User-centered responsive user interface for fostering stress awareness

Implementation & Evaluation of Stila web portal

Anna Hubert

Antrittsvortrag Bachelorarbeit

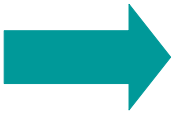
01.02.2018

Agenda

1. Motivation
2. Aufgaben
3. Zeitplan
4. Ausarbeitung
    - 4.1 User-centered Design
    - 4.2 Benchmarking
    - 4.3 Funktionalitäten
    - 4.4 Paper Prototype
    - 4.5 Implementierung

Motivation

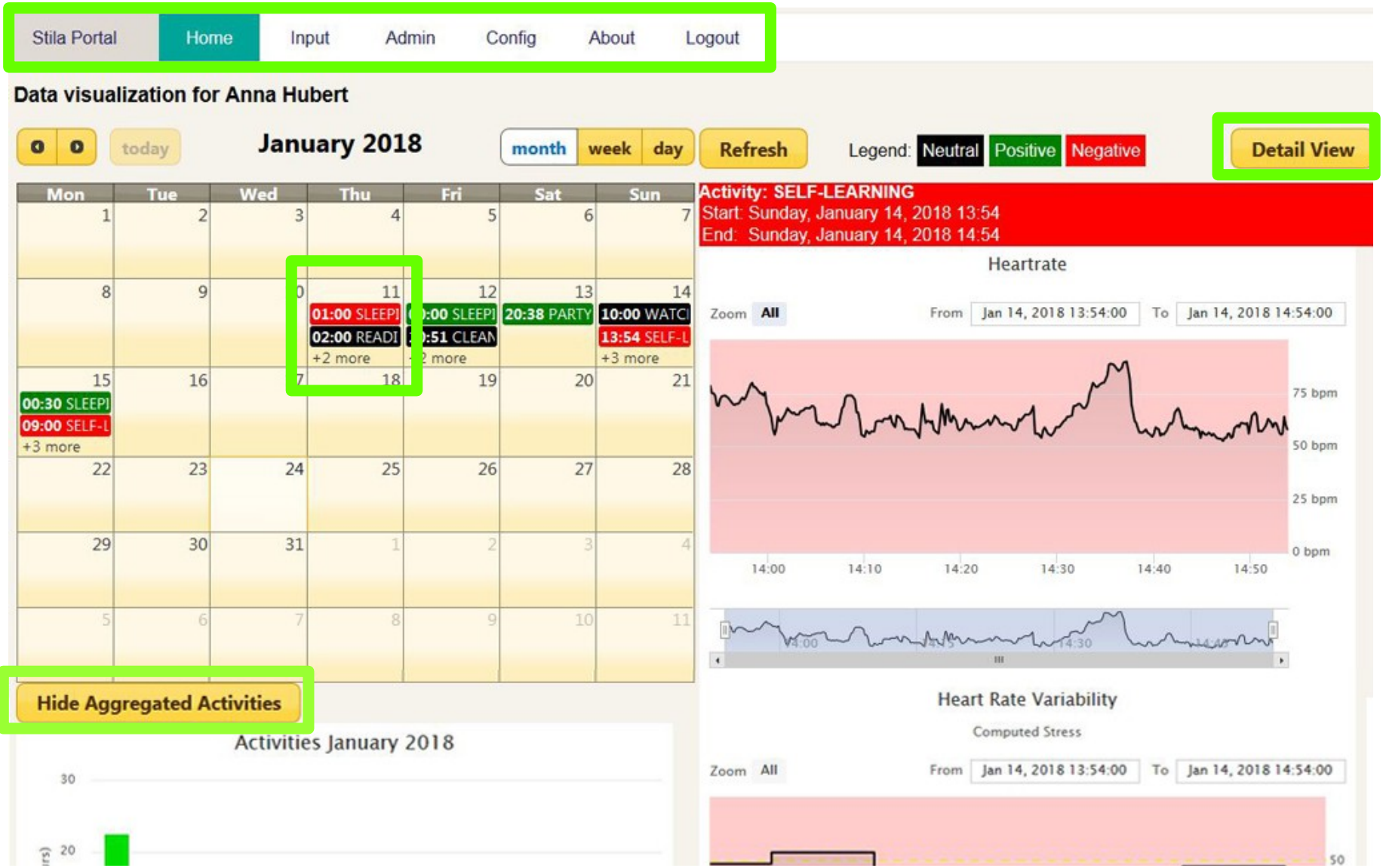
Projekt Stila: http://stila.pms.ifi.lmu.de/



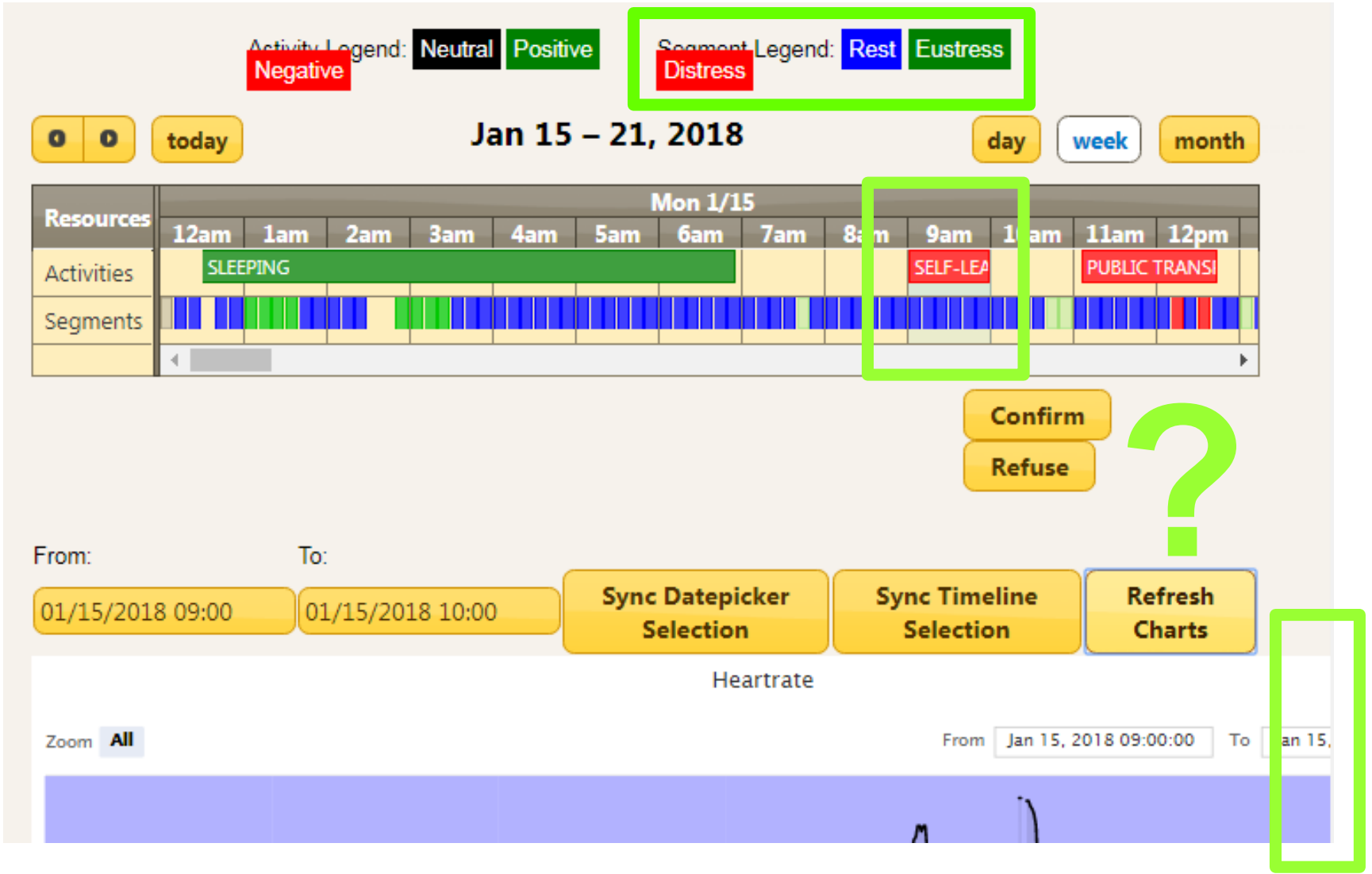
Hochschullehre verbessern

- Wahrnehmung von Stress
- Datendarstellung
- Feedback der Nutzer über gesammelte Daten

Motivation


Stila Portal
Home
Input
Admin
Config
About
Logout
Data visualization for Anna Hubert
today
January 2018
month
week
day
Refresh
Legend:
Neutral
Positive
Negative
Detail View
Mon
Tue
Wed
Thu
Fri
Sat
Sun
01:00 SLEEPI
02:00 READI
+2 more
20:38 PARTY
10:00 WATCI
13:54 SELF-L
+3 more
00:30 SLEEPI
09:00 SELF-L
+3 more
Activity: SELF-LEARNING
Start: Sunday, January 14, 2018 13:54
End: Sunday, January 14, 2018 14:54
Heartrate
Zoom
All
From
Jan 14, 2018 13:54:00
To
Jan 14, 2018 14:54:00
75 bpm
50 bpm
25 bpm
0 bpm
14:00
14:10
14:20
14:30
14:40
14:50
Hide Aggregated Activities
Activities January 2018
30
20
Heart Rate Variability
Computed Stress
Zoom
All
From
Jan 14, 2018 13:54:00
To
Jan 14, 2018 14:54:00
50

Motivation


Activity Legend: Neutral Positive Negative
Segment Legend: Rest Eustress Distress
today
Jan 15 – 21, 2018
day
week
month
Resources
Mon 1/15
12am 1am 2am 3am 4am 5am 6am 7am 9am 11am 12pm
Activities
SLEEPING
SELF-LEA
PUBLIC TRANSI
Segments
Confirm
Refuse
From:
To:
01/15/2018 09:00
01/15/2018 10:00
Sync Datepicker Selection
Sync Timeline Selection
Refresh Charts
Heartrate
Zoom All
From Jan 15, 2018 09:00:00
To

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Aufgaben

Verbesserung der Informationsdarstellung von Stressentwicklung

→ Umgestaltung des Webportals

- Psychologische Aspekte der (Stress-)Wahrnehmung
- Benchmarking
- Analyse der vorhandenen Funktionalitäten
- Entwurf + Implementierung von Struktur & Design
- User-centered Design (UCD)
- Evaluation

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Zeitlicher Ablauf

Benchmarking	Nov	
Literaturrecherche	Nov-Dez	
Erste Evaluation: Paper Prototype	Dez	
Implementierung	Jan-Feb	
Zweite Evaluation: Nutzerstudie	März	

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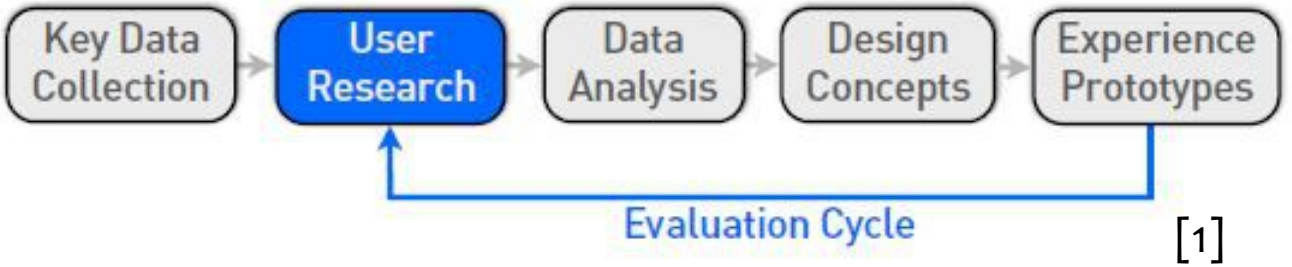
User-centered Design



[1]

- Iterativer Design-Prozess
- Fokus auf Bedürfnissen des Nutzers
- User experience (ISO 9241-210: 2010): "person's perception and responses resulting from the use and/or anticipated use of a product, system or service" [2]

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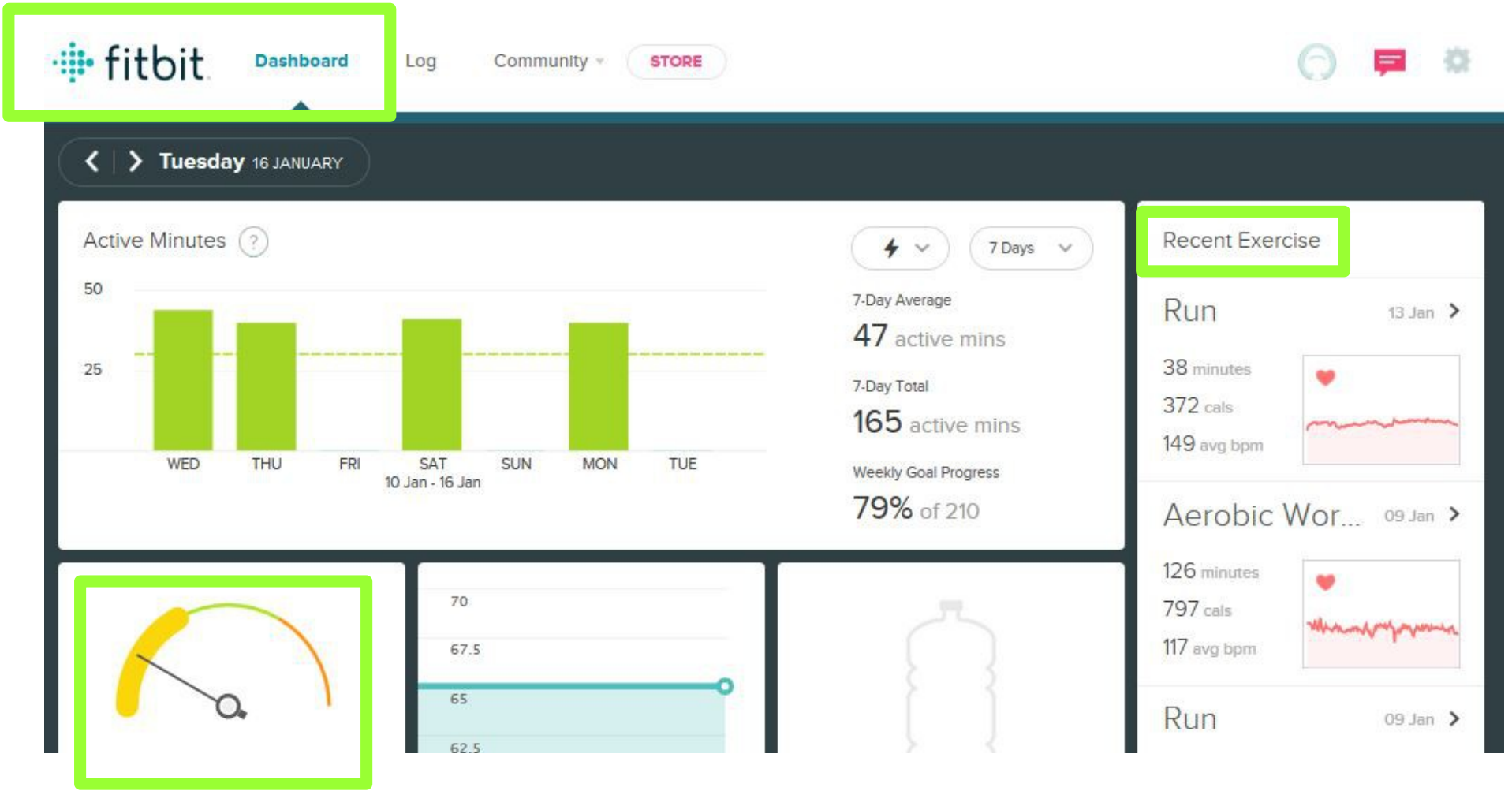
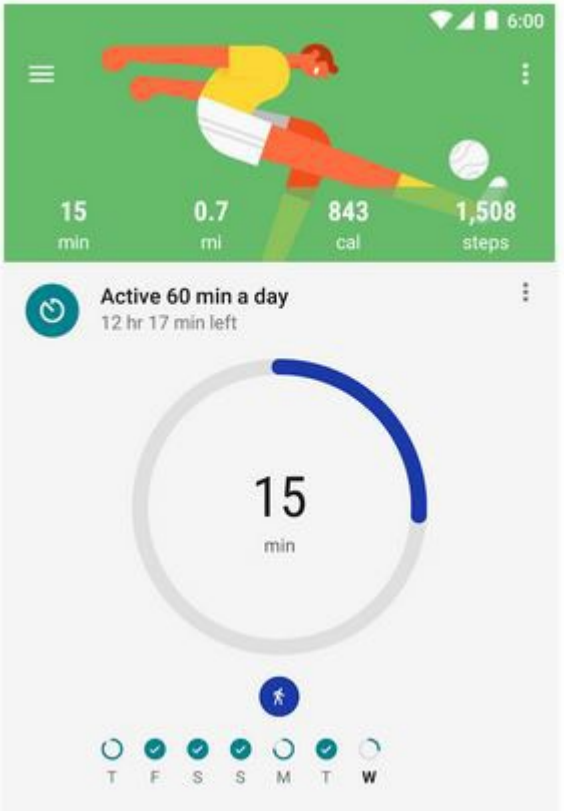
Benchmarking

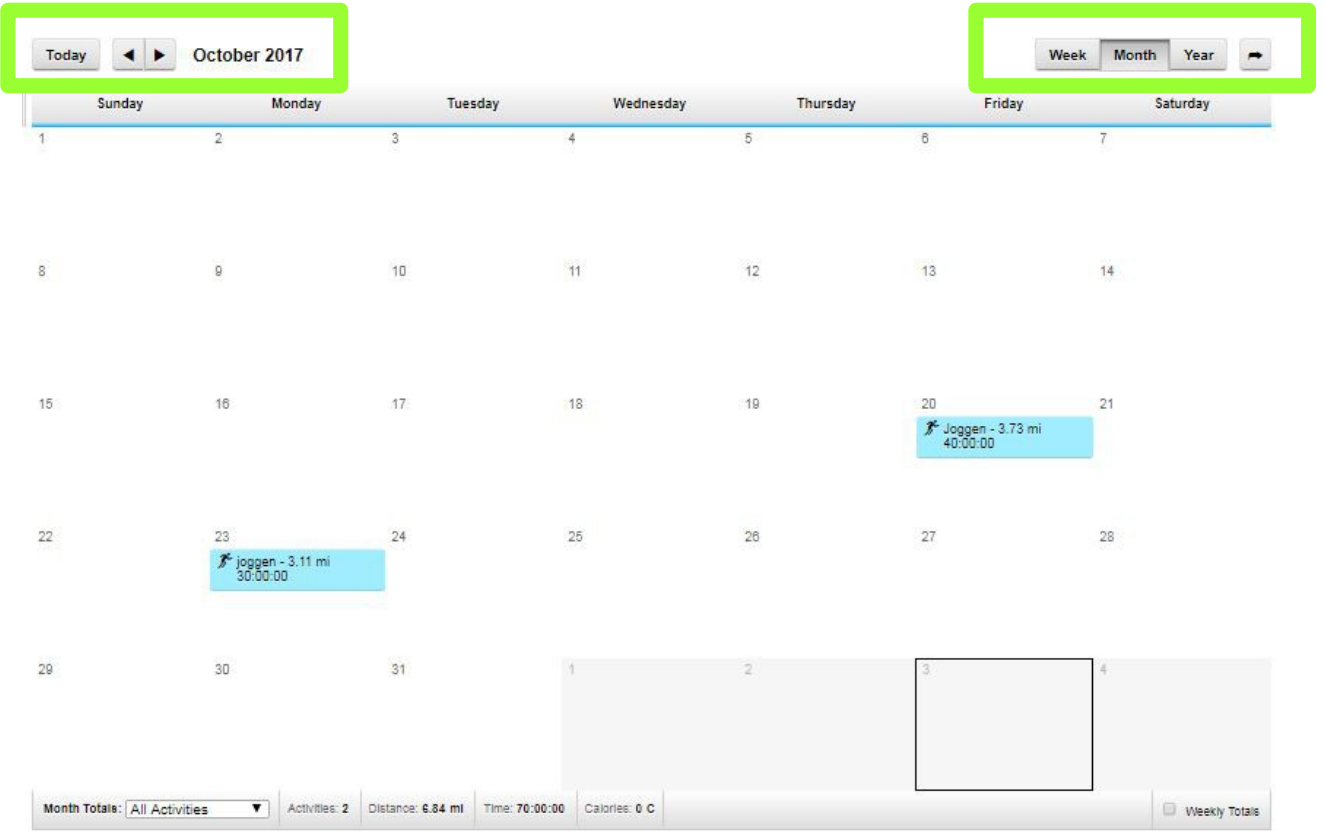


Benchmarking

Google Fit



Garmin Connect



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Funktionalitäten

- Datenvisualisierung:
  - Herzfrequenz
  - Herzfrequenzvariabilität / Computed Stress
  - aggregierte Daten
- Feedback der Nutzer zu Computed Stress
- Überblick über Nutzerdaten für Administratoren

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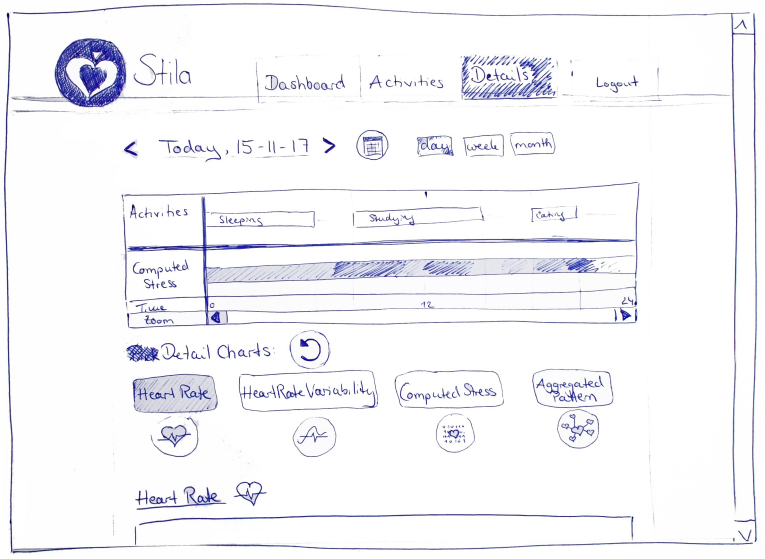
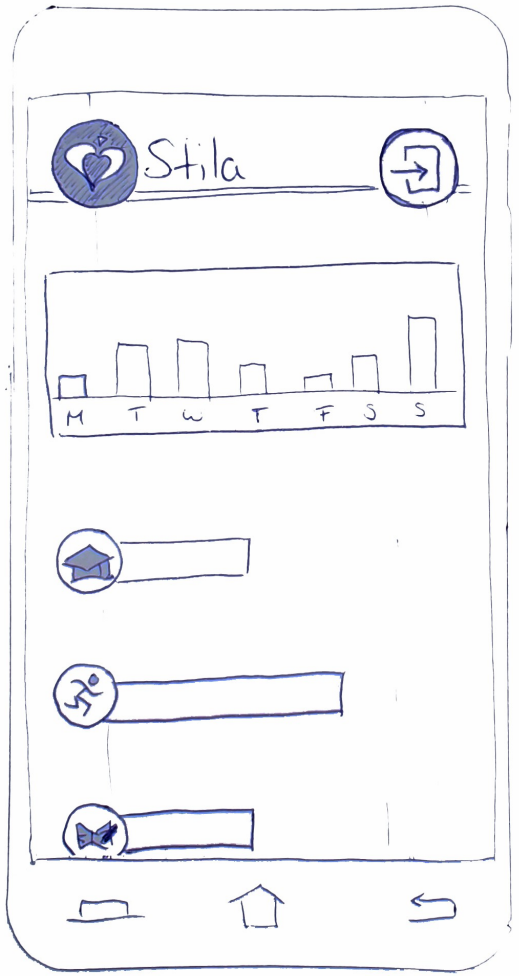
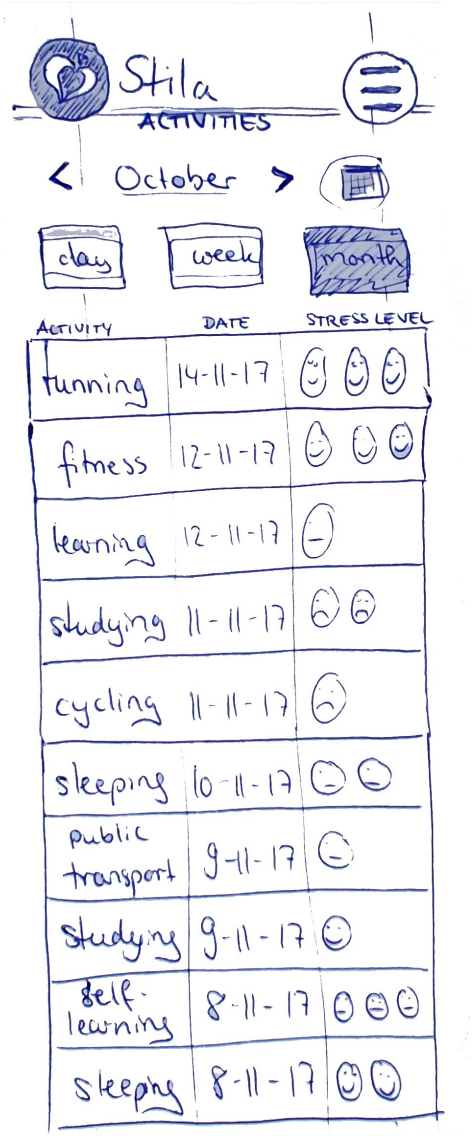
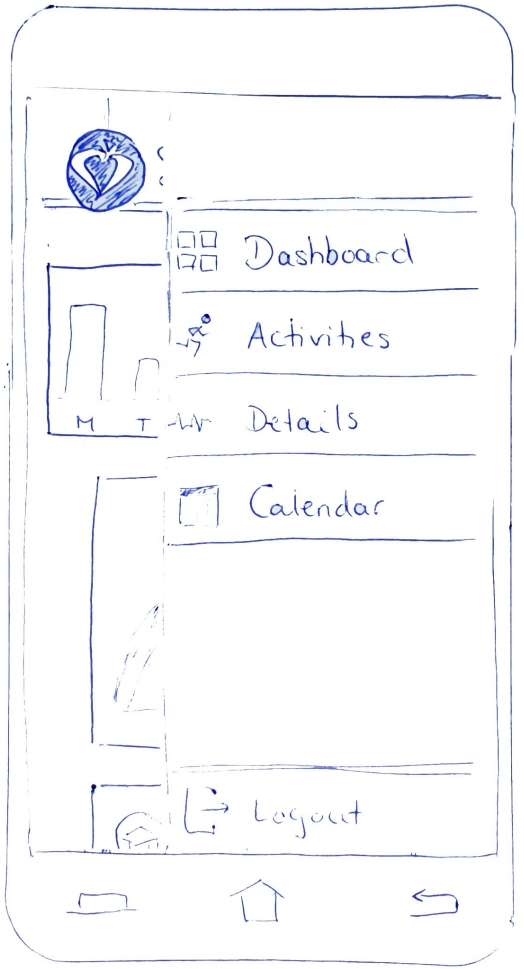
Paper Prototype (groß)



Paper Prototype (klein)







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Implementierung [3]

Angular 2

TypeScript

Webpack

HIGHCHARTS

highcharts.com

Sass

Node.js

node package manager

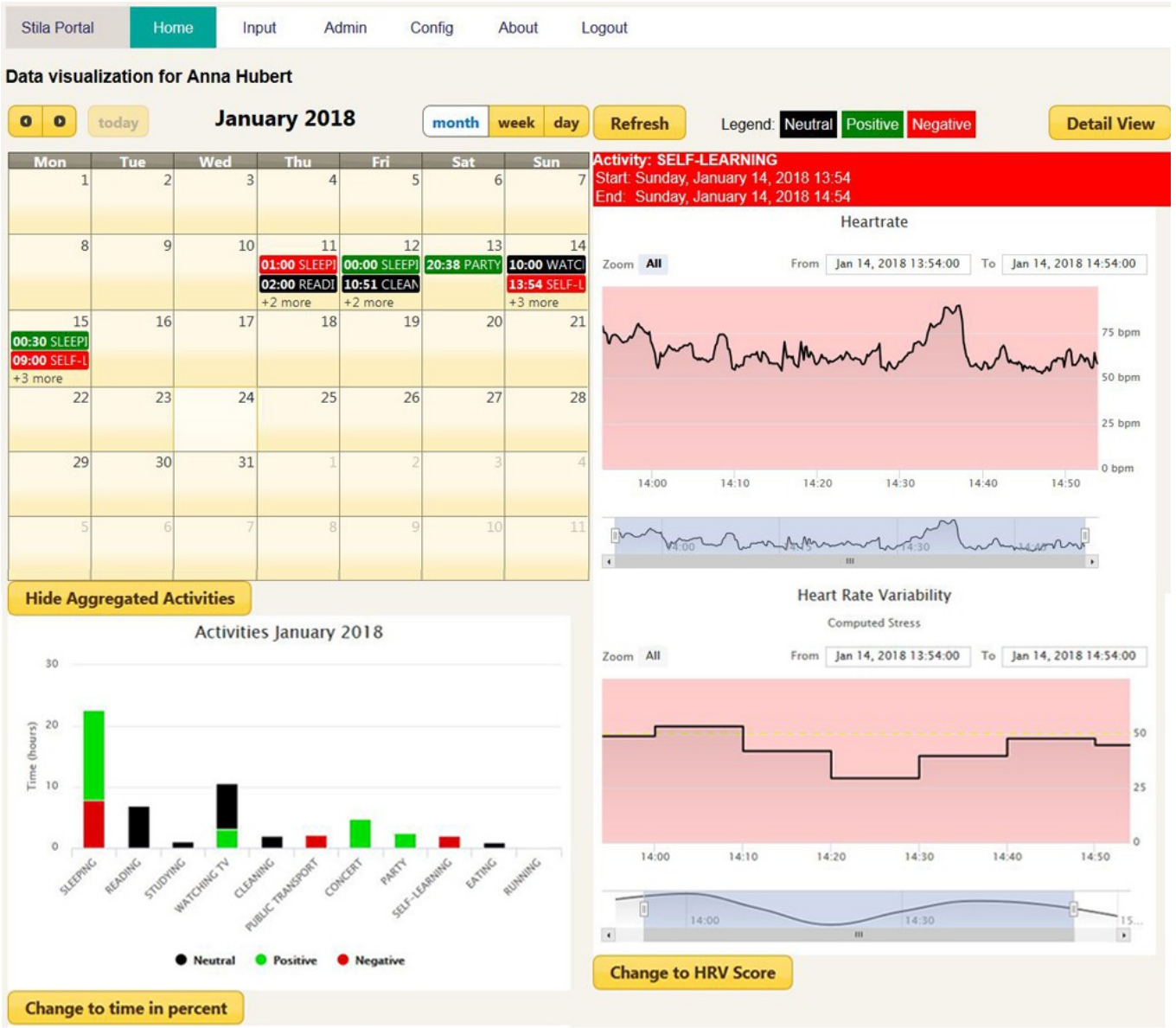
Schwierigkeiten

- großer Codeumfang
- lange Einarbeitungszeit
- Responsive Webdesign vs. Datenvisualisierung
- sehr umfangreiche Zielgruppe

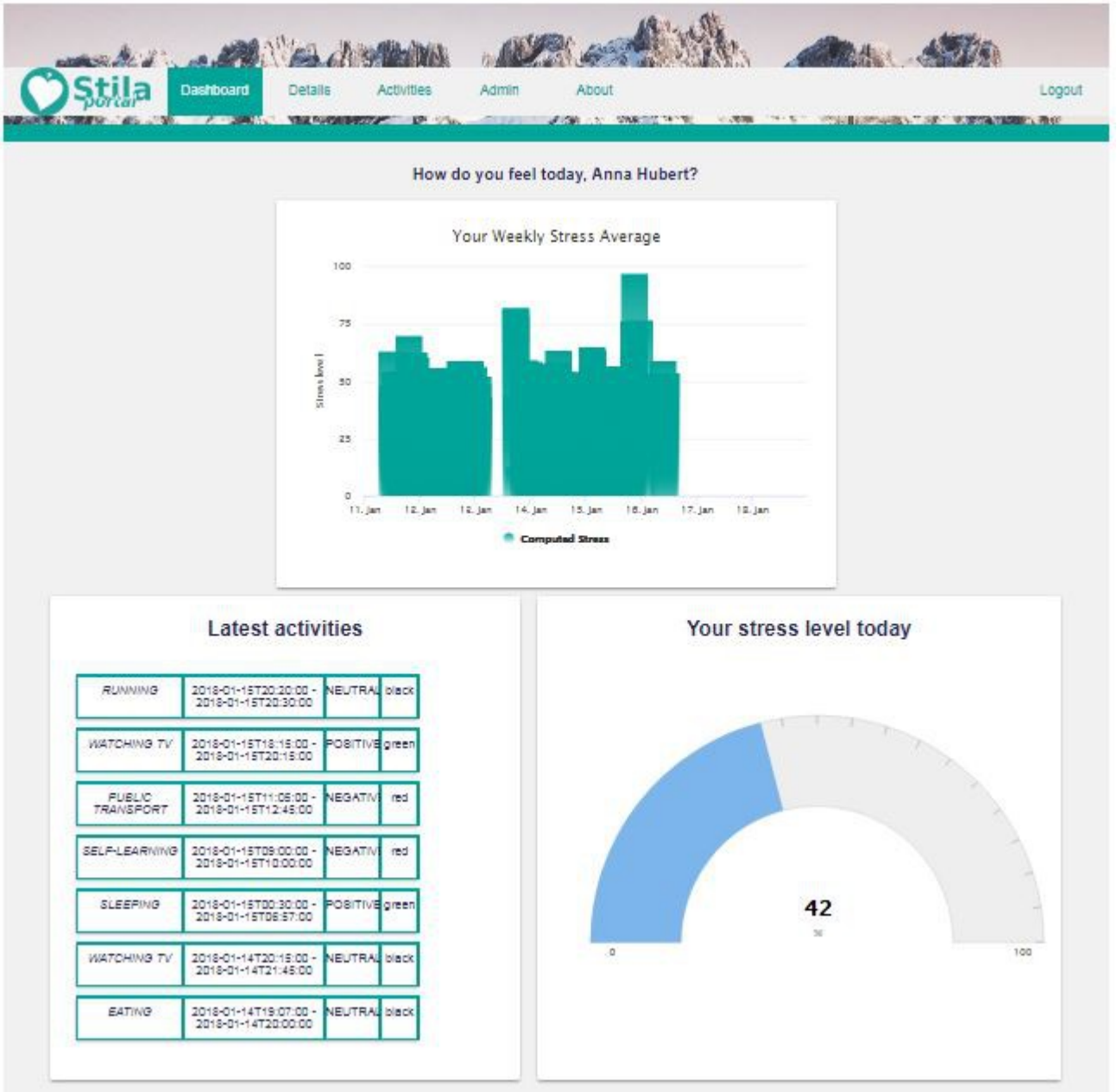
Anna Hubert

01.02.2018

Stila Webportal vor Redesign



Stila Webportal aktuell



Quellen

- [1] https://www.medien.ifi.lmu.de/lehre/ss17/id/Day%203%20Approaches%20to%20IxD%20.pdf
- [2] ISO 9241-210: 2010 : https://www.iso.org/standard/52075.html
- B. Moggridge, Designing interactions, MIT Press, 2007
- William R. Hendee and Peter Wells (eds.), The perception of visual information, Springer-Verlag New York, Inc., Secaucus, NJ, USA, 1993
- Hans Selye, Psychopathology of human adaptation, ch. Stress without Distress, pp. 137–146, Springer US, Boston, MA, 1976

[3] Bildquellen:

- https://www.intertech.com/Blog/top-10-angularjs-recommendations/
- https://www.highcharts.com
- http://www.typescriptlang.org/
- https://github.com/npm/logos
- https://webpack.js.org/branding/
- https://nodejs.org/en/about/resources/
- http://sass-lang.com/styleguide/brand