

# IoT-Hackathon

## StayFocussed

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**GitHub Repository: [https://github.com/jules185/IoT\\_Hackathon/wiki](https://github.com/jules185/IoT_Hackathon/wiki)**

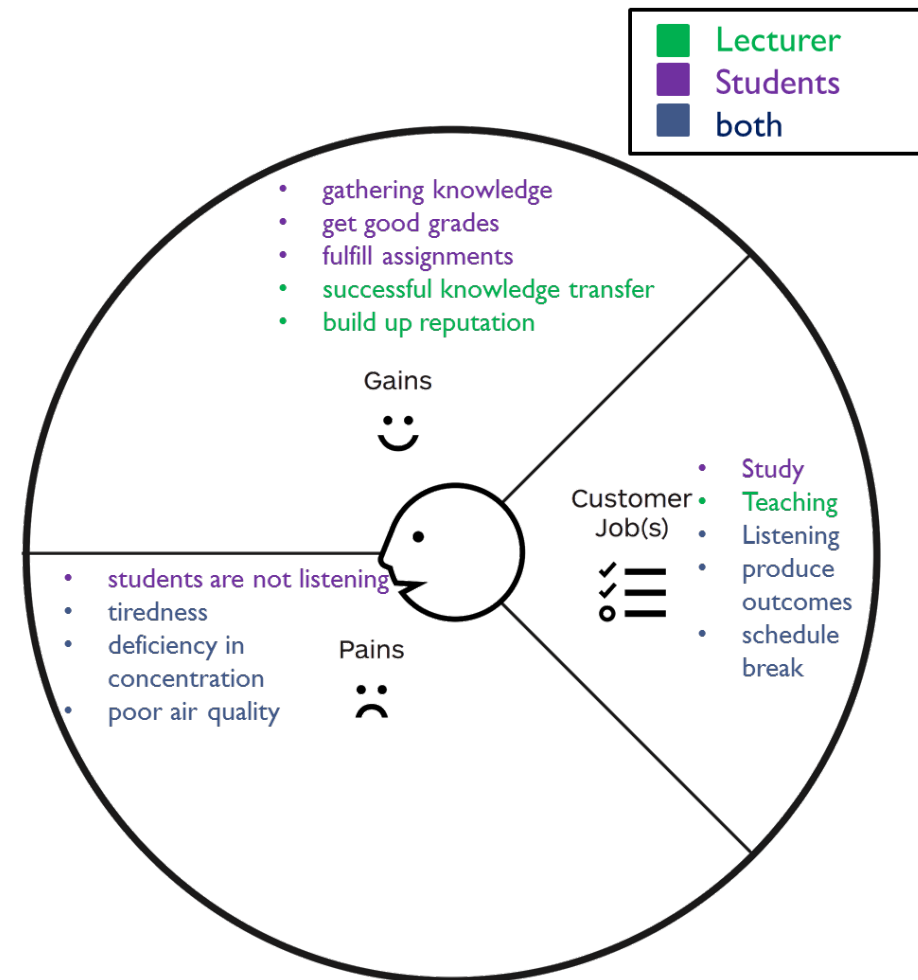
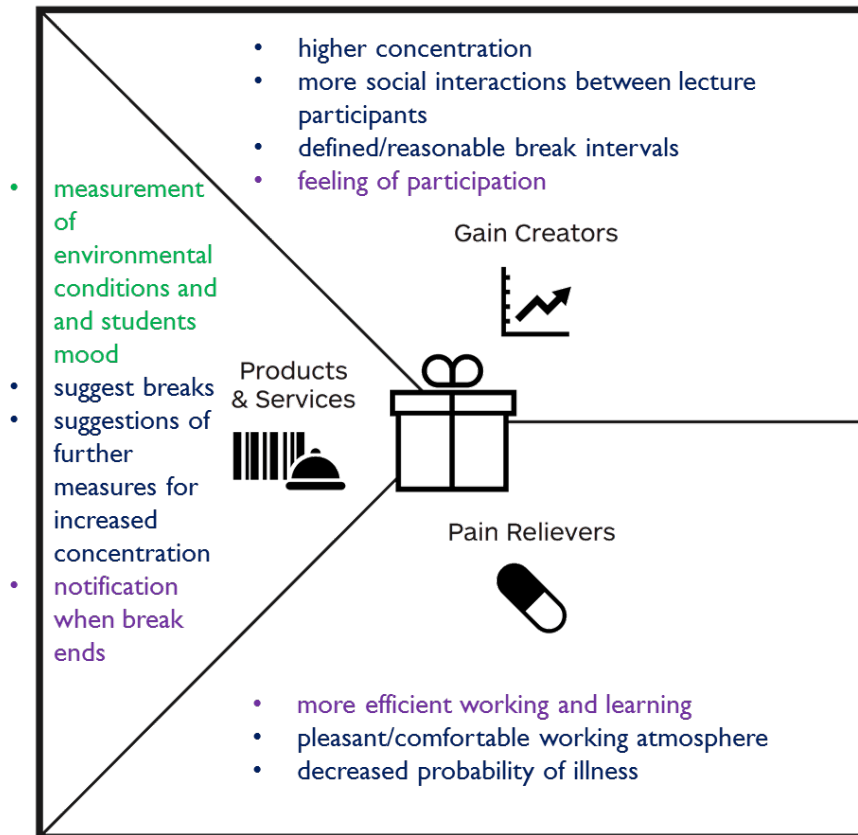
Internet of Things, Prof. Decker, 13.06.2017

## Project Goal

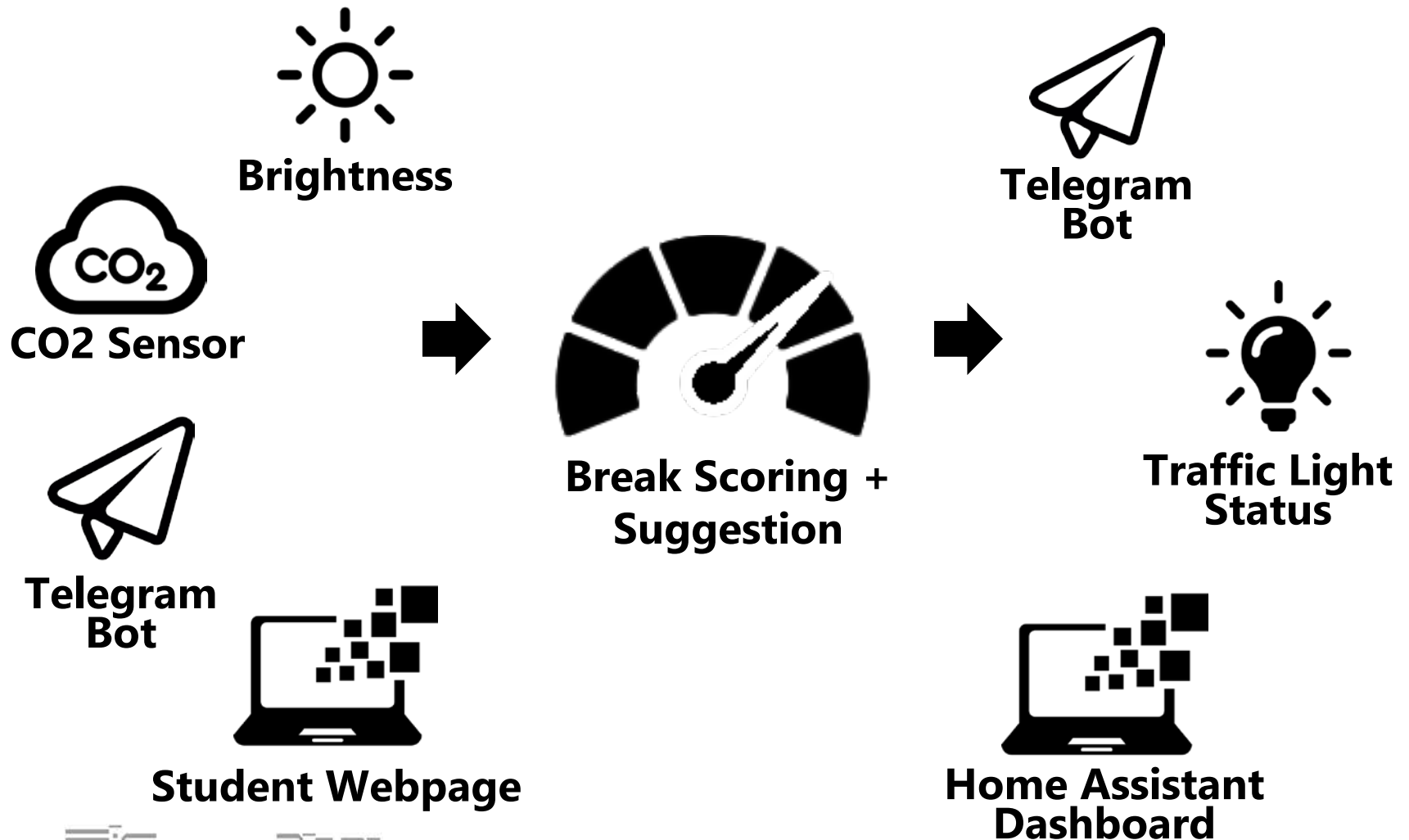
Develop a **service enabling improved concentration** during lectures, more flexible **scheduling of breaks**, enhanced **productivity**, **unified break start and ends**.

The service should be **based on human and sensor input** and should give **break** and other **recommendations** to the lecturer.

# Value Proposition Design



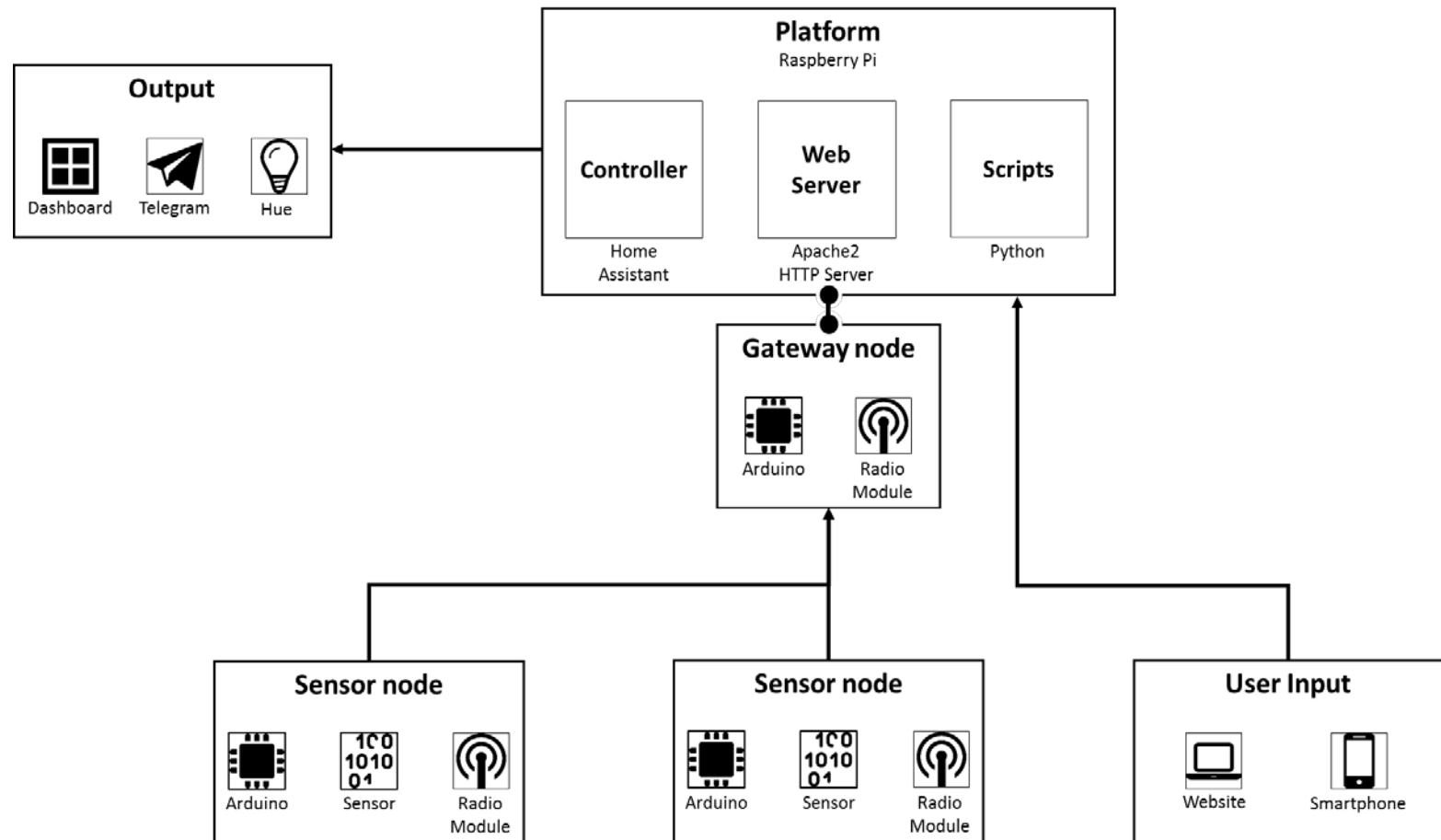
## Minimum Viable Product




# Business Model Canvas

BUSINESS MODEL CANVAS	<b>Key Partners</b> <ul style="list-style-type: none"> <li>• HHZ</li> <li>• Reutlingen University</li> <li>• Other universities</li> <li>• Lecturers</li> </ul>	<b>Key Activities</b> <ul style="list-style-type: none"> <li>• Aggregate sensor information</li> <li>• Make suggestions to enhance learning process</li> <li>• Calculate Score</li> </ul>	<b>Value Proposition</b> <ul style="list-style-type: none"> <li>• More alert students</li> <li>• Better break scheduling</li> <li>• Improvement of work atmosphere</li> <li>• Measurement of environmental conditions and students mode</li> <li>• Suggest breaks</li> <li>• Suggestions of further measures for increased concentration</li> <li>• Notification when break ends</li> <li>• Image improvement for university</li> </ul>	<b>Customer Relationships</b> <ul style="list-style-type: none"> <li>• Online (GIT)</li> <li>• Relax</li> <li>• Word-of-Mouth-Marketing</li> </ul>	<b>Customer Segments</b> <ul style="list-style-type: none"> <li>• Students</li> <li>• Professors</li> <li>• Academic workers</li> <li>• Visitors of HHZ</li> </ul>
		<b>Key Resources</b> <ul style="list-style-type: none"> <li>• Raspberry Pi</li> <li>• Arduino</li> <li>• Website</li> <li>• Telegram Bot</li> <li>• Home Assistant Dashboard</li> <li>• Scoring algorithm</li> <li>• Sensor network</li> </ul>		<b>Channels</b> <ul style="list-style-type: none"> <li>• Website</li> <li>• Dashboard</li> <li>• Telegram Bot</li> </ul>	
	<b>Cost Structure</b> <ul style="list-style-type: none"> <li>• Power bill</li> <li>• Cost of HW infrastructure</li> <li>• Network</li> <li>• Website hosting</li> <li>• Maintenance</li> <li>• Sensor installation</li> <li>• Setup and administration of lecturer accounts</li> </ul>			<b>Revenue Streams</b> <ul style="list-style-type: none"> <li>• Better image for HHZ</li> <li>• Marketing opportunity</li> <li>• Advertising</li> <li>• Licensing</li> </ul>	

# Architecture

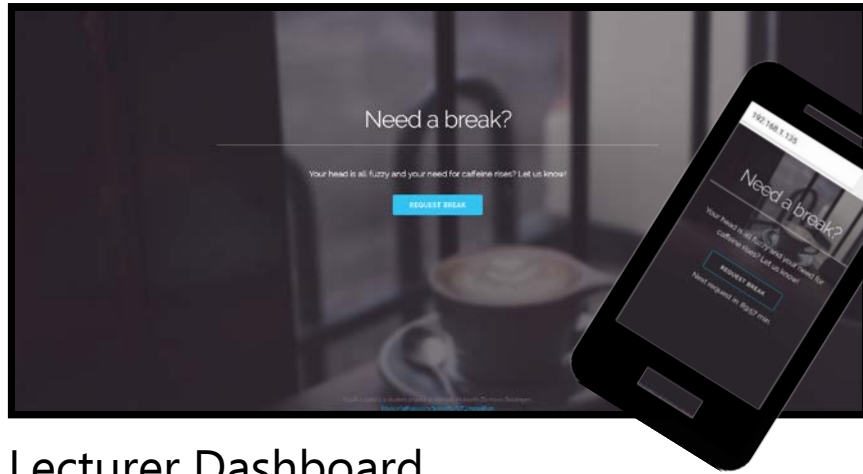


# Scoring and Output

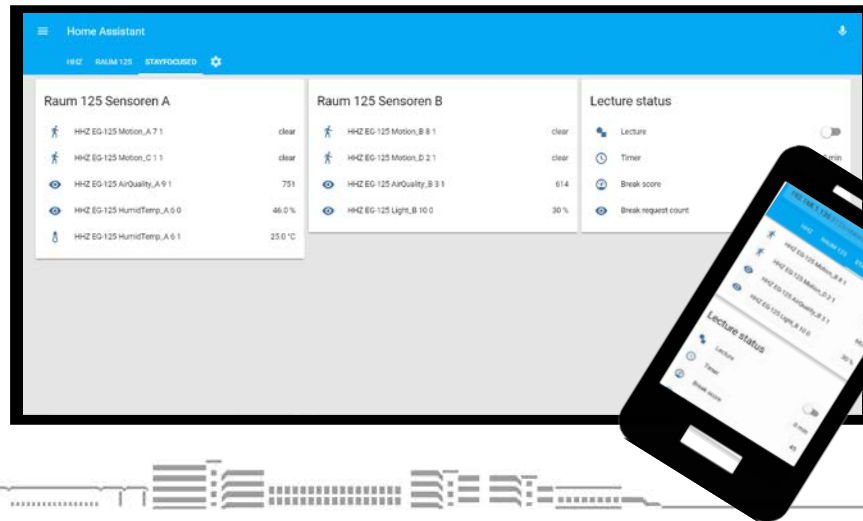
Scoring and Output			
Score = Time in Minutes			
Score += Number of Break Request * 5			
		Brightness	
> 600 Lux (bright)	200 - 600 Lux (medium)	< 200 Lux (dark)	
Score += 0	Score += 10	Score += 20	
		Brightness Notification	
		CO2 Concentration	
< 600 ppm (good)	600 - 1000 ppm (medium)	> 1000 ppm (bad)	
Score += 0	Score += 25		Score += 50
	<div><div>true</div><div>&gt; 900 ppm</div><div>false</div></div>		
	CO2 Notification		
		Score Output	
Score < 50	50 < Score < 100	Score > 100	Score > 150
Hue = green	Hue = yellow	Hue = red	Hue = red
		Lecturer Notification via Dashboard	Lecturer Notification via Dashboard

# Service Design

## Student Webpage – Break Button



# Lecturer Dashboard



# Telegram StayFocussed Bot



## Sensors and Hue Traffic Light

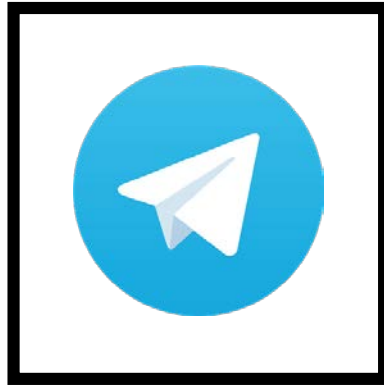




# Lecturer Access StayFocussed



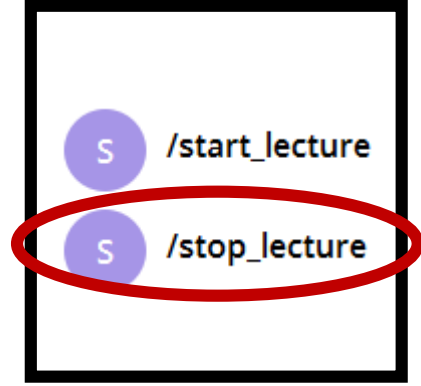
1. Scan QR Code  
or visit  
[https://telegram.me/stayfocussed\\_bot](https://telegram.me/stayfocussed_bot)



2. Open in  
Telegram



3. On first visit  
click „Start“ and  
send  
`/start_lecture` to  
StayFocussedBot  
to start the  
lecture



4. Receive break  
and learning  
experience  
suggestions. Stop  
the lecture with  
`/stop_lecture`

Visit Dashboard for Analytic Insights:

Scan QR Code or visit  
<http://192.168.1.135:8123/states/group.stayfocused>



Prerequisite:  
Your  
Telegram ID  
needs to be  
hardcoded to  
be authorized  
as an lecturer.

# DEMO



# Student Access StayFocussed



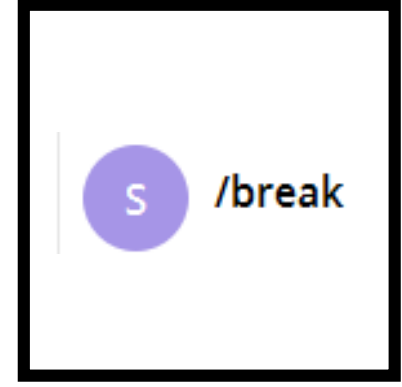
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2. Open in  
Telegram



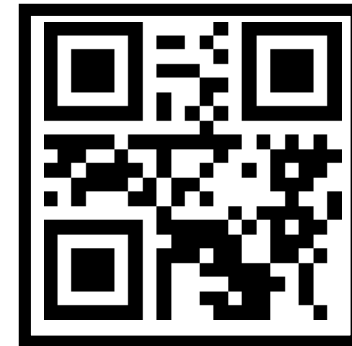
3. On first visit  
click „Start“ and  
send `/register` to  
StayFocussedBot  
to register for  
the current  
lecture



4. Request `/break`  
or get message  
when lecture  
break is over

Don't have Telegram? Use our **Webpage** ...

Scan QR Code or visit  
[https://telegram.me/stayfocussed\\_bot](https://telegram.me/stayfocussed_bot)



# Thank you!

