Deliverable D1
Breathe your troubles away

BYTA – https://github.com/AmI-2016/BYTA

Με σχόλια [FC1]: The **contents** of this document must be published on the project website, in a clearly identified location (not as linked PDF or similar).

Με σχόλια [B2R1]:

Group members

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Vision

Occasional anxiety is a normal part of life. You might feel anxious when faced with a problem at work, before taking a test, or making an important decision. But anxiety disorders involve more than temporary worry or fear. For a person with an anxiety disorder, the anxiety does not go away and can get worse over time. The feelings can interfere with daily activities such as job performance, school work, and relationships. One type of anxiety disorder is the panic disorder.

People with panic disorder have recurrent unexpected panic attacks, which are sudden periods of intense fear that may include palpitations, pounding heart, or accelerated heart rate; sweating; trembling or shaking; sensations of shortness of breath, smothering, or choking; and feeling of impending doom.

Panic disorder symptoms include:

- Sudden and repeated attacks of intense fear
- Feelings of being out of control during a panic attack
- Intense worries about when the next attack will happen
- Fear or avoidance of places where panic attacks have occurred in the past

This condition may often be overlooked, partly due to patients concealing it, not wanting to be associated with the stigma of a “mental disease”. Statistics though reveal that in Italy, about 10 million people have, at least once in their lives, experienced a panic attack, while over 2 million are suffering from panic disorder i.e. sustained panic attack incidents. Similar data are reported worldwide; in the US the lifetime prevalence of panic disorder is at 4.7% while the 12 month one is at 2.7%, with almost half of these cases classified as “severe”.

The system proposed is helping patients suffering from this disease to better handle debilitating panic attacks in a home environment. It is especially thought for students who experience panic attacks due to

studying workload and the relevant anxiety involved as it has been found that the studying ambient (posture, nature of work, stress etc.) is a "breeding ground", highly conducive to panic attacks.

Management of the panic attacks via our BYTA system consists in:

Firstly, dimming the lights of the environment, creating a more relaxed atmosphere for the user as it has been found that fluorescent light may exacerbate the condition.

Secondly, instructing the user to breathe in a manner to avoid hyperventilation. Hyperventilation is a symptom of a panic attack where rapid shallow breathing is expelling carbon dioxide faster than the body of the person afflicted is producing it. Deliberate deep breathing exercises help to rebalance the oxygen and CO_2 levels in the blood.

AmI main steps

AmI step	Description
Sensing	Sensing the heart rate and perspiration of the user to detect an impending panic attack
Reasoning	The system processes the data sensed in order to recognize context and whether a true panic attack is imminent, in contrast to a false positive
Acting	Lights management and breathing exercises instructions
Interacting	User follows breathing exercises and also may turn the system off or change parameters

Με σχόλια [FC3]: Describe how the content of the project is developed in the four main steps of all AmI systems.
Be synthetic, one/two sentences per step will be more than sufficient.
All four steps must be well represented in a successful project.

AmI features

AmI feature	Description
Sensitive	Sensing the user's state
Responsive	Able to act according to user's needs
Adaptive	Using different lights and breathing count settings, based on past interventions' effectiveness
Transparent	Running in the background, no need for the user to "turn on" anything
Ubiquitous	Anyone may benefit from BYTA
Intelligent	The system ignores false positives e.g. a gym visit that could be mistaken for a panic attack, and also intelligently changes parameters during and after each intervention to become more suited to the user

Με σχόλια [FC4]: Describe which AmI features are developed by your project. Be synthetic, one/two sentences per feature are sufficient.
Some features may be more important than others, this is normal and depends on the project.
It is also acceptable that some features are not developed in your specific project.

Open issues

Deciding on overall architecture and figuring out how to interconnect individual components

Deciding on the interface form and technologies used.

Researching more in depth breathing techniques to identify the optimal hyperventilation intervention strategy.

Με σχόλια [F5]: The goal of this section is to keep track of the main problems that need to be discussed and solved.
You should organize a section of the web site with a work-in-progress of this information, that will change throughout the project lifecycle.