



Using Flutter and HTML5 to build Rexx applications

Michael Beer, 2023



Agenda

- Update on the EU project
- New projects



mHealthINX

- 2020/3 – 2023/5
- Innovative Stress Management Solution (Sensors, VR)
- Target Group: 50+
- International Consortium
- 2 scientific studies
 - NL
 - CH
- 70 participants



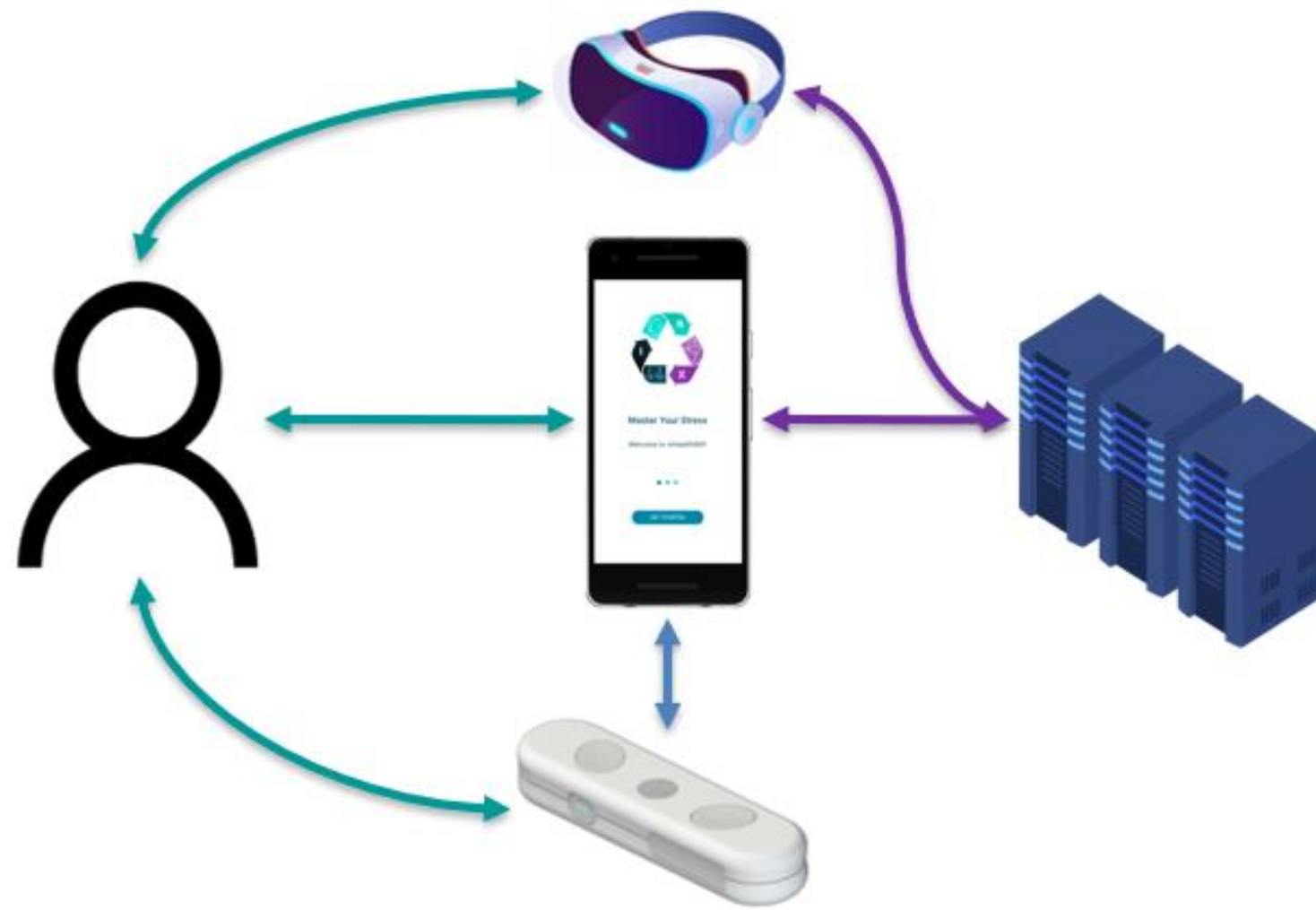


INTERNATIONALES KONSORTIUM





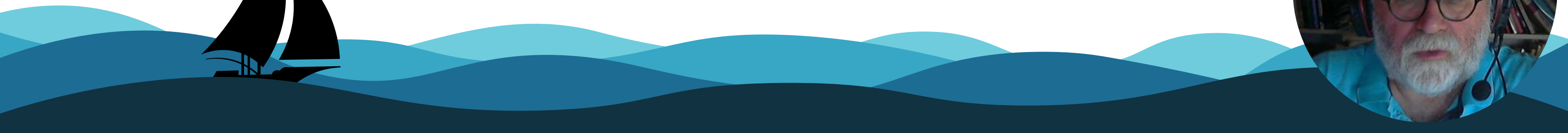
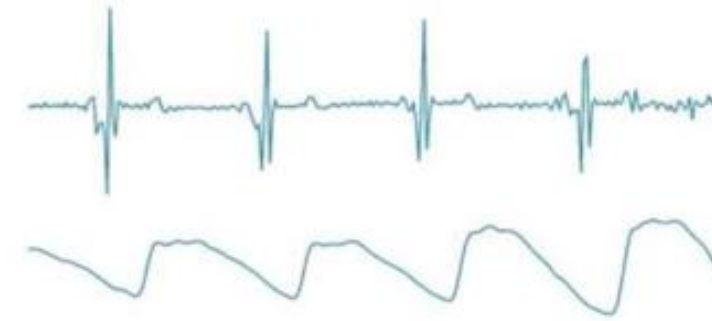
mHealth INX



BIOSIGNAL AND STRESS MEASUREMENT



- 2 minute measurement
 - ECG & pulse waves
- Heart rate variability
 - Reduced variability indicates stress



VIRTUAL REALITY

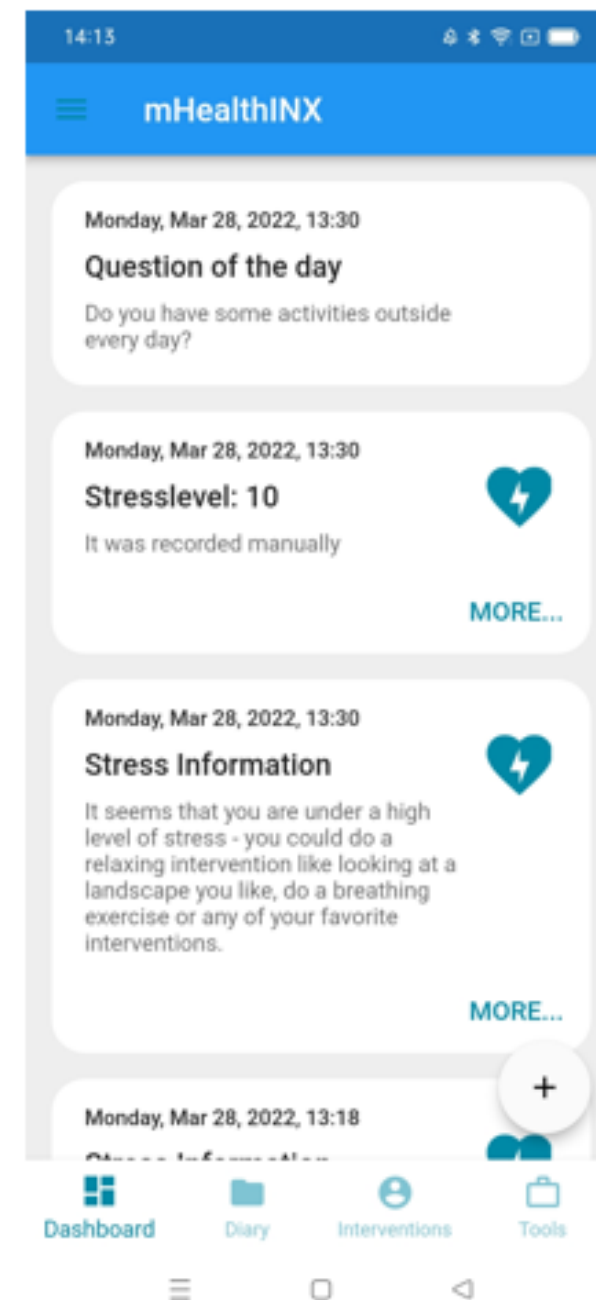


- Oculus Quest 2
- Relaxation & Mindfulness
 - Photospheres
 - Mindful walk
- Games & Exercises





mHealthINX



System
Configuration

Flutter (Android)

Python

Rexx (Regina, MariaDB,
Windows Server)



App Backend

- Application Server
 - Gets called from Frontend
 - Provides Interventions
 - Calls MC backend
 - API calls exposed to other parties
 - → SWAGGER / OpenAPI
- Backend
 - „Legacy“ system with >1000 REXX functions/modules
 - Framework for psychological apps
 - Apache
 - Regina
 - MARIADB
 - APIs used in this project
Server only



DBM – Database Manager

table - database table to use

key - SQL WHERE CLAUSE: admin='xy@xxx.com'

fields - columns to select fields=email,age OR fields email as e,age as a

post - postprocessing for a field. - e.g. post=timestamp:date('l',%,'T') ;

order - ==> order by ... [desc | asc]

limit - number of records to return

api_type - output type for GET: XML | JSON

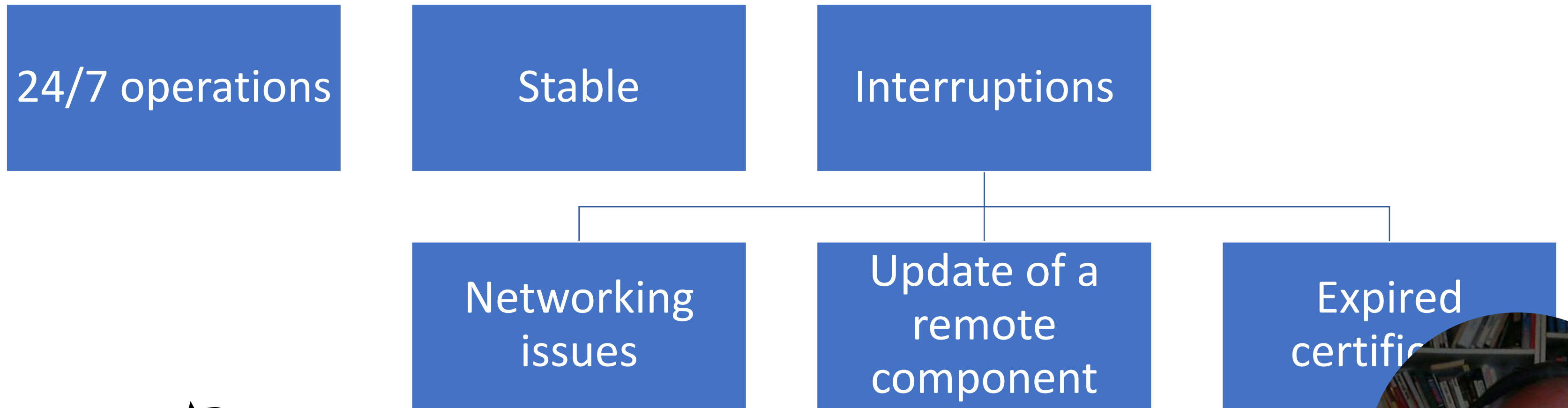


DBM samples

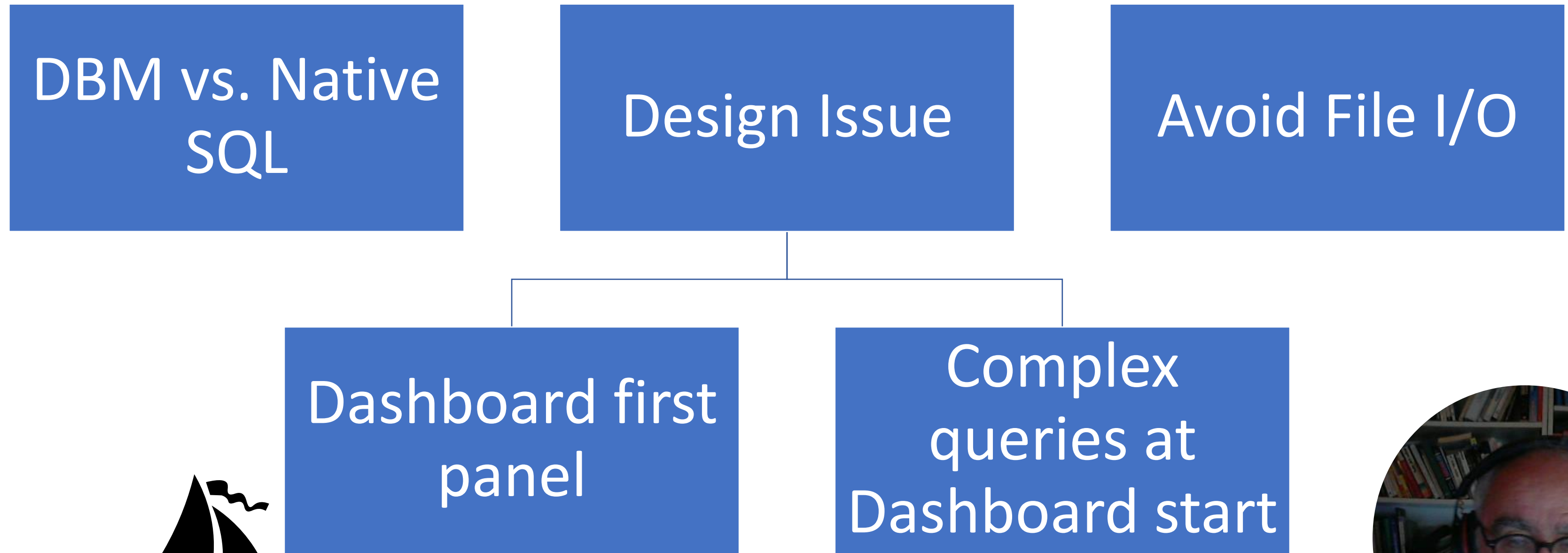
- Say dbm(„&cmd=tables“)
- Say dbm(„&table=stressors&cmd=describe“)
 - Id:int(11) language:char(2) text:varchar(255)
- Say dbm(„&table=user&cmd=get&key=email=....“)
 - <data><rows>20</rows><1>.....</1>....</data>



Usage Experience - Operations



Usage Experience – Response time



Using system data

- User Exit
- Logging → Database
- Unplanned additional evaluations



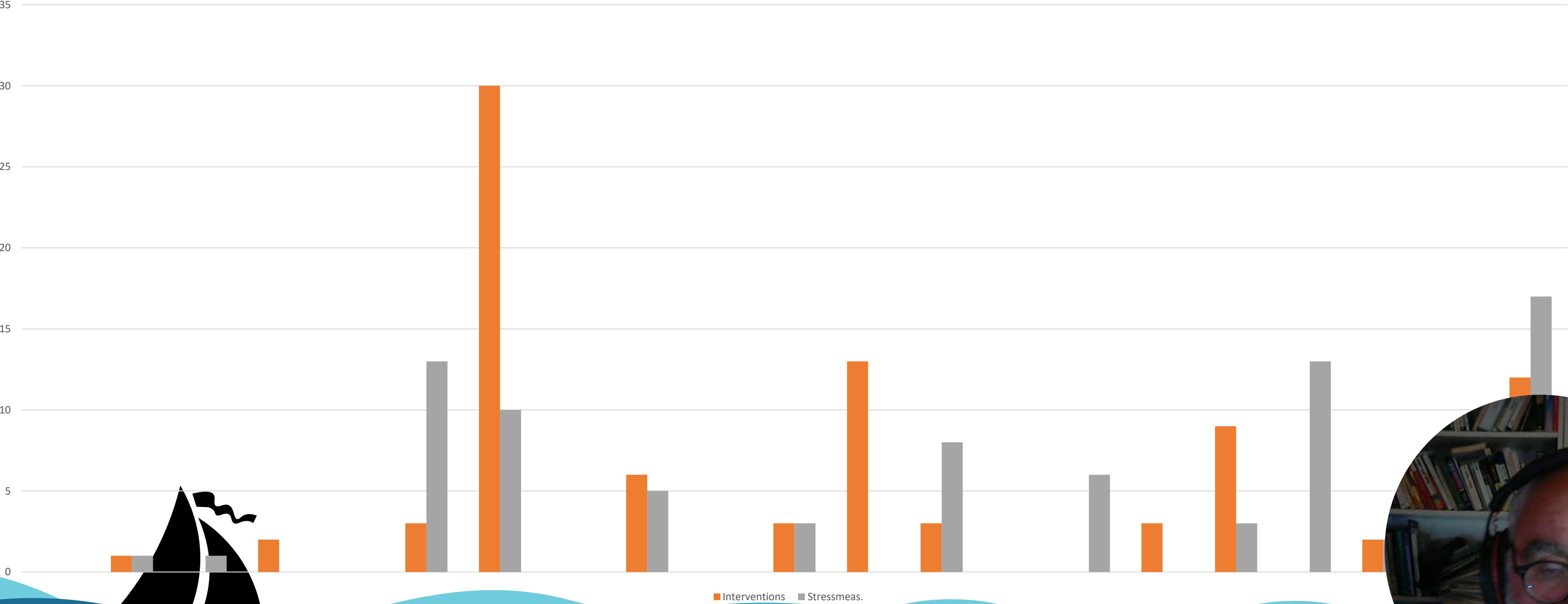
Usage by week

	<u>W1</u>	<u>W7</u>)
1	+..+..	
2	++..+++	..+.	
3	+.....	
4	+++..	
5	+.....	
6	++..++	+..++	+
7	++..++++	
8	+.....	
9	+..++	.+...	
10	+.....	
11	++..+	
12	+++++	+++++	+



Usage Scenarios

Stress measurement (GREY) vs. Intervention (RED) usage



Usage Pattern (24 hours)

```
0 users found.
```

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1																		2	22	45	5	2			
2											2		1												
3										2															
4											2		3			8	6					2			
5												5	4				3	3	4			4	5		
6						4			4						4										
7												2									4	2	4		
8										2				2		2				2	4	8	2	4	
9												6													
10									2			2				7	1		1	2			1	1	
11									3	4	1		4			8			6						
12	5	7						1		2		4	6		2						12	2	3	7	2
13									2												2				
14															2										
15										2							5								
16										2			9												



Identified Issues with REXX

Issue	Status	Comment
Performance	Can be resolved by design	OOREXX is faster than Regina, CREXX might be ideal
Migration to PYTHON	Not necessary	Working on REXX-repository
Missing functions	Are implemented	MATH, AI
SWAGGER integration	TBD	



2 More projects

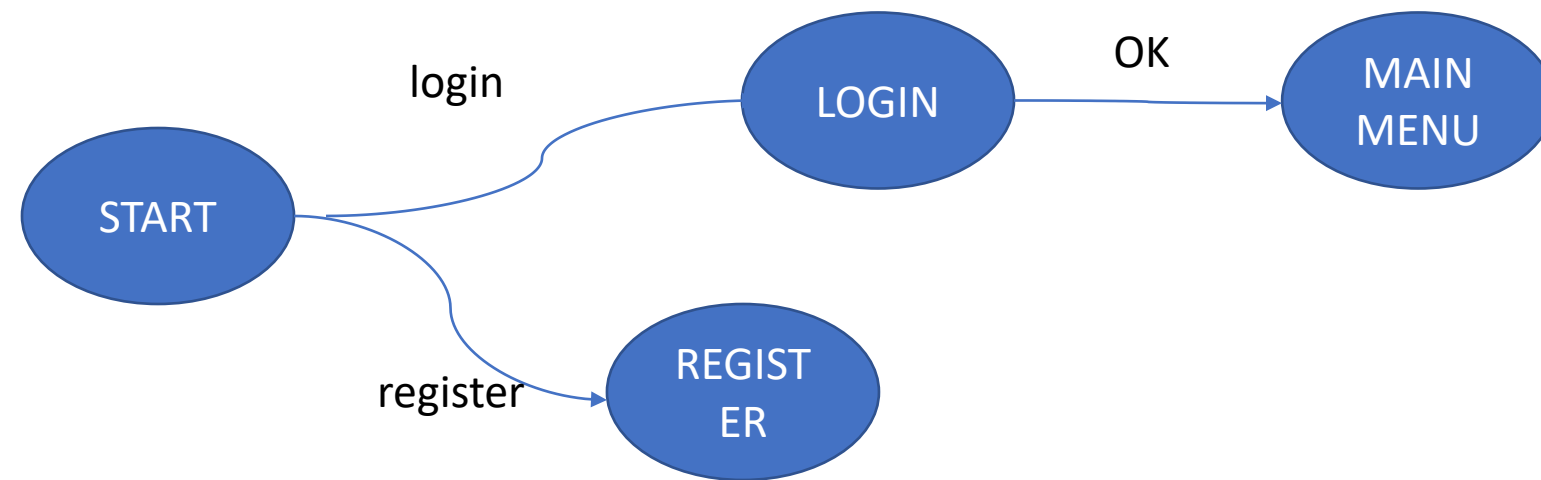


Development environment

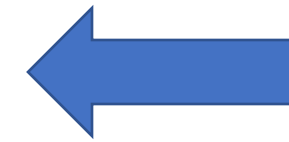
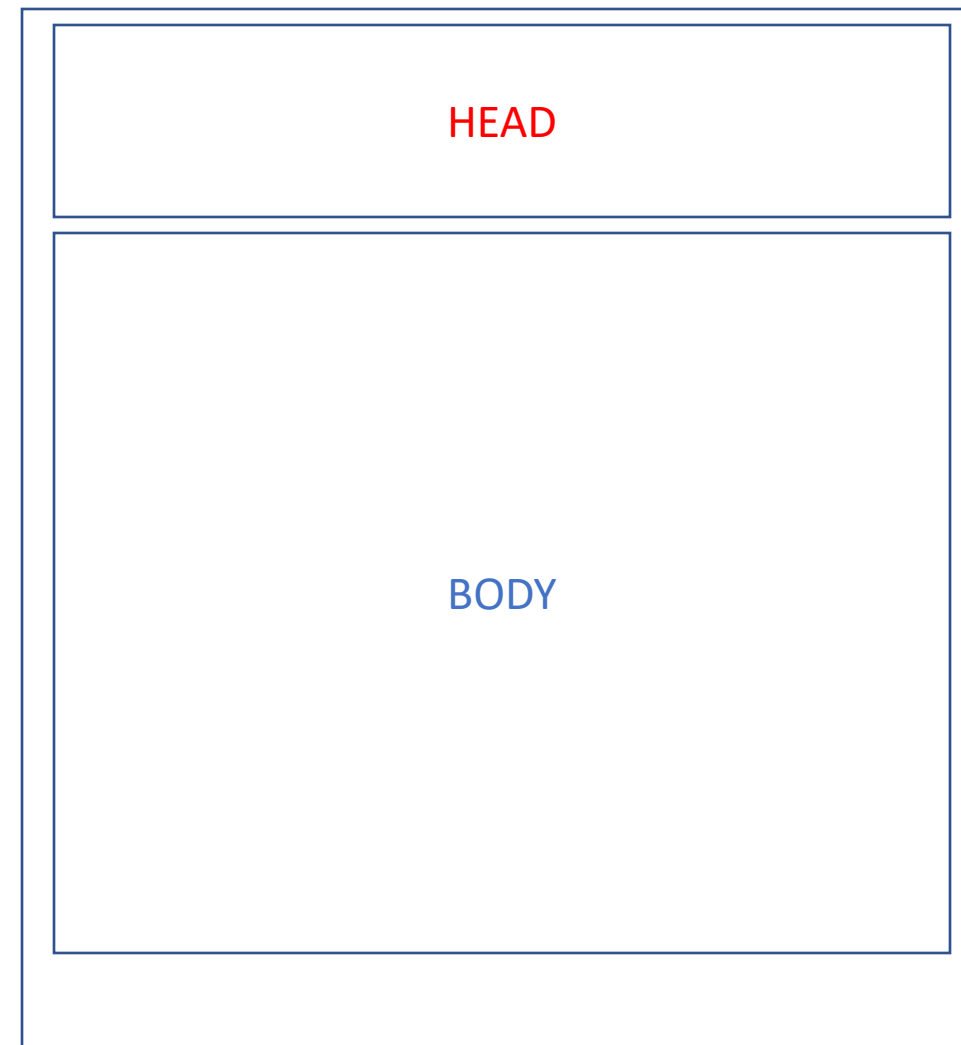
	Flutter	Ionic	Own Framework
Scripting Language	DART	Node JS	REXX + Javascript
System config easy to manage	NO	NO	YES
Dev environment vs. prod	different	different (Bugs!)	Same
Dependencies	Many	Many	Few
Routing Table	YES	YES	Was missing (different approach)
One page design	N/A	YES	Not in old version



Routing – State Graph



One Page Design



Reload
Contents



3 parts

- Design
- Routing logic
- Contents
 - Visual
 - Logic (REXX)



Routing file

```
SKFMENU = &cols=2&data=,
```

```
Tagebuch;;apps/SKF/Contact-min.jpg,,
```

```
Info;;apps/SKF/Information-min.jpg,,
```

```
Chat;;apps/SKF/Chat-min.jpg,,
```

```
IV;Übungen;apps/SKF/Activities-min.jpg,,
```

```
Screening;Screening;apps/SKF/screening-min.jpg,,
```

```
Stimmung;Stimmung;apps/SKF/simyball-min.jpg,,
```

```
&text=&title=Sei Kein Frosch,
```

```
&til=fa-sharp fa-light fa-bars:BURGER,fa-light fa-rectangle-history:DASHBOARD,fa-regular fa-microscope:TEST,
```

```
&tir=fa-regular fa-light-emergency-on:EMERGENCY;fa-regular fa-user:PROFILE
```



Routing

<code>\$START</code>	<code>*</code>	<code>=></code>	<code>INIT with skf.html</code>
<code>INIT</code>	<code>LOGIN</code>	<code>=></code>	<code>LOGIN()</code>
<code>INIT</code>	<code>REGISTER</code>	<code>=></code>	<code>REGISTER()</code>
<code>REGISTER()</code>	<code>*</code>	<code>=></code>	<code>INIT</code>
<code>INIT</code> <code>&file=gdpr_de.txt</code>	<code>INFO</code>	<code>=></code>	<code>\$INFO</code>
<code>\$INFO</code>	<code>OK</code>	<code>=></code>	<code>INIT</code>
<code>LOGIN</code>	<code>OK</code>	<code>=></code>	<code>\$MENU [SKFMENU</code>



Sei Kein Frosch



Tagebuch



Info



Chat



Übungen



Screening



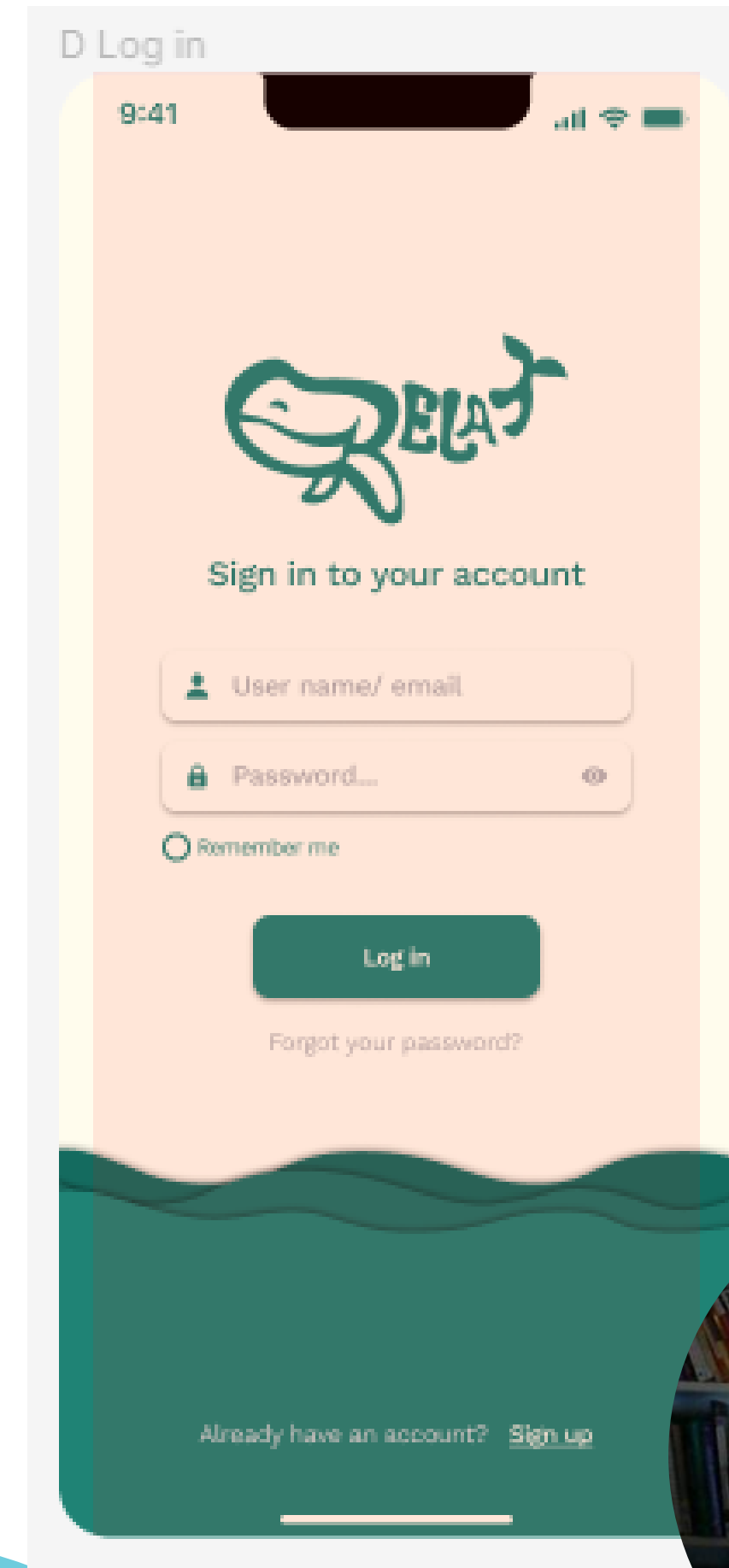
Stimmung

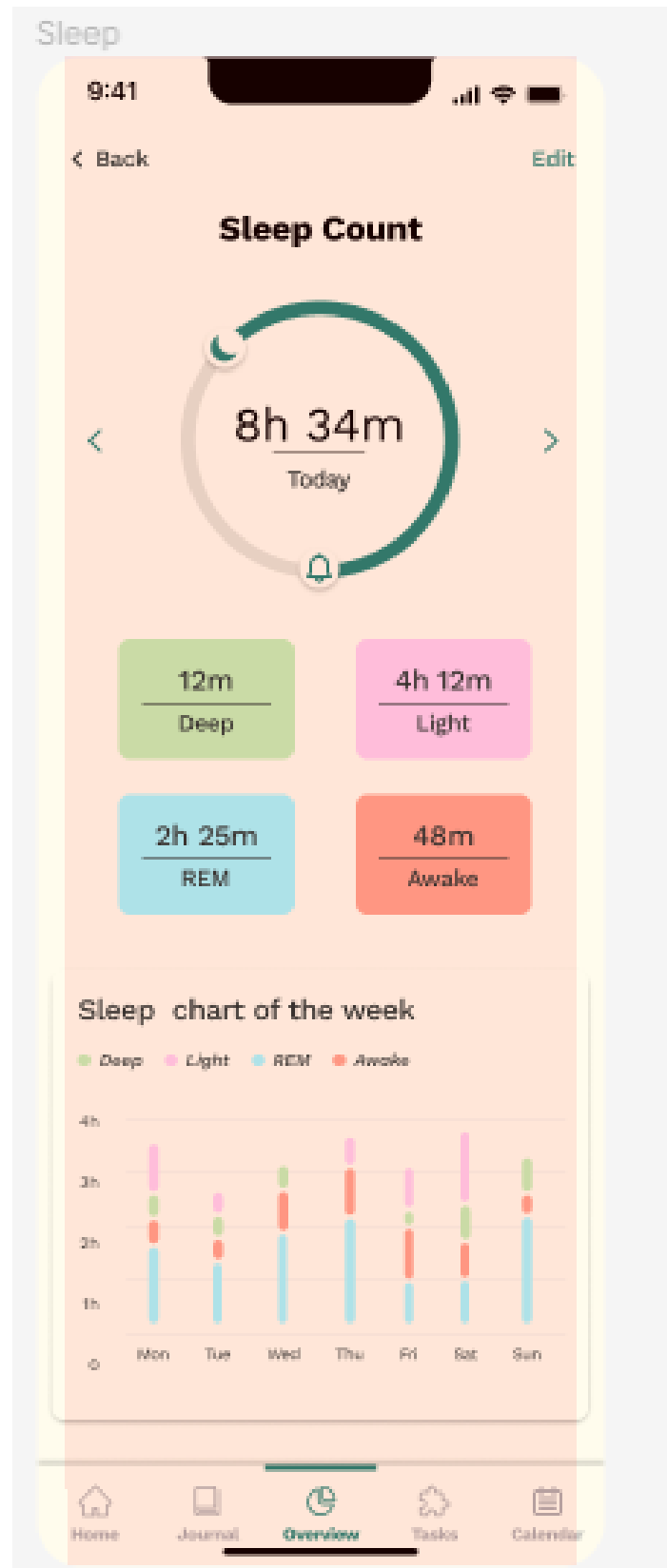


FFG Bridge Projekt



mindcoach





New Challenges

- Dashboard creation
 - Fill SVGs (e.g. Battery 25% full)
 - → UX /UI
-
- But NO TASK that cannot be done with REXX!



Thank you
for your interest!



Mike

