BalanceBit Software

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Summary

This is a Software Requirements Document, a proposal to the marketing department of NewIdeas, by Sameer Ali, from the development team.

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Distribution

The marketing department and the development team of NewIdeas.

Contents

Preface

Purpose and scope of the document (what it is and what is NOT)

This is a software requirements document for the BalanceBit Software and covers the functional and non-functional requirements with the various implementation constraints defined in the initial statement of requirements by NewIdeas, the client.
The document explains what the system shall do but not how the functionality can be implemented. Various models are used to convey in more detail to system developers the expected behaviour of the system.

Intended audience and Reading Suggestions

The development team and marketing department.

History of the document

This is a new document, v. 1.0.

Introduction

This BalanceBit Software will allow NewIdeas to effectively support their core business by meeting their customer's needs. The system will allow customers to keep track of their health and fitness, as well as allowing parents to monitor how technology is affecting their children's lives.

The system will also allow the company to maintain information on the changes that are happening in people's daily lives and understand how they balance work/life.

Glossary

Actor - A human or an external system interacting with BalanceBit, e.g. WristDeviceUser and DesktopUser.

UML - Unified Modeling Language

Use Case - A basic interaction of a system with an actor.

User Requirements

System architecture - subsystems and their interfaces

There will be a subsystem for users to use, being the desktop app which interacts with the wrist device through the data stored on the cloud servers. It is required to be used in order for the user to create an account that will be associated with their wrist device, containing a sign up/login interface that requires an email address and password as well as a wrist device. Users can also log in and out of accounts.

Another subsystem for the software, which is mentioned above would be the cloud server as it is integrated into use by storing data from the wrist device through the desktop app. This will allow reports to be produced from the data collected as well as allow it to remain in use as the data on the wrist device is overwritten every week whereas this doesn't happen on the desktop app.

User requirements using Volere templates

Requirement ID: 2	Requirement Type: FR	Event/Use Case #2
Description: The wrist device will be associated with a single BalanceBit account.		
Rationale: By limiting each wrist device to a single account, they will be unique to each customer and prevent confusion when using the device due to the interface being easier and simple to use.		
Source: Interview with the marketing team.		
Fit Criteria: There should not be any option to create accounts on the wrist device.		
Customer Satisfaction: 5	**Customer Dissatisfaction: 5**	
Priority: Essential	**Conflicts: Customers may feel restricted**	
Supporting Material: None	Volere Source: Atlantic Systems Guild	
History: New requirement		

Requirement ID: 11	Requirement Type: NFR (performance)	Event/Use Case #NA
Description: The wrist device will hold data for up to a week, and before overwriting it will display a notice to the user as well as commencing the overwrite in the early morning (3AM).		
Rationale: This will prevent the device from running out of memory or reducing performance. It also allows the user to be aware of the data being overwritten as well as reduce any likelihood of the user being inconvenienced if the overwrite occurs whilst the wrist device is being used, due to the time of it occurring.		
Source: Interview with the marketing team.		
Fit Criteria: Test the wrist device by observing the data it contains and whether it is overwritten after seven days with new data as well as if the overwritten data is stored on the desktop app.		
Customer Satisfaction: 5	**Customer Dissatisfaction: 5**	
Priority: Essential	**Conflicts: Customers may want the wrist device to hold data permanently/longer time.**	
Supporting Material: None	Volere Source: Atlantic Systems Guild	
History: New requirement		

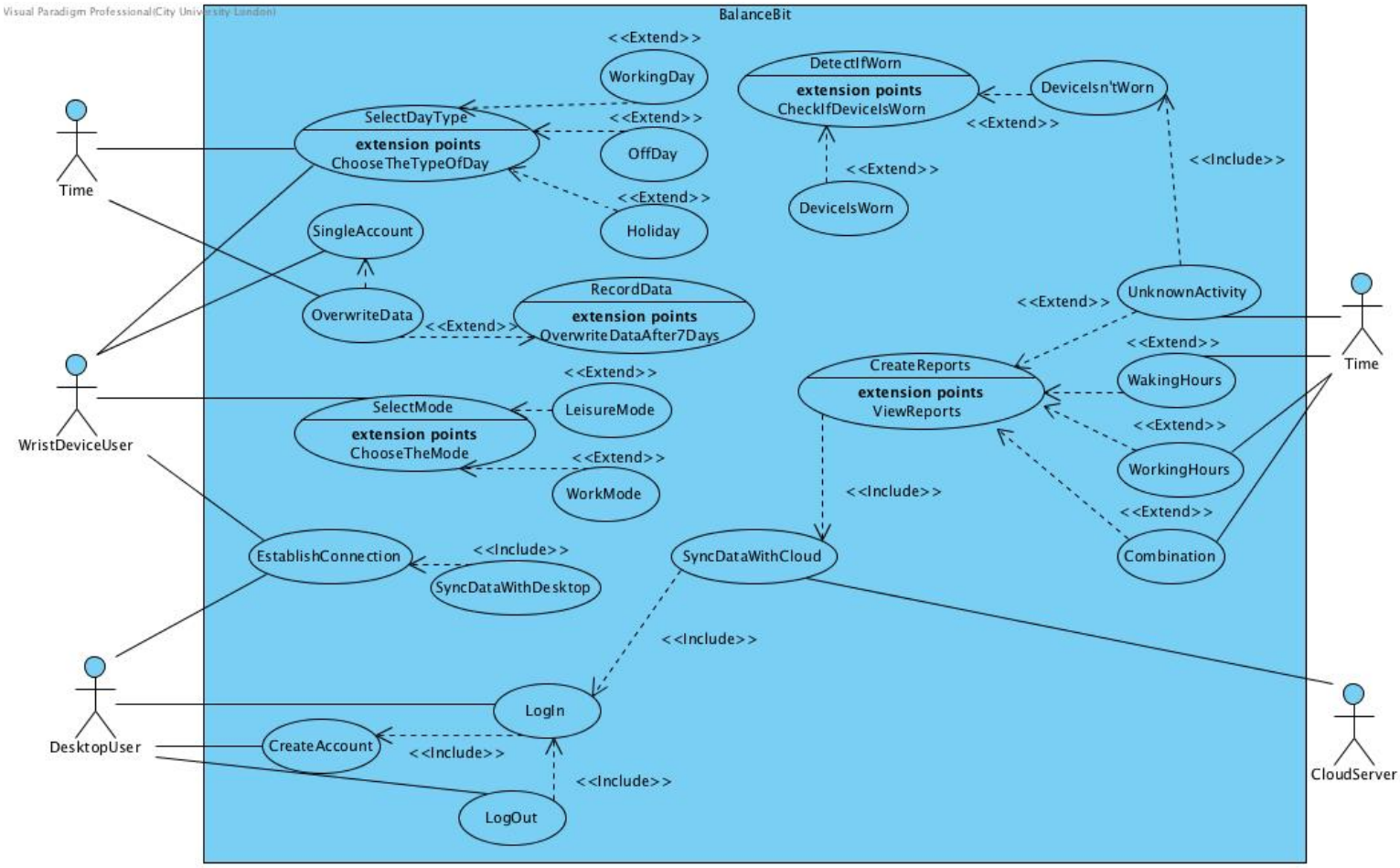
System Requirements

Purpose and scope of the system

This section provides more details on system's functionality than in the user requirements and the intended audience are the developers responsible for the implementation of BalanceBit. Since we use UML, which requires a degree of specific expert knowledge, we do not expect this section to be immediately useful to NewIdeas marketing department, but would like to urge them to evaluate and comment preferably.

System models

Use Case diagram



Mapping Use Case With ID

Use Case Name	Use Case ID	Specification Provided
SelectDayType	1	No
SingleAccount	2	No
OverwriteData	3	No
SelectMode	4	No
EstablishConnection	5	No
CreateAccount	6	No
WorkingDay	7	No
OffDay	8	No
Holiday	9	No
RecordData	10	No
LeisureMode	11	No
WorkMode	12	No
SyncDataWithDesktop	13	No
LogIn	14	No
LogOut	15	No
DetectIfWorn	16	No
DeviceIsWorn	17	No
DeviceIsn'tWorn	18	No
SyncDataWithCloud	19	No
CreateReports	20	No
UnknownActivity	21	No
WakingHours	22	No
WorkingHours	23	No
Combination	24	No

Use Case descriptions

This section provides a description of what each use case represents. This will be stored until the use case specifications are given.

1- SelectDayType: The wrist device user can select the type of day that will be recorded by the device.
2- SingleAccount: The wrist device user is only able to use a single account.
3- OverwriteData: The data on the wrist device is overwritten.
4- SelectMode: The wrist device user can select what mode they want the device to be.
5- EstablishConnection: Allows the wrist device to connect to the desktop app.
6- CreateAccount: Allows the desktop user to create an account.

7- WorkingDay: The wrist device will record the day as a working day.
8- OffDay: The wrist device will record the day as an off day.
9- Holiday: The wrist device will record the day as a holiday.
10- RecordData: The wrist device will record data.
11- LeisureMode: The wrist device provides a mode for leisure.
12- WorkMode: The wrist device provides a mode for work.
13- SyncDataWithDesktop: Allows the data on the wrist device to be synced with the desktop app.
14- LogIn: Allows the desktop app user to log in.
15- LogOut: Allows the desktop app user to log out.
16- DetectIfWorn: The wrist device will detect if it is being worn.
17-DeviceIsWorn: The wrist device is being worn
18- DeviceIsn'tWorn: The wrist device is not being worn.
19-SyncDataWithCloud: Allows the data on the desktop app to be synced with the cloud server.
20- CreateReports: The cloud server will create reports through the data gathered from syncing with the desktop app.
21- UnknownActivity: Activity which the wrist device is unaware of will be recorded (when the device isn't being worn).
22- WakingHours: The time recorded when the wrist device user is waking from sleep.
23- WorkingHours: The time recorded when the wrist device user is working.
24- Combination: The time recorded when the wrist device user is doing a combination of activities.

Use Case specifications

Will be provided in future.

System Evolution

We expect BalanceBit to be developed and deployed by the time the wrist device hardware is ready for use. The experience and feedback we receive from users will provide us with information of any required changes to be made. However, it is planned that changes will need to be made in future in order to accommodate for further requirements stated below.

Data Synchronization

At the moment BalanceBit software will only be accessible on the wrist device and the desktop app. Thus the data on the wrist device can only be synchronized with the cloud server through the desktop app. In order to provide the user with easier access to do this, we intend to provide a mobile application that will be developed to incorporate and be apart of the system.

Fitness Tracking Systems

The largest change that we plan to implement in future is to allow the BalanceBit software to be another use for existing fitness tracking systems as the intention of the software distribution is to be sold to companies that already provide these systems, attaching it to their pre-existing packages.

Appendices

Initial Statement Of Requirements By The Client

BalanceBit Software

- BalanceBit will have some minimal functionality deployed on the wrist device and some functionality hosted on apps running on desktop devices[1]. Whereas data will be stored on the wrist devices, desktop devices and on NewIdeas' cloud servers.

- Each wrist device is associated with a single BalanceBit account.

- A person wearing the wrist device will be able to select the type of day it is: working, off, or holidays. This only needs to be done once a day. The default value will always be the setting from the previous day. This value can be changed at any time of the day. For reporting purposes, the final type stored for the day is the one that will be used for that day's data.

- On waking up the wrist device will always go into leisure mode. This will only be changed by the wearer of the wrist device explicitly changing that on the device.

- As the day goes by, a person wearing the wrist device can switch between work and leisure.

- The wrist device will also store information on whether the person is awake or sleep. It shall be able to detect if it is being worn or not.

- When the wrist device is not being worn the type of activity will be recorded as unknown.

- The wrist device stores minute by minute data, depicting periods of device usage; within those periods of usage, the periods when the wearer is awake; and within those periods when they are awake, the periods dedicated to work.

- This data will be synced with the desktop devices. In this prototype this will be done by the wearer of the wrist device explicitly requesting it via the wrist device's user interface[2], while having an established connection with the desktop device.

- Similarly, the data from the desktop device will be synced with NewIdeas' cloud by explicit request from the user on the BalanceBit app interface[2].

- The wrist device can hold data up to seven days, before it starts to overwrite it. The desktop devices will never overwrite data[3].

- BalanceBit desktop app users can create new accounts (identified by an email address and having an associated password and wrist device), as well as log in and log out of accounts.

- The functionality provided by the desktop app also includes the syncing with the cloud and providing all sorts of reports. These include:

Depicting what kind of activity was undertaken when in a day (showing start/end times of waking hours, start/end times of working hours, start/end times of leisure hours and start/end times of unknown activities);

Summarizing:

-The percentage and the number of waking hours on a day/week/month (of working days) used on work, on leisure and unknown.

-The percentage and the number of waking hours on a day/week/month (of days of holidays) used on work, on leisure and unknown.

-The percentage and the number of waking hours on a day/week/month (of days off) used on work, on leisure and unknown.

-The percentage and the number of waking hours on a day/week/month (of any combination of type of days) used on work, on leisure and unknown.

Providing the same summaries as above, but with respect to the overall day, while depicting sleeping hours as a category of their own.

- In the future full versions of the system, users will be able to sync their wrist devices with more than one app installation, including mobile ones. Yet, the biggest change will be that of the BalanceBit being just another part of existing fitness tracking systems.

1 In the fully developed product there will also be apps for mobile devices.

2 In the future, syncing will be done according to the set up in which the hosting wrist device and its app have. Meaning that BalanceBit data will be synced the exact same way that the fitness data is.

3This is an assumption made for the prototype. Real products will handle releasing memory storage the same way they do with their corresponding fitness data.

Hardware (minimal and optimal configuration)

Minimal hardware configuration

The minimal hardware configuration, recommended for the BalanceBit software would be a desktop PC, 2GB of RAM and at least 50GB of disk space for storing the software and data provided.

Optimal hardware configuration

The optimal hardware configuration, recommended for the BalanceBit software would be a desktop PC, 4GB of RAM and about 500GB of disk space for storing the software and data provided as the desktop data is never overwritten.

Database model, e.g. ER

Not provided in this version of the document.

Index

Not provided in this version of the document.