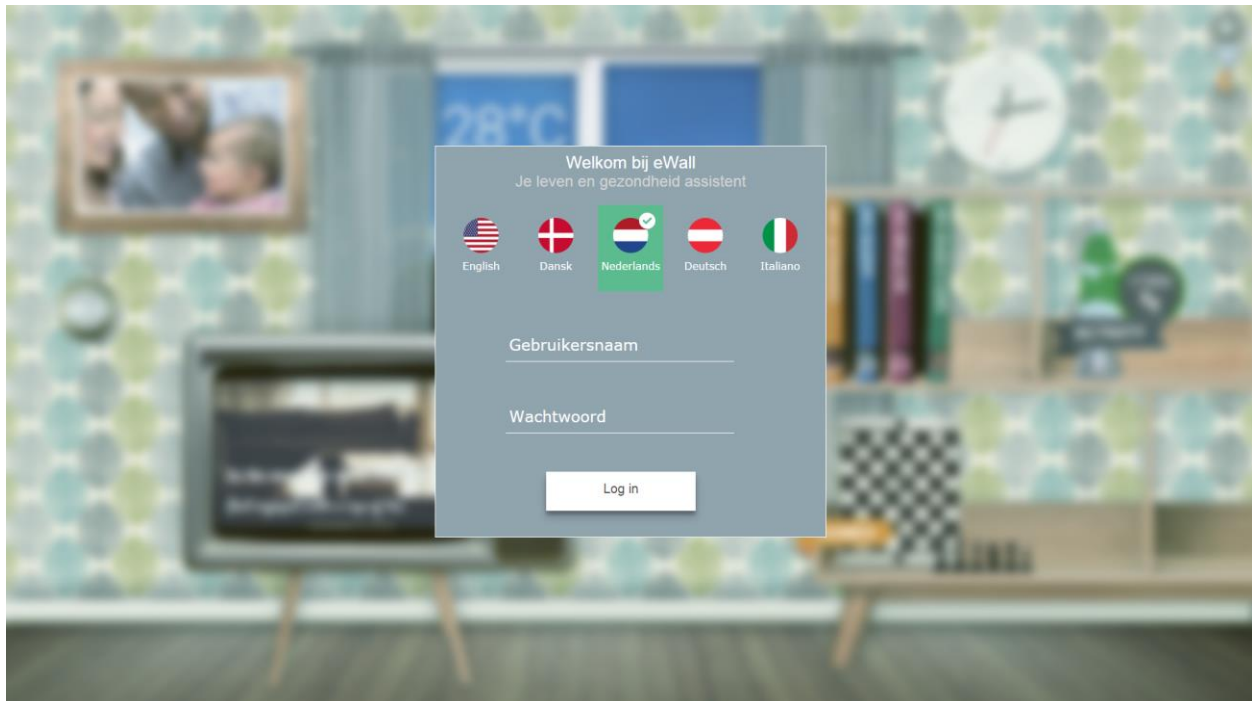
The login screen

If you type the username and password correctly, you will see the main screen: a picture of a living room. If you enter the username or password wrong, a notification will tell you to type them again. There is no limit to how many mistakes you can make. If you have trouble logging in contact your local support team.

The main screen after successful login. The active screen.

After login you can always logout by pressing the Logout button on the top - left side of the screen.

Using eWALL

When you're close to the screen, eWALL will displays its active mode, as you see in the picture above. The active mode allows you access to all widgets and applications.

When you move further away from the screen, eWALL understands you don't want to move it for a while, therefore it will enter into passive mode. As you see in the picture below, the passive mode shows only a part of this living room.

In the passive mode, you will see:
- Information about the weather
- Information about the temperature and humidity in your home
- A smart photo frame with pictures of your family
- Your agenda with the upcoming appointments displayed as the teletext on the TV
- A suggestion on how to live healthier shown as an advertisement on the TV

When you're away, eWALL will show the passive mode.

Widgets

What are eWALL widgets?

Widgets are components of the eWALL living room which offer pieces of information. Tipically widgets do not require any interaction, but some of them have buttons. They appear as objects in the living room. For example the clock shows the current time, the weather outside the window shows an animation describing the present weather forecast, but also shows information about future weather, etc.

Below we will describe the types of eWALL widgets.

How to use eWALL widgets

Not all widgets can be interacted with, but some do have buttons. The typical interaction is done by touching the button in order to execute a change. Follow the description below to see how every widget should function.

The Clock widget

As shown in the image the clock widget displays the present time. This widget is not interactive. Touching this widget will not create any change in the eWALL living room.

The Weather Widget

It shows the current weather information using an animation, outside the window, which matches with the present weather detection. also, on the left hand side window, this widget display the current outside temperature, the current outside humidity percent, and the chance is going to be cloudy.
You will also see the forecasted weather time and temperature in the next 3 hours and for the next day.

This widget is not interactive. Touching it will not produce any change to the eWALL living room.

The Activity widget

The activity widget shows you how many steps you have made during the day. The measurement start in the morning in the moment you put your Fitbit sensor on your wrist. Different variations of colors, floating in the lava lamp, show you how close or far you are from achieving your daily physical activity goals.

- An orange color corresponds to very low activity. It is normal to see this color during the morning, or throughout the days when you don't perform physical activity.
- Yellow color corresponds to below average physical activity. It is normal to see this color during the mornings or in throughout the days when you perform very light physical activity.
- A light green color will be displayed when you are close to reaching your daily physical activity goal.
- An intense green color show that you have reached or even passed your daily physical activity in goal.

This colors will be also shown by the eWALL smart light during the day.

This is an interactive widget. If you touch it, it will launch the my activity application. If the physical activity service is not activated for your eWALL, you will not see this widget in the bookshelf.

The TV Screen widget

This widget refers to only the screen off the TV, and not the buttons.
It will alternate between showing well-being advertisement and showing your upcoming agenda.

What are well-being advertisements?

The TV will advertises you well being actions whenever it thanks the time is proper for it. It takes into account your performance, your health state, your ability to use the eWALL services, your compliance to previous well-being advertiments, the weather conditions outside and the environment inside the home, the time of day and several other relevant parameters.

You can set the agenda item by using the calendar application. Check the application section for more details on how to use the calendar application.

The TV screen is not an interactive widget, but the TV buttons from the right hand side launch physical exercise applications. Check out more details about the physical exercise applications in the applications section below.

The Photo frame widget

This widget show the picture your family uploads on Flickr. Just like a commercial digital photo frame, it will show a sequence of several picture that your family uploads. If you do not have a Flickr account at the time of eWALL installation, or did not request your eWALL installation team to create one for you, this widget will display a sequence of beautiful landscapes.

This is not an interactive widget. No change to the living room will happen when you touch it.
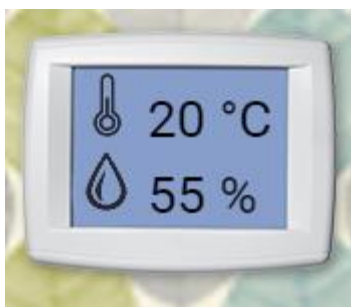
The Thermostat widget

 This widget shows the interior temperature and humidity around eWALL.

This is an interactive widget. Touching it will launch telematics application, which allows you to see temperature, illuminance and humidity measurements from all the rooms in your home.

If you do not have the Domotics Service active, you will not see this widget on your eWALL.

The Wallpaper changer widget

You can find this widget on the top right hand side of the eWALL screen.

It allows to change the wallpaper in the eWALL living room.

This is an interactive widget. touching one of the buttons will change the wallpaper according to the color pattern of each button.

Applications

What are eWALL applications

Applications allow you to use the eWALL services. They provide complex overviews of your health status and your evolution over time, but also coaching functionalities, like for example following video exercises in order to strengthen your body and your breathing apparatus. Nature of each application is associated to an object in the living room.

How to use eWALL applications

Launching an application

The typical interaction for launching an application is to touch that associated object. When launched every application will overlay the living room with a specific large object, for example: books contain monitoring information, the TV buttons launch applications which offer video related content, The other physical object launch applications which relate to their nature.

Closing an application

You can close/exit an application at any point. For doing this you need to touch on the yellow button on top of each application, as in this picture..

My Sleep application

Launching the application

This application shows how you sleep during the night. Knowing how you sleep will allow you to make decisions, on whether or not to change your sleep behavior.

You can access the application by touching the blue book with the title My Sleep from the bookshelf.

Measuring sleep every night

Once you launch the application you will see an overview of last night's sleep. On the bottom the book, you will see a horizontal list with the other measured days. Touching any of these days will show you the sleep description of that day.

Getting a sleep overview per week

You can also see a weekly overview of your sleep, by touching the top right hand side button WEEK. After touching it, you will see the sleep measurements of the present week in graphs. For every graph, touching the blue, or gray circles will show you the actual number.
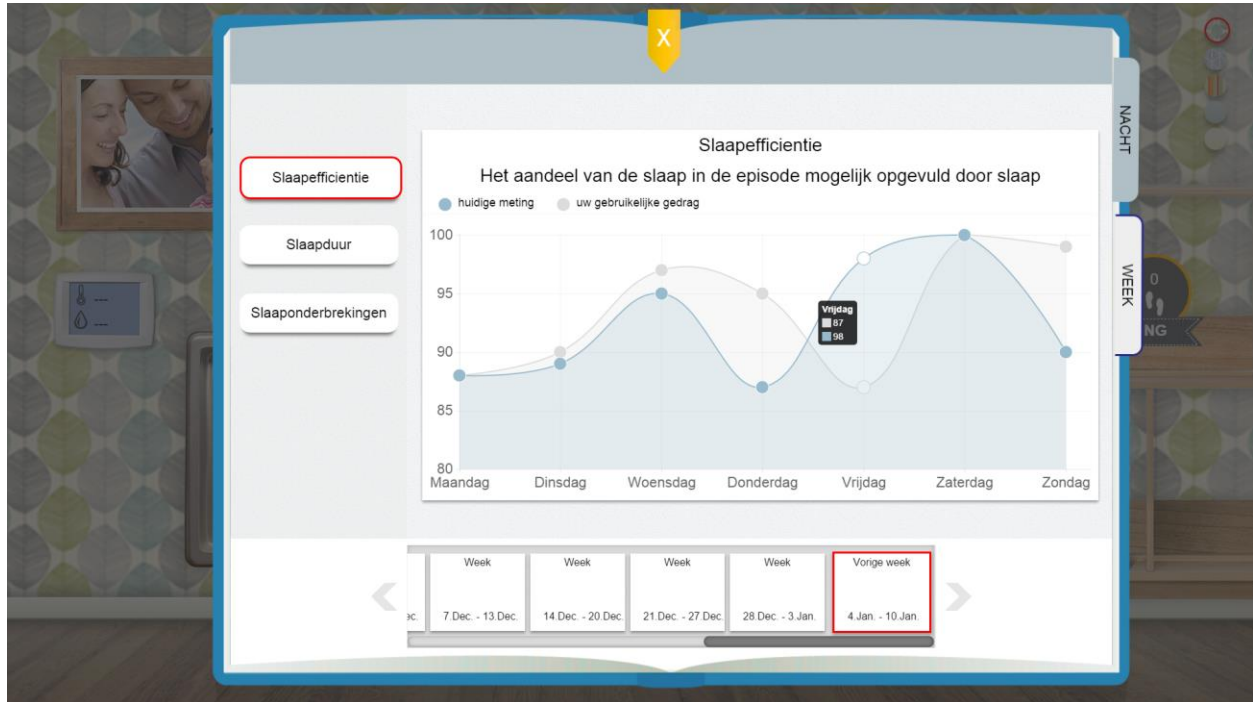
The first graph is the Sleep Efficiency graph. Sleep Efficiency counts how much time you actually spend sleeping from the time you are in bed at night. This measurement is counted in percentage.
For a good night of sleep, you should consider a measurement average 80%.

As you see in the picture: on Friday the sleep efficiency is 98%, but usually on Fridays the sleep efficiency is 87%.

This means you slept better that Friday, compared to the average Friday.

Sleep time

It is important to understand how much you sleep. Touch the Sleeptime button from the left hand side of the book to see your sleep duration over the week. The sleep duration is displayed in hours.
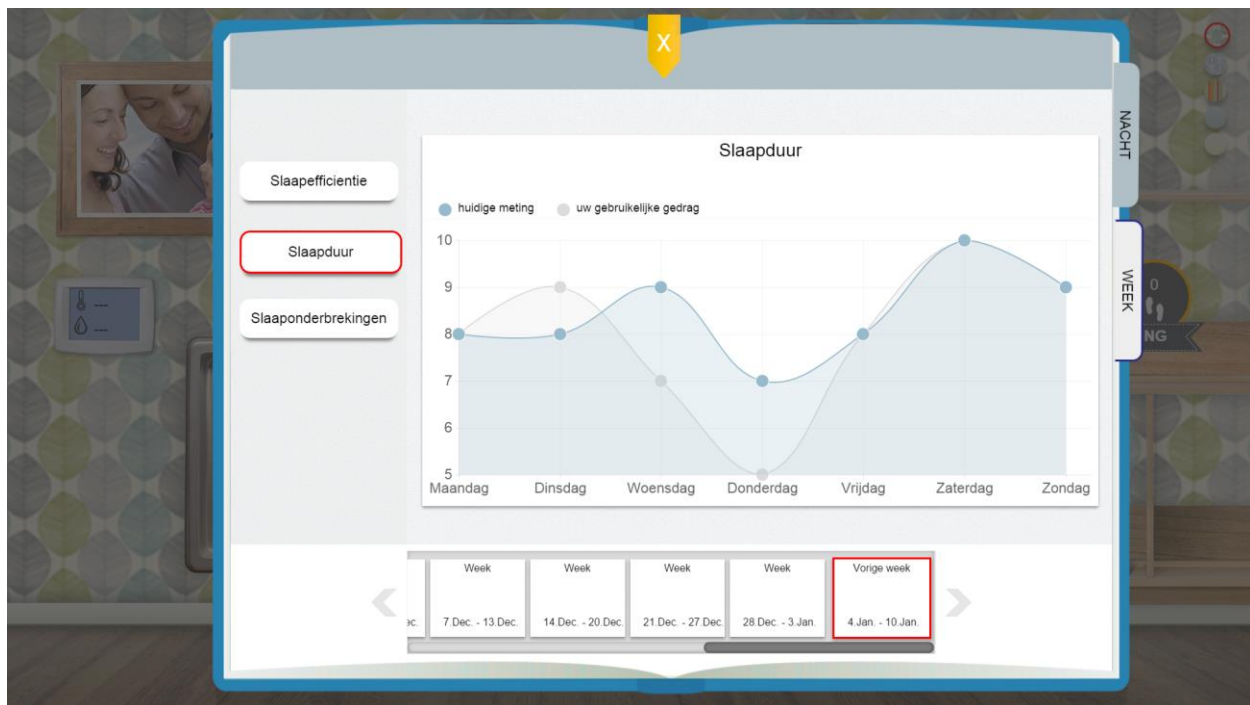
Sleep Interruptions

It is important to understand how much you interrupt your sleep during the night. Touch the Sleep Interruptions button on the left hand side of the screen to see your sleep interruptions over the week.
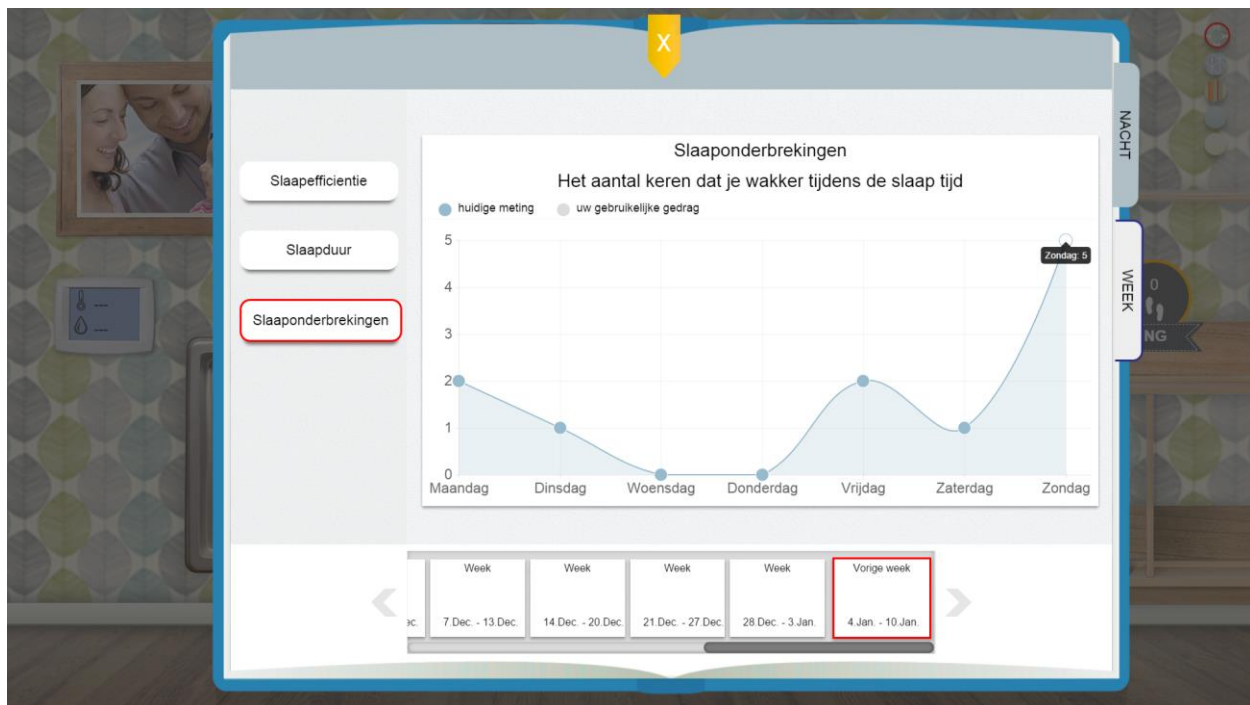
You may wake up tired after a night with many sleep interruptions.

My Health application

This application show the history of your health measurements. Knowing your health measurements will help you understand how your health is progressing.

Launching the application

You can access this application by touching the pink book from the bookshelf call to My Health.

Getting an overview of your measurements

Today's measurements

After you launch the sleep application, you will see a large book book showing your heart rate, saturation and blood pressure measurements from today. If no measurements have been taken today, the table will be empty. Each measurement is labeled with color, to help you better understand it.
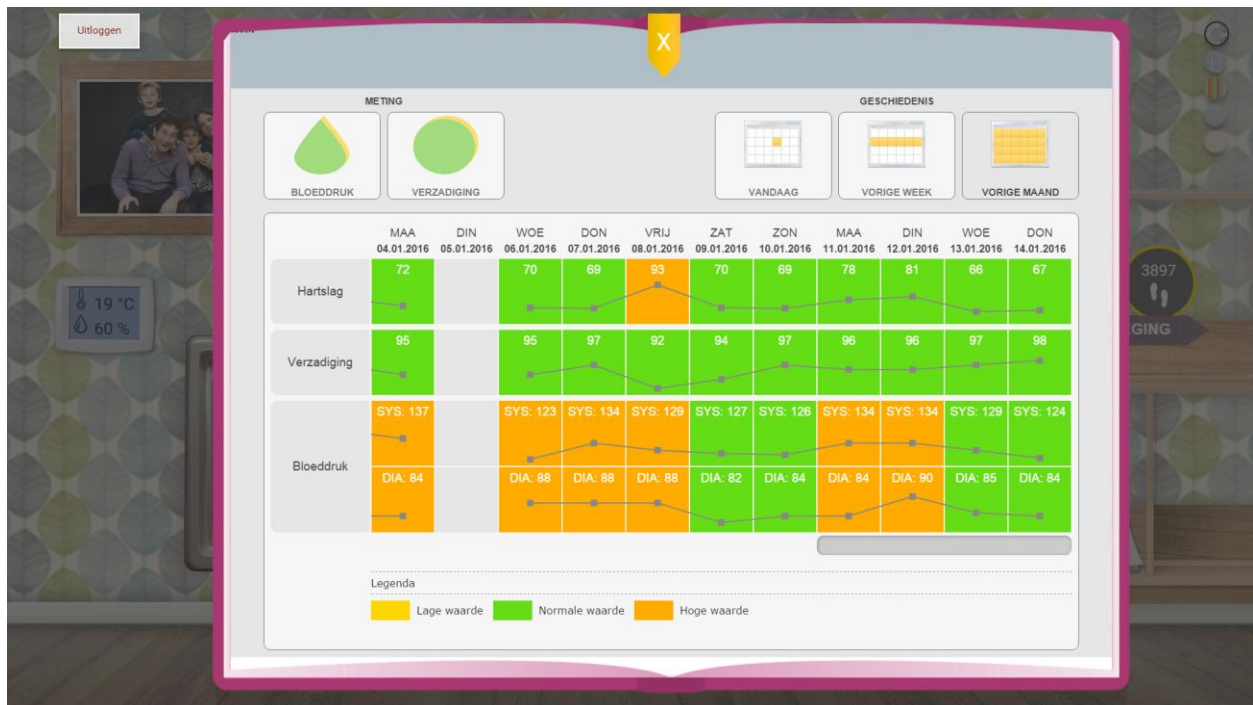
This week's measurements

Touch the top right hand side button called This Week for getting a list of this week's measurements. No measurements and future days will not have any information, so you will see gray empty places in the table. The same colors will help you better understand the measurements table.

This month's measurements

METING   GESCHIEDENIS

BLOEDDRUK   VERZADIGING   VANDAAG   VORIGE WEEK   VORIGE MAAND

	MAA 04.01.2016	DIN 05.01.2016	WOE 06.01.2016	DON 07.01.2016	VRIJ 08.01.2016	ZAT 09.01.2016	ZON 10.01.2016	MAA 11.01.2016	DIN 12.01.2016	WOE 13.01.2016	DON 14.01.2016
Hartslag	72		70	69	93	70	69	78	81	66	67
Verzadiging	95		95	97	92	94	97	96	96	97	98
Bloeddruk	SYS: 137		SYS: 123	SYS: 134	SYS: 129	SYS: 127	SYS: 126	SYS: 134	SYS: 134	SYS: 129	SYS: 124
	DIA: 84		DIA: 88	DIA: 88	DIA: 88	DIA: 82	DIA: 84	DIA: 84	DIA: 90	DIA: 85	DIA: 84

Legenda

Lage waarde   Normale waarde   Hoge waarde

19 °C
60 %

Touch the top right hand side button called This Month for getting a list of this month's measurements. Empty parts of the table means the measurements were not taken.

Taking Measurements

Taking a blood pressure measurement

Tap the top left hand side button called Blood Pressure. The book will show you a picture of the measurement equipment and step-by-step instructions on how to perform the measurement. once you understand these instructions, touch the Start Measurement button.
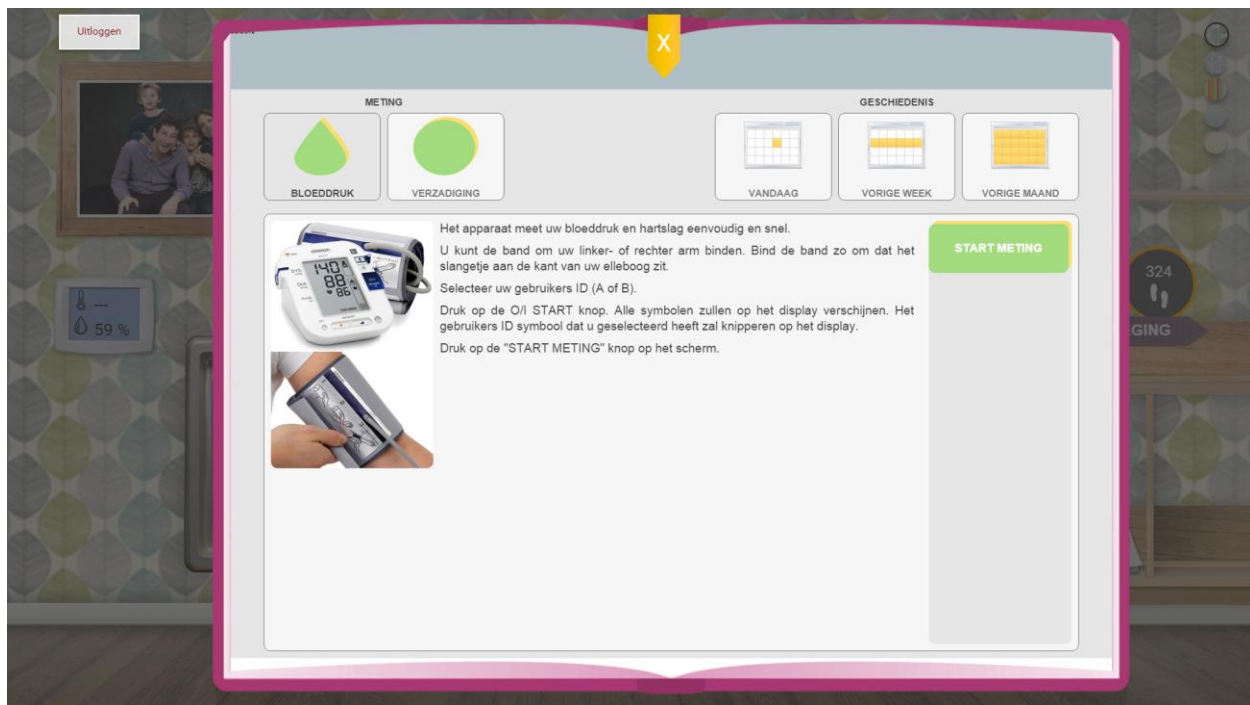
Taking a blood oxygen saturation measurement

Touch the top left hand side button called saturation. the book will show you a picture of the measurement device and step-by-step instructions on how to take a measurement. when you are ready, click the Start Measurement button.
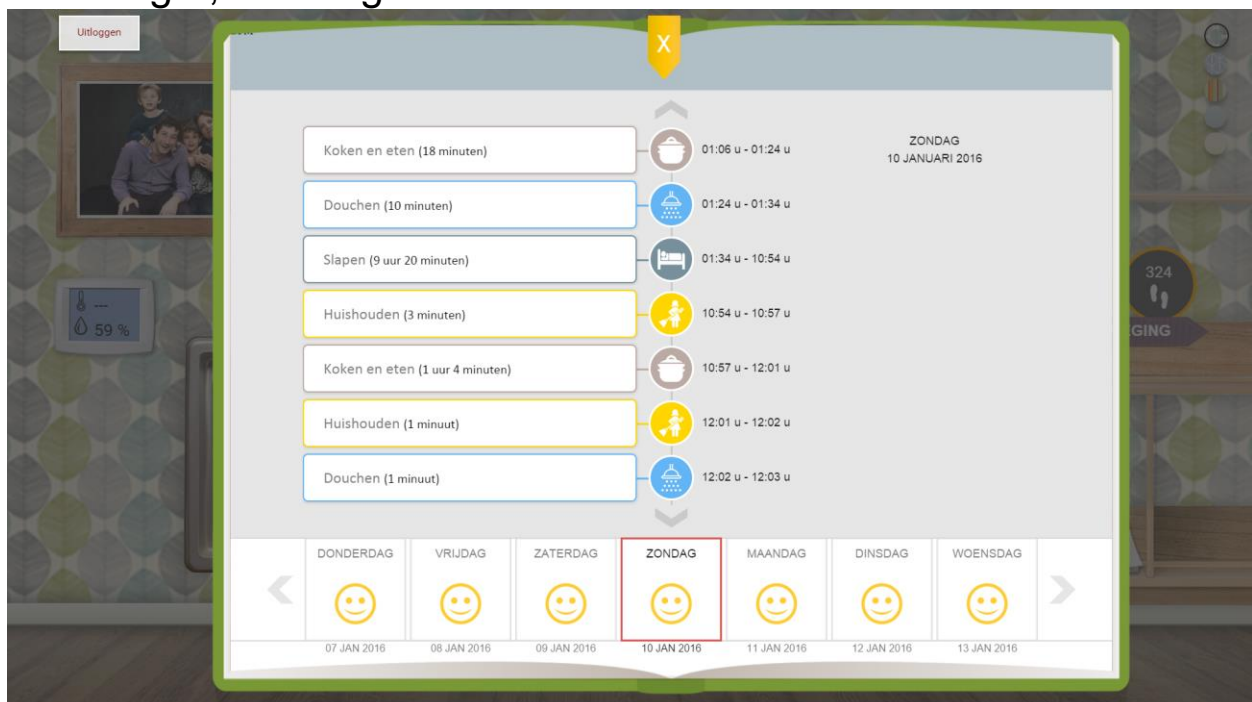
My Day application

This application shows a list of activities you perform around the house. Knowing what to do around the house will help you better organize your day. The activities are: cocking, cleaning, self-hygiene, sleeping, watching TV, relaxing, etc.

Launching the application

 You can access this application by touching the green book from the book shelf called My Day.

Getting the daily house activity overview

When launching the applications, the book will show you what you've been doing in your home so far today. The bottom list shows passed measurement days and your general mood from that day. To select a different day, simply touch the square in the list. You can see more days by swiping your finger across the list left or right, or using the arrow buttons from the sides.

In this example, the book shows 10.January.2015. To see more activities, swipe your finger across the book from bottom to top, or vice-versa. You can also use the gray arrow from the top and bottom of the activity list.

My Activity application

This application helps you keep track of your physical activity throughout the day.

Launching the application

You can access this application by touching the orange book, or the lava lamp from the bookshelf.

Getting today's physical activity overview

The application will open how you moved today. In this book you will see in the center the chart with your physical activity divided in 2 hour segments. Each segment shows a bar with a height proportional to the amount of movement you've made during those 2 hours. To better understand the measurements, bars are colored according to the intensity of the movement as well. On top of this chart and in the side, you will see icons displaying the type of movement you've been doing:

- the little man on the chair means you had a relaxing moment.
- the little man walking means you made low intensity movements
- the little man running means you meda moderate to high intensity movements, like fast walking, or running.
- the little man with his arms up, means you made high intensity movement, like fitness, or aerobic.

eWALL measures your activity in steps, kilometers and burned calories.

Steps mean you performed an activity which solicited your body, as if you were taking the displayed number of steps. To see this measurement, touch the Steps button on the top right hand side of the chart.

Kilometers mean you performed an activity equivalent to walking the displayed number of kilometers. To see this, touch the Kilometers button on the top right hand side of the chart.

Calories count how much calories you consumed during your movements. To see this touch the Calories button on the top right hand side of the chart.

Getting measurements for passed days

On the bottom part of the book you can see a list with passed days measurements. Every day in this list has a red bar with the number of steps eWALL recommends you take for that specific day. Also, the color which fills the day shows how close you are for accomplishing the eWALL recommendation.

You can select a different day by touching if in the list. You will observe the data from the big activity chart changing with the detailed activity measurements eWALL has taken for your selected day.

For getting weekly and monthly overviews, click on the buttons from the top of the measurements list. Picture below shows detail on where you can find the buttons.

ACTIVITEIT PER ⌈ DAG ⌉ ⌈ **WEEK** ⌉ ⌈ MAAND ⌉
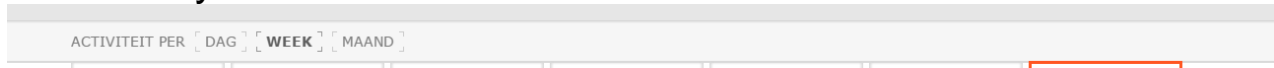
The Calendar application

This application allows you keep track of your appointments throughout the present and future days. You can add, edit, or remove appointments, or any other relevant event you'd like to mark in your calendar.

To access this application, touch the calendar object from the bottom of the bookshelf.

Seeing your calendar for today

Once you launch the application that calendar will show you today's appointment in at least. Every row in a list counts for half an hour.
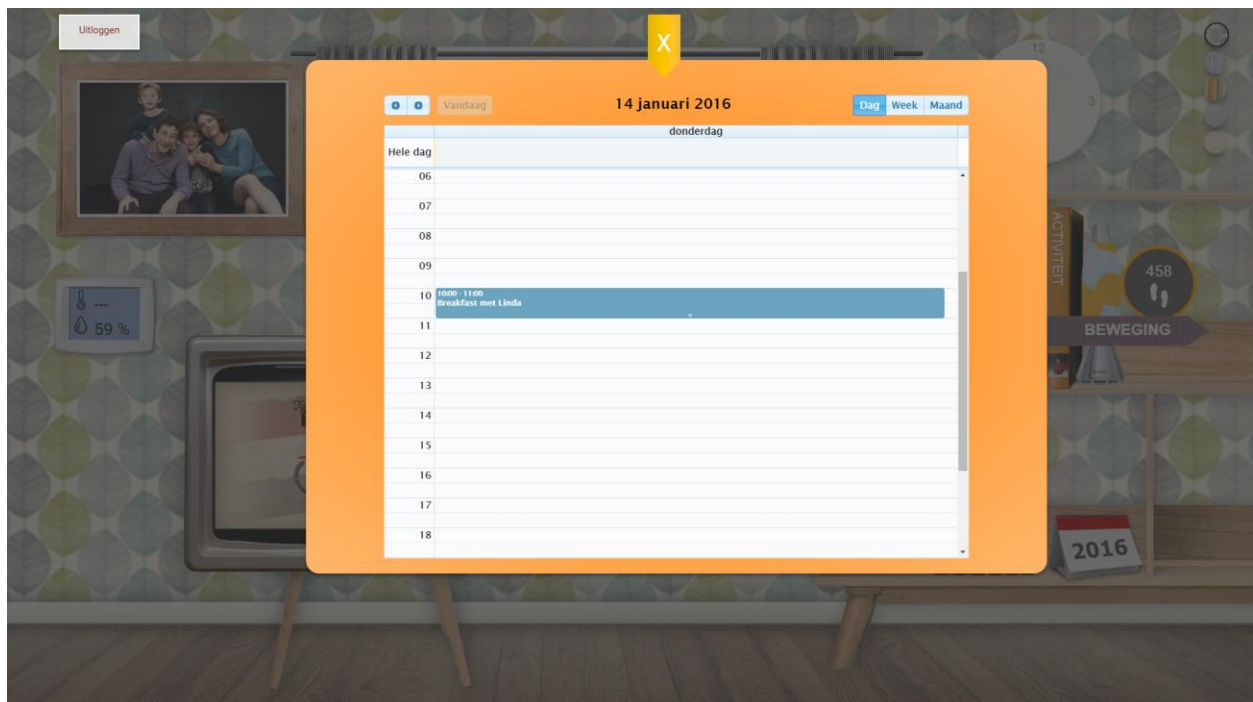
To see more appointments from today swipe your finger up and down across the list.

To see the appointments from different days touch to top left hand side buttons showing arrows.

Seeing this week and this month agenda

To see the agenda for this week, press the top right hand side button called week. The calendar will change to a table showing the appointments from your week, as you see in the picture below.

To see your appointment from different weeks, touch the top left hand side arrow buttons.
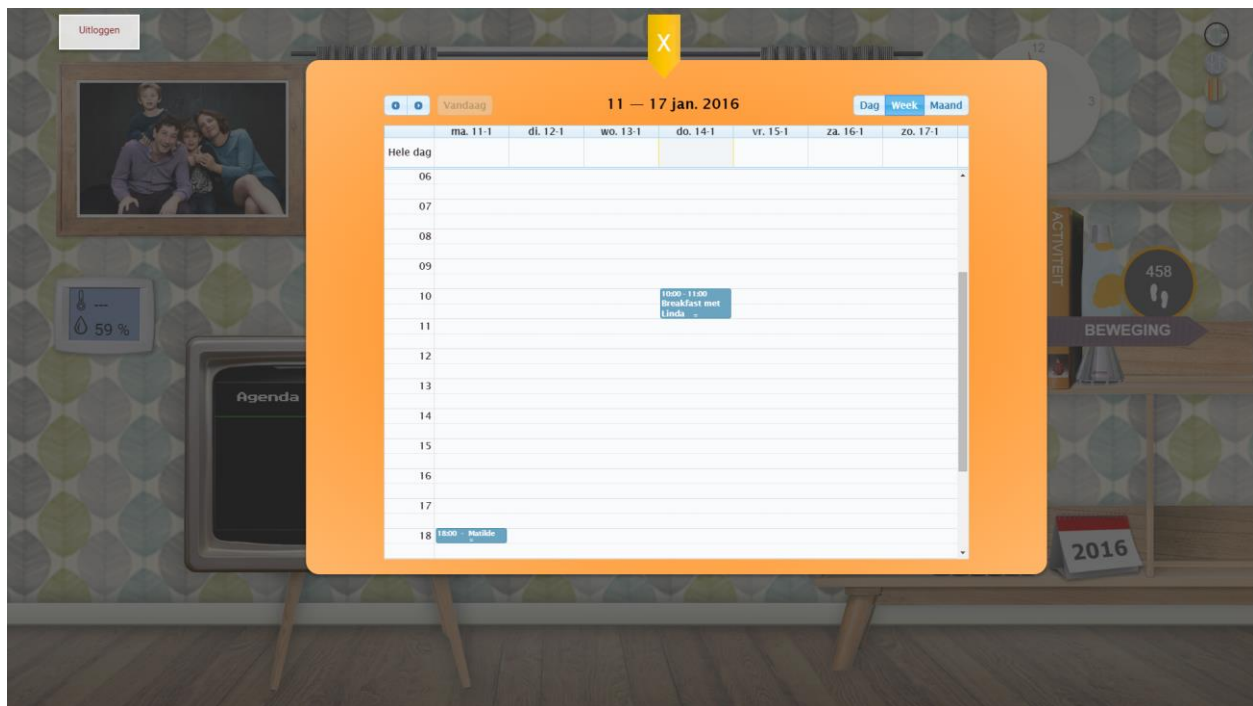
To see your agenda for this month, in a similar way, touch the top right hand side button called Month. The calendar will change to a table showing the appointments for this month, as you see in the picture below.
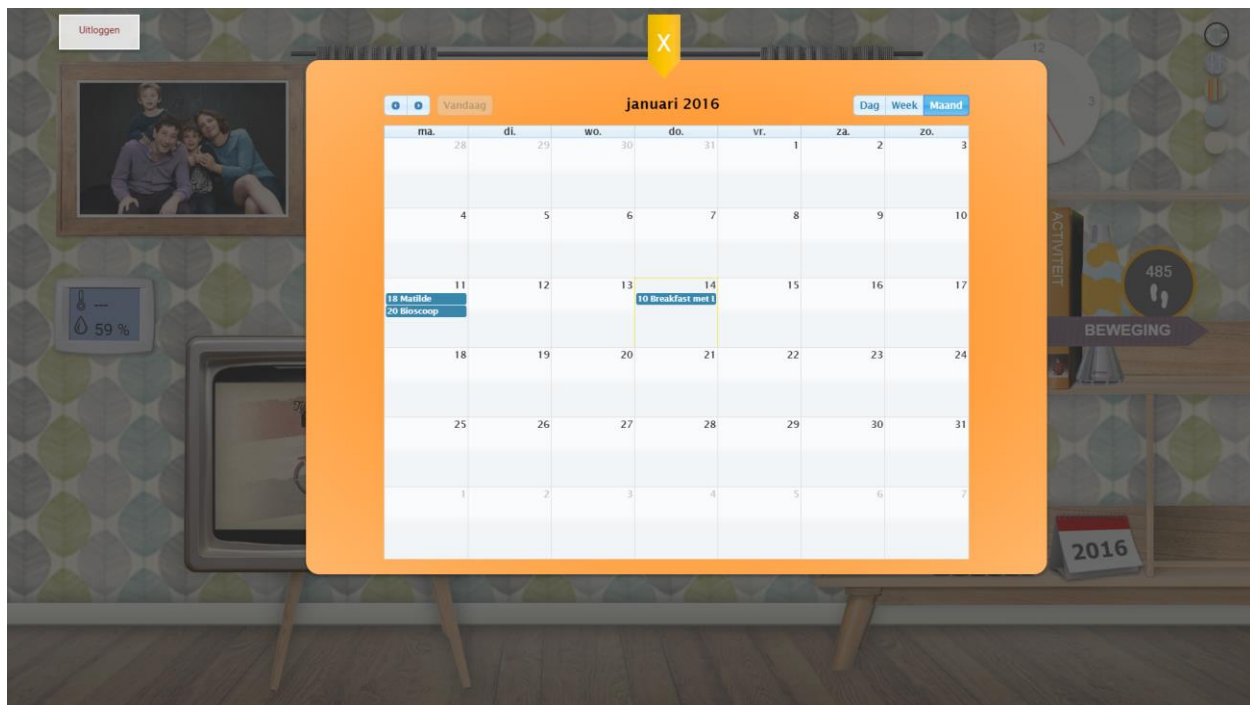
To see your appointment from different weeks, touch the top left hand side arrow buttons.

Adding an appointment

Adding an appointment is easy. Just tap an empty space in the appointment table. You can do this if you look at the daily appointment table, weekly appointment table, or monthly appointment table. A little window will show on top of the calendar, where are you can write the title of your future appointment, set up the starting time and set up the end time of your appointment. See the picture below.
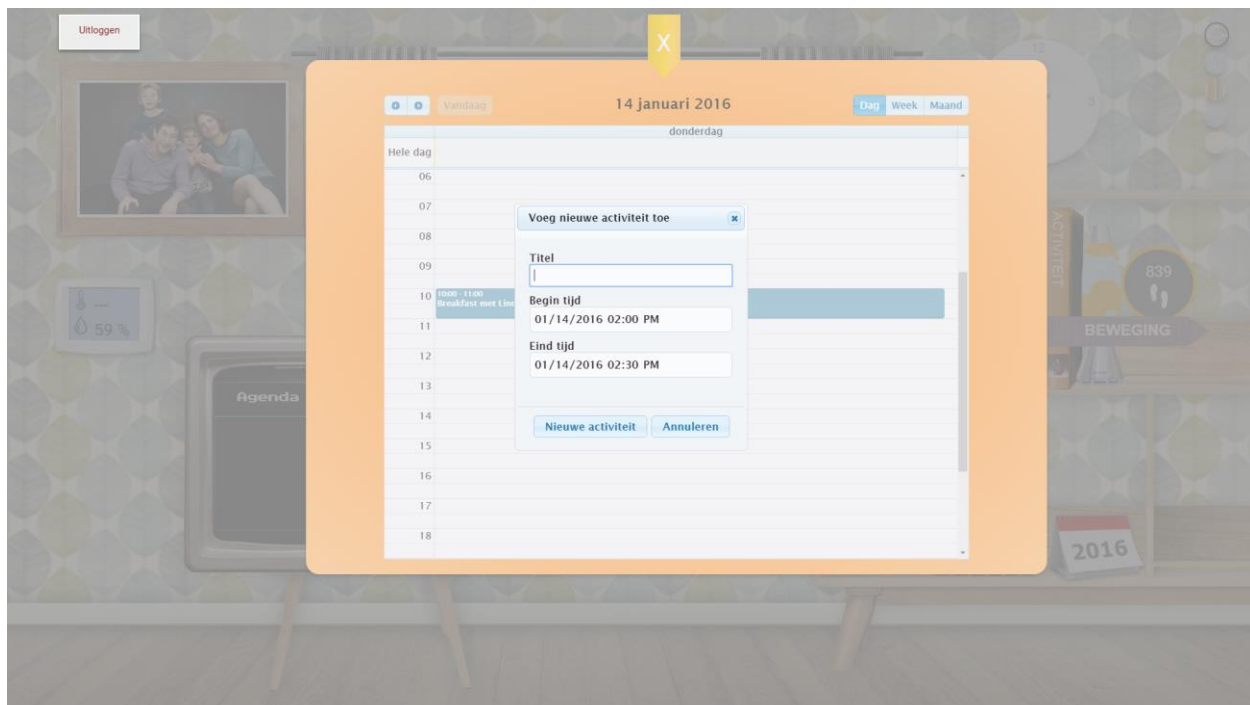
Use the eWALL wireless keyboard to type in the necessary text.

Once you are done touch the New Activity button to record your new appointment. If you want to cancel the appointment at this moment touch the cancel button.

Changing existing appointments

To change the information from an existing appointment, simply touch the appointment. A similar window, like when adding a new appointment, will show up.

Change the information from your appointment using the eWALL wireless keyboard. Once you've made your changes touch the Edit event button to save the changes.
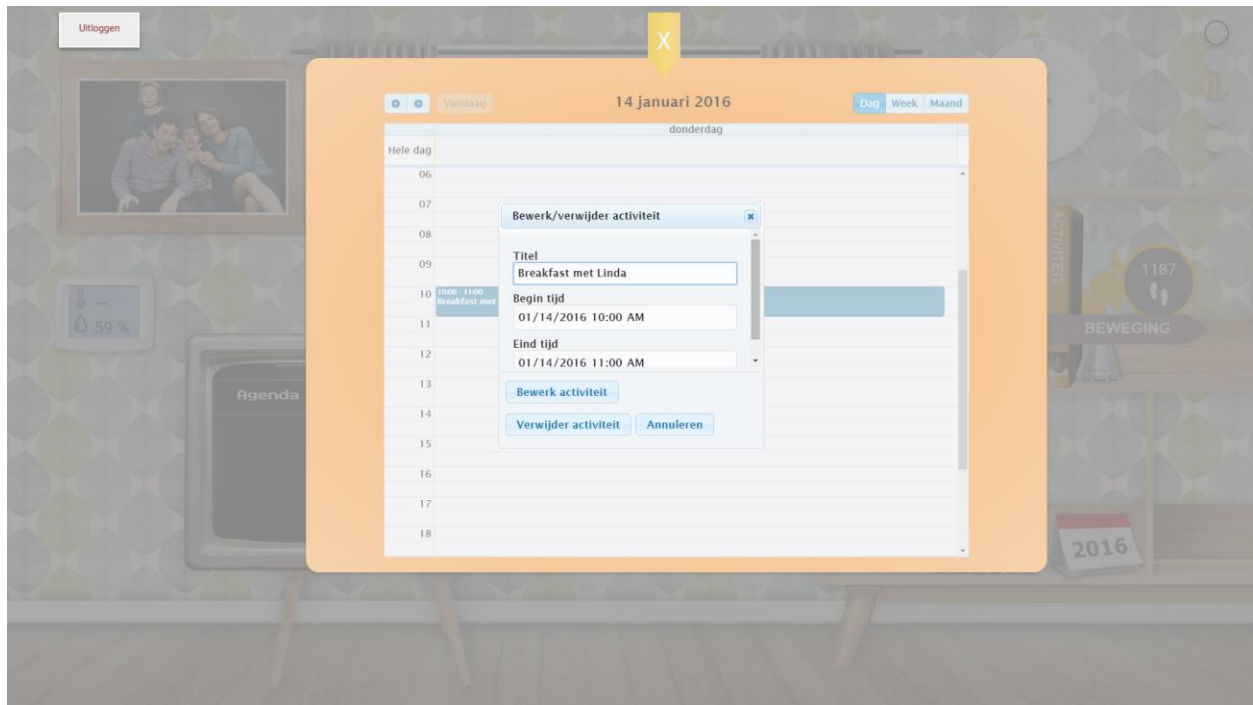
Deleting an existing appointment

To delete an existing appointment, touch the appointment from your agenda list. The appointment editing window will show up. Touch the Delete event button to delete the appointment from your calendar.

The Exercise application

This application will help you keep fit by showing you training video and afternoon to follow along. Based on the video ratings evil recommends the best suited exercises for your goals.

Launching the application

Since this application targets videos, eWALL shows a button on the side of the TV with the label gymnastics. To launch the application just tap on the label, or on the corresponding black button from the right hand side TV frame.

Starting your video training

Once you launch the video trainer application, the video will be displayed bigger covering the most part of the screen. You can notice on the top of the video frame the closing button.

The first thing you should notice on TV screen is instruction page. eWALL wants to understand how you use this application, therefore it will ask you to make sure you wear your activity sensor. For executing these exercises you may need supporting equipment such as chairs or even access to a table. Make sure you have these equipment within reach before you touch the Start button.

When you are ready press the start button. The video trainer will show you the first warm up exercise.

The warm up

Is very important to warm up before doing any kind of exercise activity. I understand your needs and recommend warm up exercises best suited for your body. Between the warm up exercises there is a very short five seconds break, in order for you not to lose you muscle tonus. In the picture below you see your instructor showing you the first warm up exercise. Please follow along.

You can easily control the video. on the right hand side of the TV screen you'll find buttons for
- Quit: touching this button and the exercise routine
- Pause: Touching this button will pause the video playout
- Play: Touching this button will resume the video play out
- A colored volume slider: Make your instructor speak as loud as you want by sliding the white dot up or down. Up means louder sounds; down means softer sounds.

The core exercises

The core exercises aim to tonify your body. Do not perform the core exercises before warming up. Please perform each exercise as instructed in the video.

Every core exercise has a different resting period. During the resting time you will be asked to rate the video according to how much you liked it and how difficult was it to perform.
 Rating is easy. For example if you'd like to rate a video with four stars, touch fourth star, counting from left to right. You will notice all the stars before it, will be colored in gold. This means you like the video with 4 out of 5 stars.

 In a similar way you can rate the difficulty of a video. For example if the video had medium difficulty, touch the third stone button, from left to right. All buttons before it will turn purple. This means, for you, this video is 3 out of 5 stone difficult.

Rating is very important for eWALL. In order to give you better recommendations for next time you use this application, eWALL needs to understand how you perform the training. Please rate every car video as instructed by this application.

The cooling down

When performing sports or for any kind of physical activity cooling down is very important. Similar to warming up, cooling down helps you adapt your body to resting.

Not performing cooling down or warm up exercises will result in occasional muscle pains and physical discomfort.

You was not be asked to rate the cooling down exercises. Every cooling down exercise has a rest period of 5 seconds.

The Domotics application

You can keep track of the temperature, humidity and light intensity inside your home. Measurements are shown from every room equipped with sensors.

Launching the application

Touch the thermostat widget from the eWALL living room.

Getting the current status of the house environment

When you open the application you will see the current status of your home environment measurements. As the picture below shows, you can see the temperature humidity and illuminance in your kitchen, living room, bedroom, bathroom.
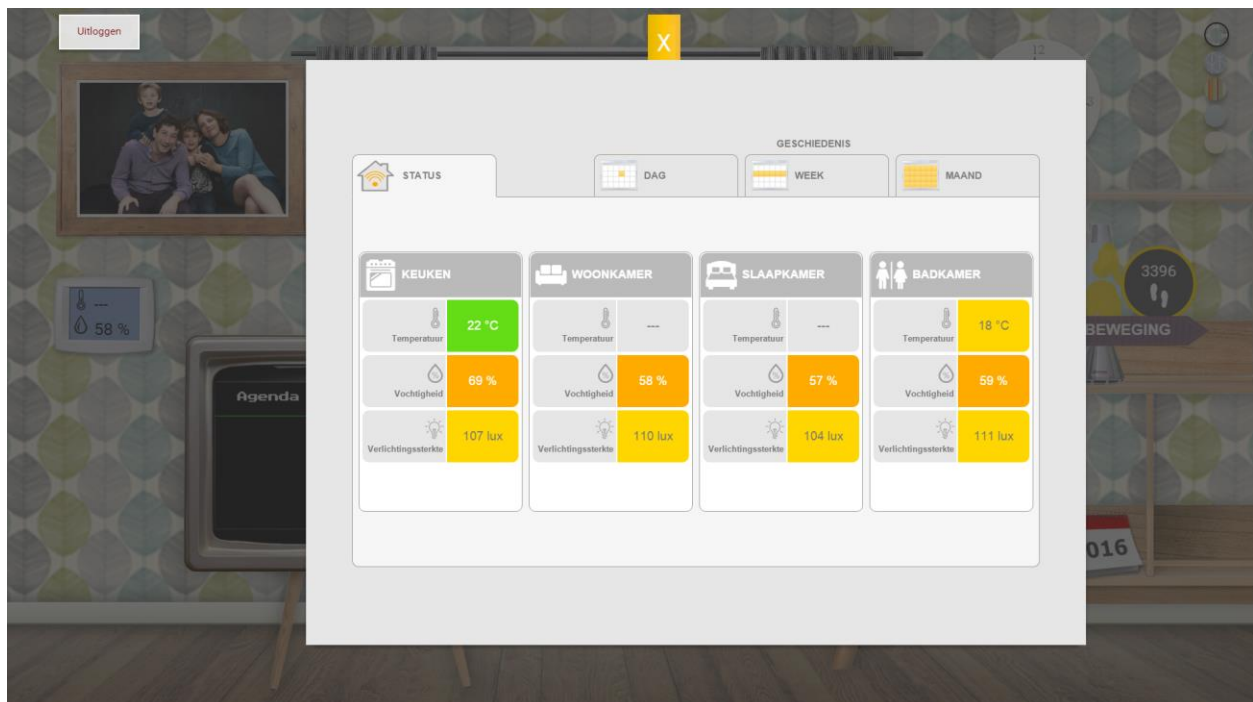
Getting a daily overview of the house environment measurements

On the top of the application touch the DAY button. This will show you an overview of the measurements taken today, every hour. As you see in the picture below, there may be missing measurements. This means the sensors could not take a measurement during that time slot. if you noticed many missing measurements please contact your local eWALL support.

On the bottom of the screen you will see buttons with labels: kitchen, living room, bedroom ,bathroom. Touch them to see the daily overview of environment measurement in your chosen room.
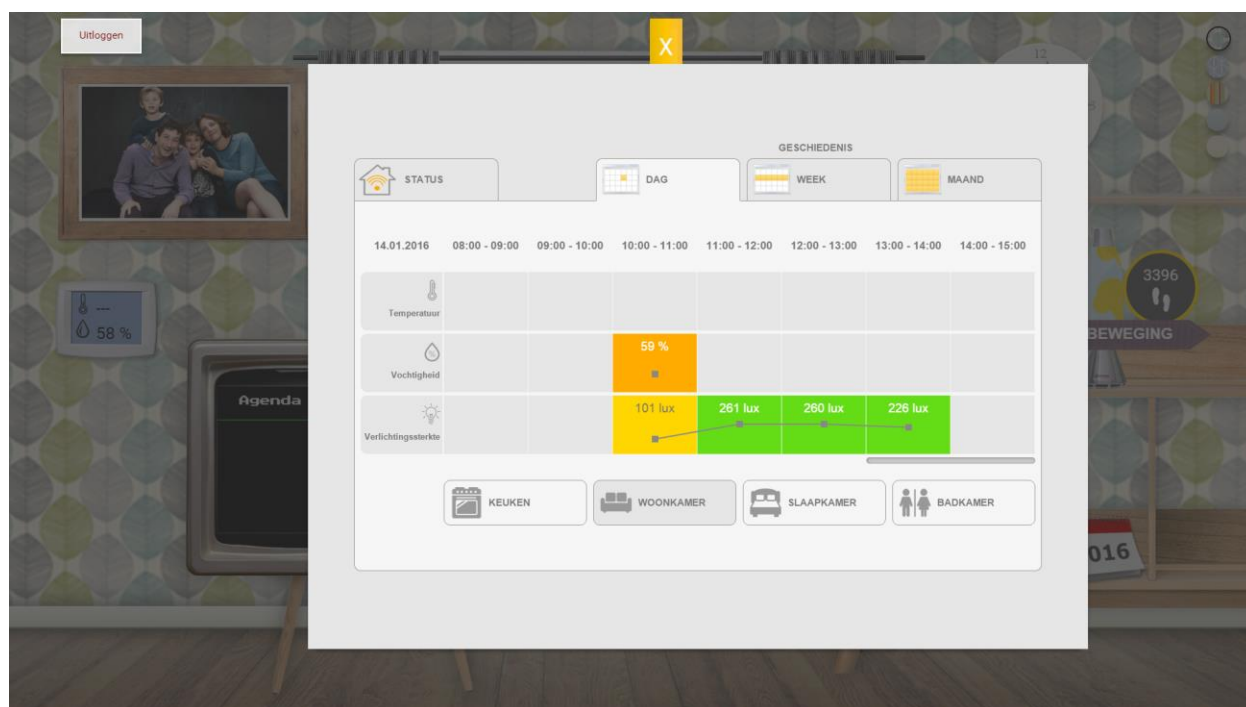

Getting a weekly overview

To get the weekly overview of your home's environment measurements, tap on the WEEK button from the top part of the application. You will see a table containing an average measurement for every day of the week. Touching the bottom buttons, you can switch between the kitchen come on the living room, the bedroom and the bathroom.
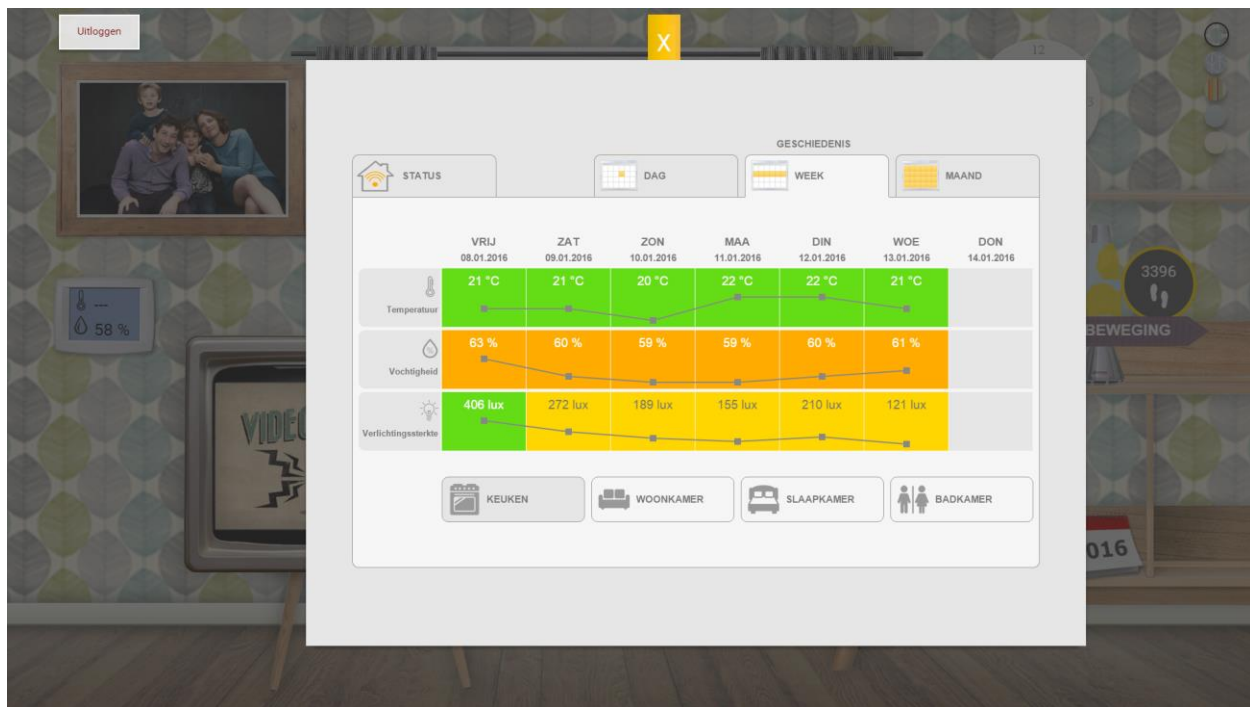
Getting a monthly overview

To get the monthly overview of your home's environment measurements, tap on the MONTH button from the top part of the application. You will see a table containing an average measurement for every day of the month. Touching the bottom buttons, you can switch between the kitchen come on the living room, the bedroom and the bathroom.

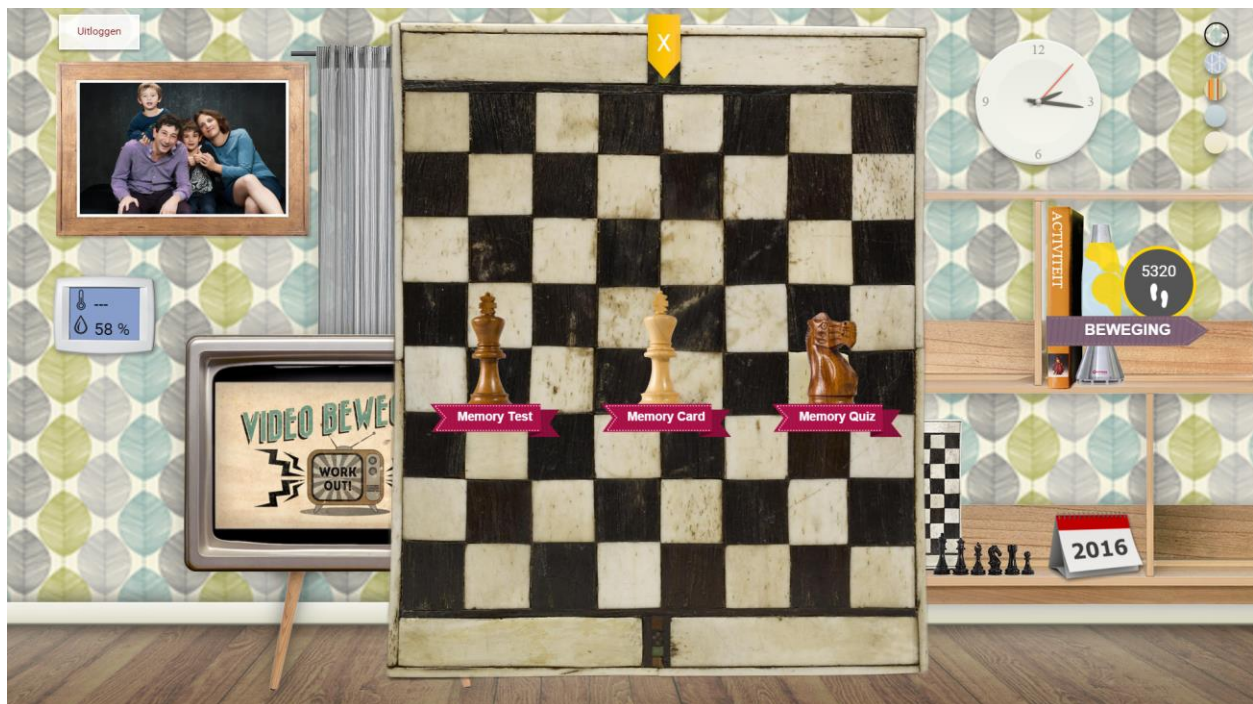To see more days then shown on screen, swipe your finger across the table towards left, or right.
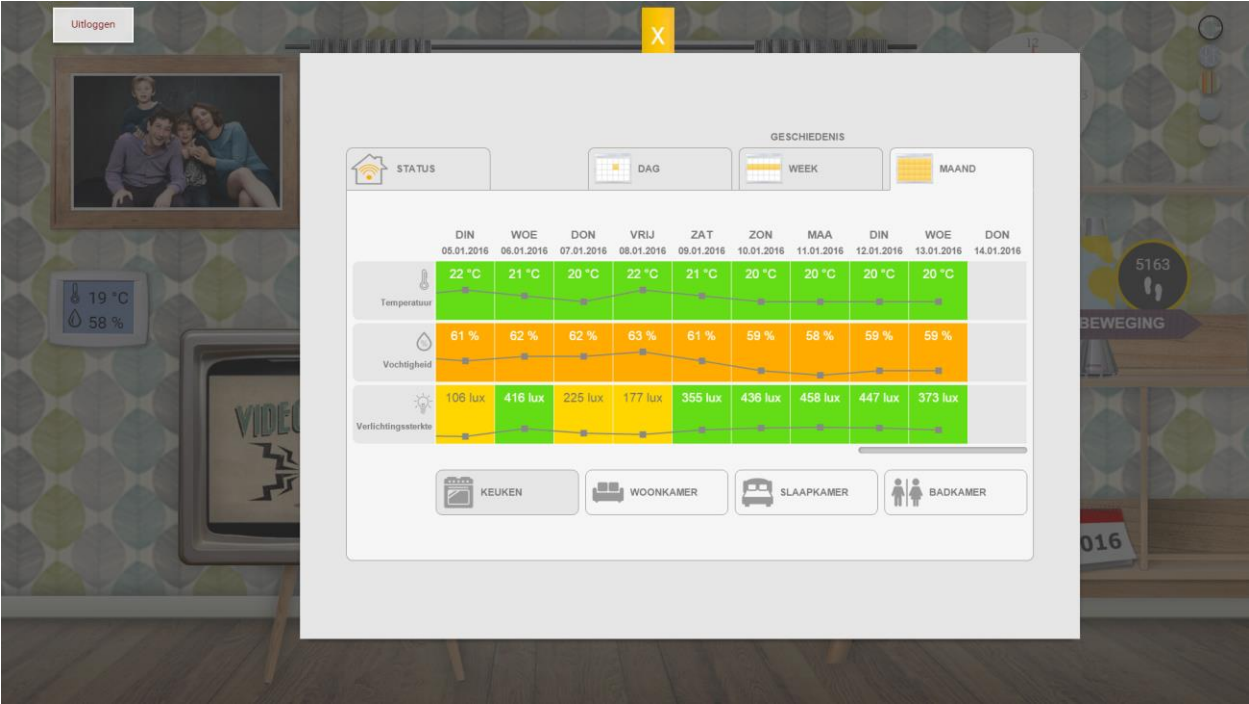
The Games

You can play cognitive games which stimulate your brain. To access the games, touch the chess board from the bottom of the bookshelf.

You will see the chessboard closer and bigger. On the chessboard You'll find icons corresponding two different games.

Memory Test
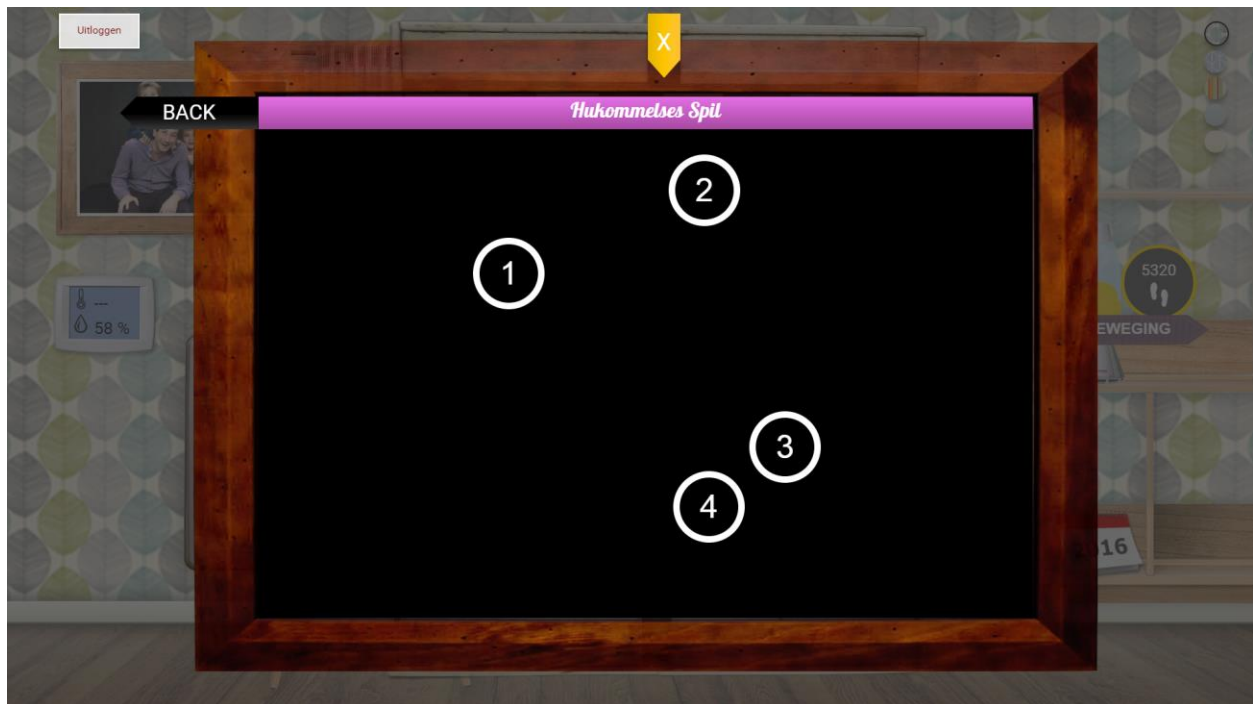
This is a fun game to test your short term memory.

Launching the game

Touch the dark bishop icon with the label memory test.

Playing the game

First step is to select a difficulty level. You can choose between easy, medium and hard.

After you the difficulty level, the game will display circled numbers scattered across the game board, as shown in a picture bellow.

Try to remember the position of each number. After you are ready, touch anywhere on the game board. The numbers will disappear and only the circles will be visible. Touch the circles in the increasing order of numbers.

To win the game. All circles in the right order.

Memory Card

This is a fun game which tests are associative memory. On each card there is a flag. Flip the cards and find the pairs.

Launching the game

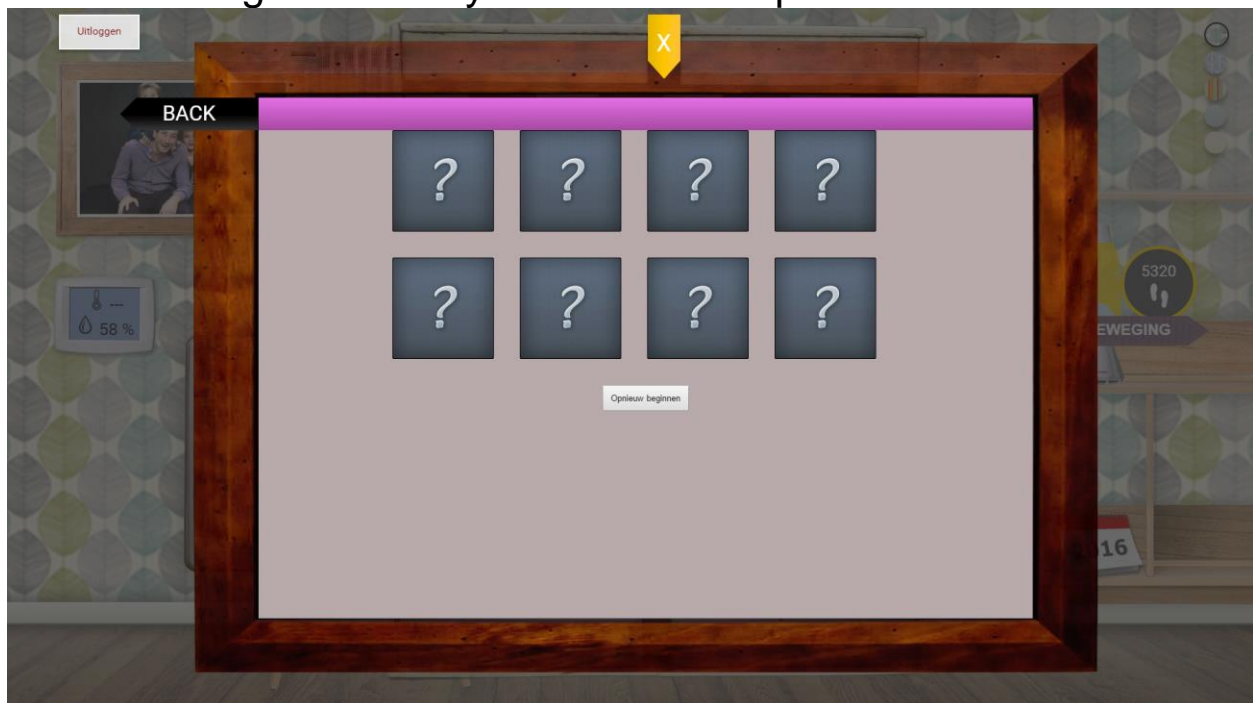Touch the white bishop icon with the label memory card.

Playing the game

First select a game difficulty level. You can choose between easy, medium and hard.
After you've selected your preferred difficulty level, you will see on the game board a number of cards turned down.

You can flip a card by touching it.
Flip the cards and find all pairs.

You win the game once you find all card pairs.
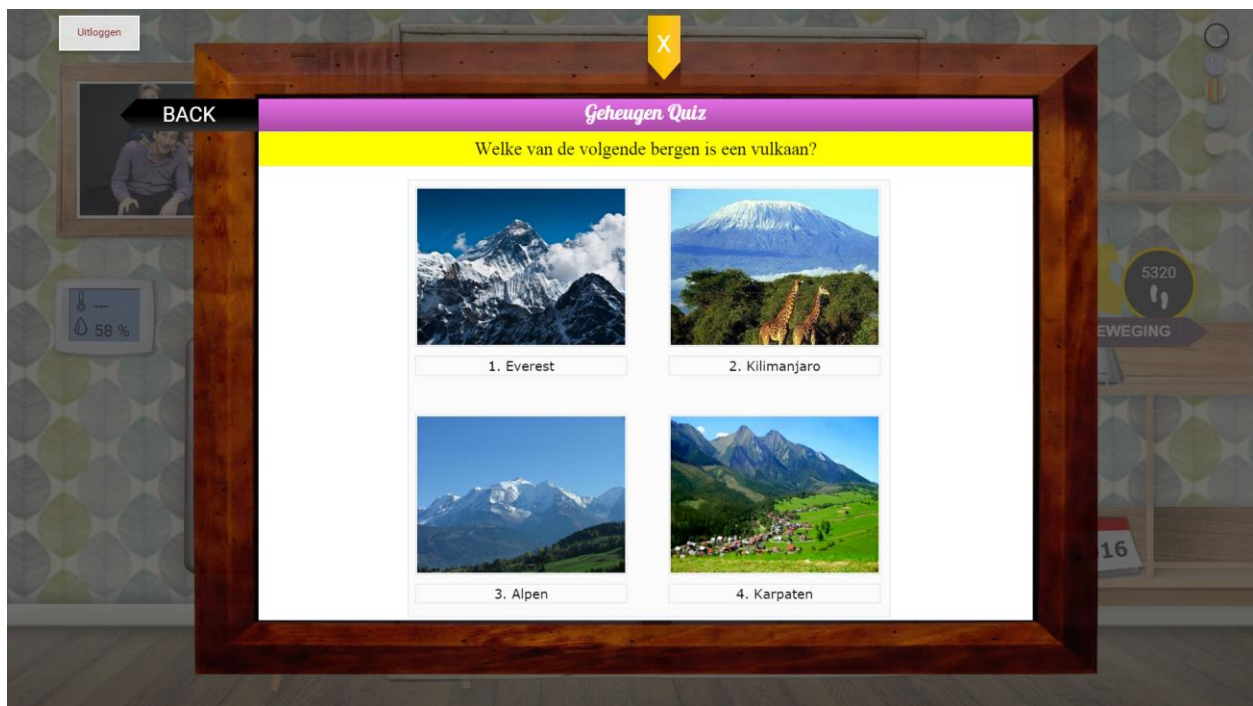
Memory Quiz

This is a fun game which will test your long-term memory. To win the games you must answer all questions correctly.

Launching the game

Touch the dark horse icon with the label memory quiz.

Playing the game

First select a quiz category by touching on it. Once you select a category the game will start.


 You will see the game board displaying the first question. Touch the image of which you think contains the correct answer. You'll see the next questions. Continue answering them.
At the end of the game you'll see an overview of how many questions you've got the right and how many you got wrong.
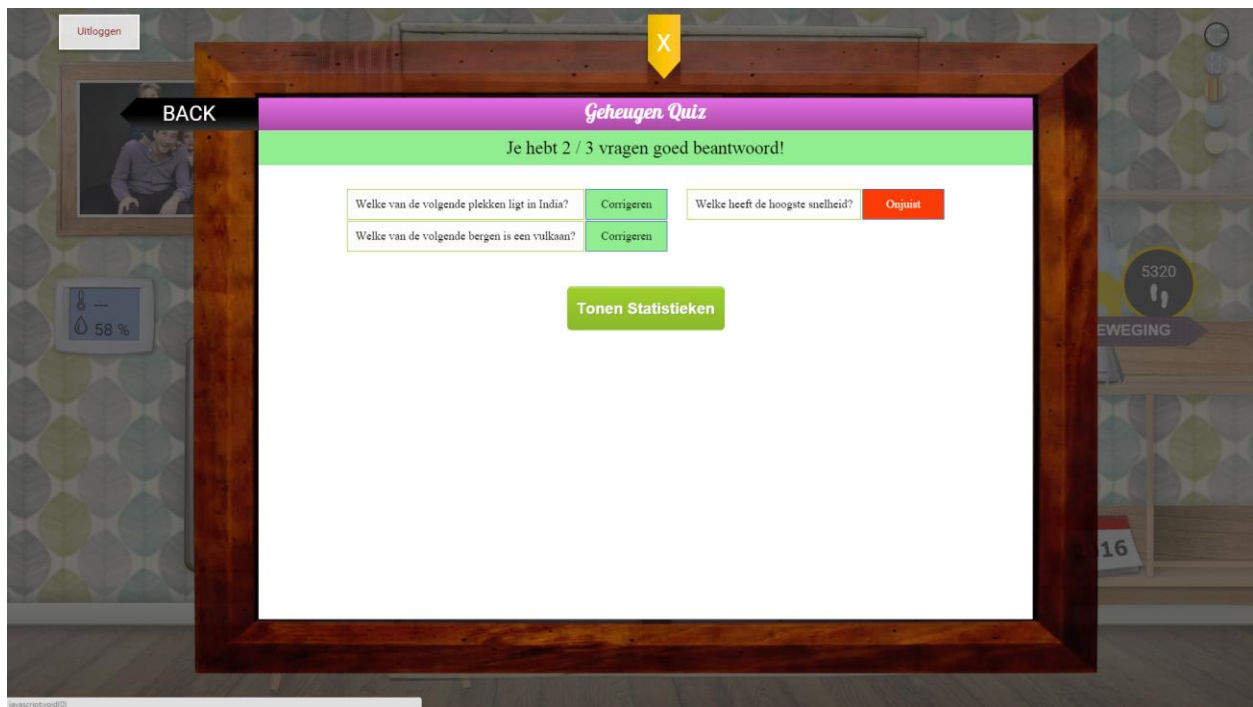
Notifications

eWALL tries to keep you on the right track. Every now and then a friendly robot will show up congratulate you for your progress ,or give you an advice or an information which will be useful r you at that moment in time.
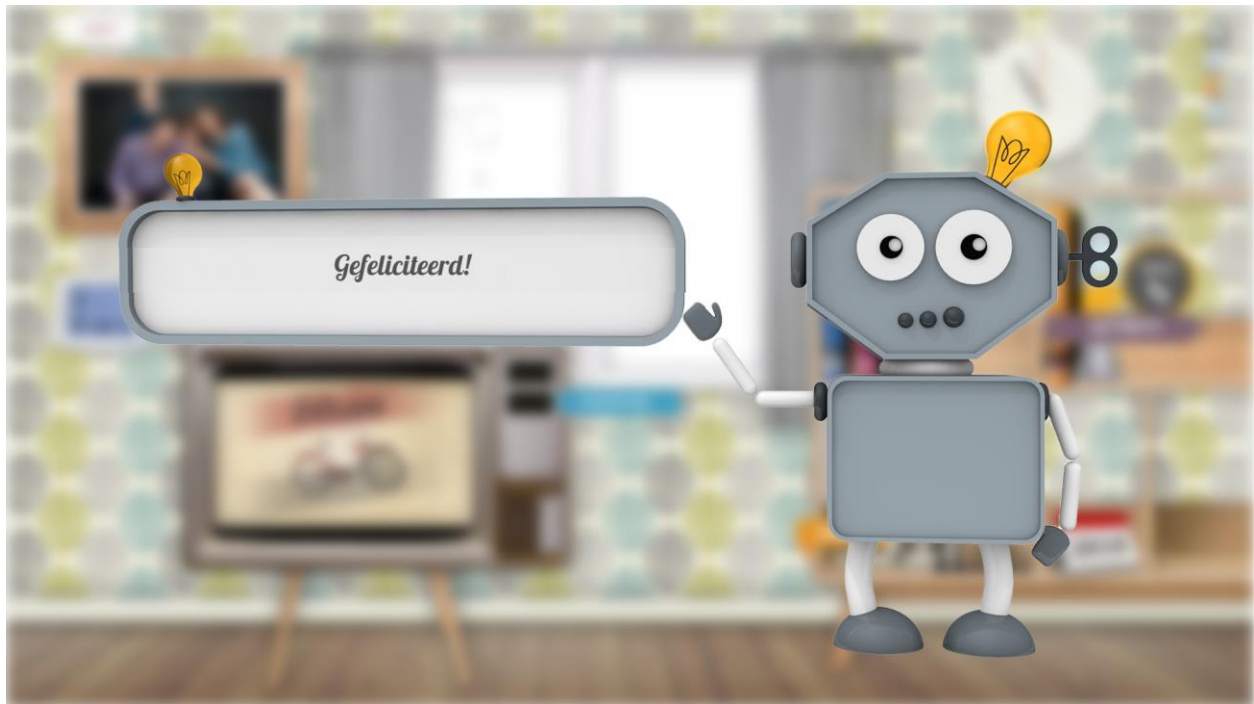
To answer to the notification, simply touch anywhere on screen. eWALL will understand you have read the notification.

Some of the vacations may contain buttons. Usually they appear when eWALL asks you questions. There is no right or wrong answer just answer what you feel like is suitable for you.