



**COME UP WITH  
PASSIONATE IDEAS**

---

**User-Centered Design**

**Mariyana Mileva**

Student number: 4500865

Email: [m.mileva@student.fhict.nl](mailto:m.mileva@student.fhict.nl)

## Contents

Elderly-Friendly Smart Home System .....	3
PROBLEM .....	3 <sup>1</sup>
IDEA GENERATION .....	3
USER EXPERIENCES AND NEEDS .....	3
Educational platform for special education .....	4
PROBLEM .....	4
IDEA GENERATION .....	4
USER EXPERIENCE AND NEEDS.....	4
Mental Health App Assistant.....	5
PROBLEM .....	5
IDEA GENERATION .....	5
USER EXPERIENCES AND NEEDS .....	5

# Elderly-Friendly Smart Home System

## PROBLEM

As demographics shift and family structures evolve, an increasing number of elderly individuals find themselves residing in solitary households. This trend is particularly prominent in many developed countries. According to data available as of September 2021, in the United States, approximately 27% of people aged 65 and older were living alone. This trend is echoed in other parts of the world, such as Europe and Japan, where aging populations are becoming more prevalent.

## IDEA GENERATION

A senior-Friendly Smart Home System is designed with one goal in mind: to empower senior persons, elderly couples, family carers, and healthcare professionals. This unique system promotes user-friendliness, including features such as intuitive interfaces, large text, simplified iconography, and voice instructions to meet senior users' diverse cognitive and physical skills. With support for voice commands, gesture controllers, and screen readers, accessibility is prioritized. Furthermore, it emphasizes safety and security, including fall detection, emergency alarms, and seamless interaction with home security systems, ensuring that older users may readily ask for help in an emergency. Overall, this technology is a proactive solution that encourages aging in place, improves the quality of life for elders, and reduces the strain on caregivers in an aging population.

## USER EXPERIENCES AND NEEDS

The Elderly-Friendly Smart Home System places a strong emphasis on meeting the psychological and physical requirements of its target users, who are largely elderly people. Seniors frequently look for emotional well-being, independence, and autonomy. They place a high value on the familiarity and comfort of their own homes, and this system satisfies their emotional desire to safely age in place without sacrificing security. Additionally, the technology meets their demand for social interaction by making it simple to communicate with loved ones, thereby reducing feelings of loneliness and isolation.

On a physical level, elderly users may face challenges related to mobility, vision, and hearing. The system addresses these needs by providing easily accessible features such as voice-activated controls, large and legible text, and simplified icons. This ensures that seniors with varying physical abilities can comfortably interact with the technology, enhancing their overall user experience.

In essence, the Elderly-Friendly Smart Home System not only fulfills the emotional need for independence and social connection but also caters to the physical needs of elderly

individuals, making daily life more manageable and secure. It offers an all-encompassing solution that significantly improves their overall experience by promoting a sense of empowerment, safety, and connectedness as they age in the comfort of their homes.

## Educational platform for special education

### PROBLEM

Students with special needs, such as those with autism spectrum disorders, learning disabilities, or physical impairments, face significant challenges that limit their capacity to excel academically and develop important life skills. Despite their best efforts, traditional educational systems frequently struggle to meet the unique learning needs and specialized help that these students require. This challenge is exacerbated by a lack of resources, inadequate teacher training, and a lack of specialized tools and platforms built expressly to meet the requirements of children with disabilities. As a result, many students with special needs confront educational gaps, limited opportunities, and a lessened sense of inclusion, all of which impede their full involvement in society and realization of their particular potential.

### IDEA GENERATION

According to recent statistics, a substantial number of students with special needs face challenges in traditional classrooms, with lower graduation rates and limited post-school employment opportunities. With this platform the aim is to revolutionize how we approach special education by focusing on personalized, inclusive, and engaging learning experiences. It will provide each student with a tailored learning journey, accommodating their unique abilities, interests, and pace. Whether a student is on the autism spectrum, has dyslexia, or faces physical challenges, the platform would adapt to their needs. The platform could offer a diverse range of content, including videos with sign language interpretation, interactive simulations, audio materials, and tactile resources. This way, students can engage with the content in ways that suit their learning styles.

### USER EXPERIENCE AND NEEDS

Physical requirements for students with special needs might vary greatly depending on their disability. Some people may need assistive technologies such as screen readers or adaptive input devices. The platform should be compatible with a variety of accessibility tools and provide information on how to use them.

Students with disabilities frequently encounter particular emotional challenges. Due to difficulties in traditional learning contexts, they may suffer frustration, anxiety, or a sense of isolation. The platform should give a warm and comfortable environment where people feel

respected and understood. Personalized encouragement and comments can enhance their confidence and motivation.

Overall these students need an engaging and stimulating learning environment that caters to their specific learning styles. The platform should offer content in multiple formats (visual, auditory, tactile) to accommodate various needs. Interactive activities and gamified elements can make learning more enjoyable.

## Mental Health App Assistant

### PROBLEM

Anxiety, depression, and stress are common mental health issues, with research indicating that millions of individuals worldwide are afflicted. However, a number of barriers impede access to mental health care. These include the stigma associated with mental health concerns, the scarcity of mental health specialists, long wait times for appointments, and the prohibitively high prices of treatment and counseling services. Furthermore, the growing reliance on digital gadgets and social media platforms has created new stressors while exacerbating existing mental health issues, resulting in a digital mental health crisis. While there are many mental health applications and digital tools available, the quality and usefulness of these solutions varies greatly, leaving many people in need of guidance, support, and evidence-based therapies.

### IDEA GENERATION

Millions of individuals of all ages and backgrounds are affected by the global problem of mental health. Many people struggle to find appropriate help because of stigma, barriers to care, and today's digital mental health concerns. The mental health app assistant solves these difficulties by providing a user-centered, stigma-free, and effective platform accessible to anybody with a smartphone. Through easy access to individualized, evidence-based care, this platform wants to enable people to take charge of their own mental health journeys. It's not only about delivering information; it's also about encouraging real connections and disseminating practical methods for maintaining and enhancing mental health.

### USER EXPERIENCES AND NEEDS

Users who seek support frequently go through a range of feelings, such as anxiety, grief, and a lack of direction. When necessary, chatbots should be available to provide emotional support, and this platform should offer a supportive and nonjudgmental environment.

These consumers require trustworthy resources and information regarding mental health issues, available treatments, and coping mechanisms. Users should be able to quickly obtain

evidence-based knowledge and practical advice through the platform, giving them the power to make decisions about their mental health.

Customization is important. Users need a customized mental health strategy that takes into account their particular needs, preferences, and objectives. To customize interventions and provide users a sense of agency and control over their mental health journey, the app should employ self-assessment data.