

Human Computer Interaction

PlanItFit **User and Task Analysis**

Authors:

Davide Pinto Teixeira up202109860

Maria Abreu da Costa up202108849

João António Teixeira Coelho up202004846

RUI PEDRO AMARAL RODRIGUES
NUNO RICARDO DA SILVA GUIMARÃES
THIAGO SOBRAL MARQUES DA SILVA
DIOGO JOSÉ MONTEIRO MORGADO ABRANTES
MARIA TERESA GALVÃO DIAS
DANIEL FILIPE MARTINS TAVARES MENDES

Group 6 Class 9

Report presented within the scope of the
Human Computer Interaction course.

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Chapter 1

Project's Idea Description

In response to the surging demand for convenient and personalized fitness solutions, our dedicated team is thrilled to introduce an advanced web TV application. This cutting-edge platform utilizes state-of-the-art motion and infrared sensor technology to understand users' movements and performance, offering an inclusive solution for a diverse audience seeking effective home-based exercise options.

Our innovative web TV app empowers users to take control of their fitness with a variety of customizable training programs that can be easily executed in the comfort of their homes. Recognizing the varied needs and lifestyles of our potential users, our application accommodates a range of fitness goals and schedules, ensuring flexibility and accessibility.

In an age where technology and wellness converge, our platform aims to provide an engaging and interactive fitness experience, appealing to individuals of all ages and backgrounds. We prioritize adaptability and inclusivity, understanding that each user is unique with distinct preferences, constraints, and fitness objectives.

Our web TV app leverages the latest advancements in motion and infrared sensor technology, providing real-time feedback and analysis of users' movements, guaranteeing precision and effectiveness in every exercise. This responsive and immersive fitness experience maximizes the benefits of each workout.

Our commitment to inclusivity extends beyond fitness objectives and schedules, ensuring accessibility to a wide-ranging audience. With user-friendly interfaces, comprehensive tutorials, and responsive customer support, we prioritize user satisfaction.

As we embark on this exciting journey at the intersection of technology and wellness, we invite you to join us in revolutionizing your fitness experience. Our web TV app is more than just a tool; it's a partner in your health and fitness, empowering you to achieve your goals on your terms. Welcome to a new era of personalized, convenient, and transformative fitness with our web TV application.

Chapter 2

Related apps, services and systems

When it comes to monitoring and managing training sessions through applications, several options are available. Here are some specific choices:

- **Mobile Apps:** These applications empower users to efficiently oversee training-related aspects. Examples like "Couch to 5K" and others serve as tools for checking training schedules and obtaining various statistics. However, it's important to note that most of these apps lack the capability to evaluate effort levels comprehensively, as they can't provide the users with accurate heart rate, body temperature or other measurements without using third party accessories, such as smart watches. In Figure 2.1, we observe Adidas's specialized workout app, focusing on running.

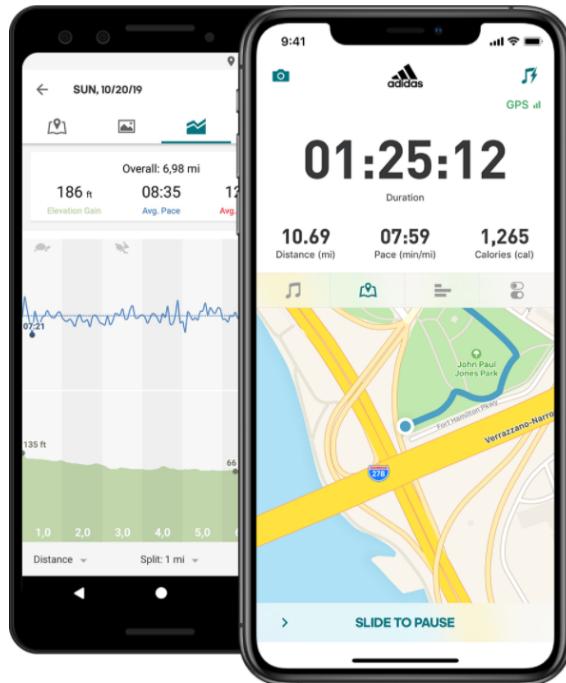


Figure 2.1: Adidas's Runtastic App

- **TV Apps:** These apps have advantages when compared to mobile apps, such as the ability

to have the workout displayed on a bigger screen. However, most of them suffer from the same limitations. Some examples: "Gaiam", "Peloton" (Figure 2.2) and "Daily Burn".

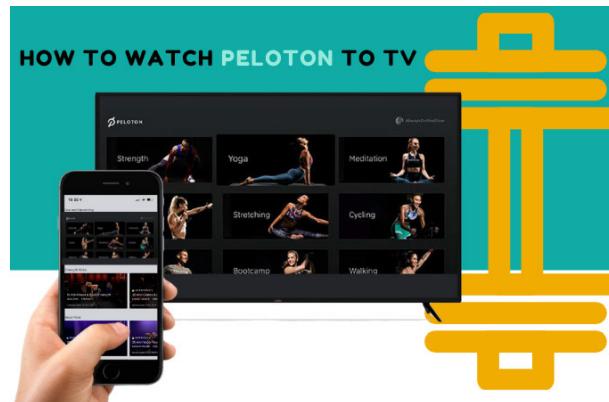


Figure 2.2: Peloton SmartTV App

- **Sports Bands:** Sports bands, such as smartwatches, come equipped with sensors that enable users to track certain effort-related statistics. Nevertheless, these apps may not offer a complete set of statistics, and some may not support the creation or use of training plans due to their limited screen size. In Figure 2.3, we observe one of the most popular sports bands, the Mi Band by Xiaomi.



Figure 2.3: Xiami's Mi Band 5

Chapter 3

Questionnaire - Highlights

In our pursuit of deeper insights into the preferences and requirements of our target audience, we conducted a comprehensive survey via WhatsApp to assess the public's familiarity with fitness applications and their levels of satisfaction. Our study encompassed a diverse sample of 47 respondents, comprising 63.8% males and 36.2% females. Notably, an overwhelming 85.1% of our respondents fell within our primary demographic, aged between 18 and 29. Furthermore, the majority of participants, totaling 63.8%, identified themselves as students, with an astonishing 97.9% reporting no physical disabilities.

One intriguing discovery from our study was the significant prevalence of smart TV ownership among our respondents, as illustrated in Figure 3.1. This observation suggests a heightened receptiveness to emerging technologies within our surveyed population, given that smart TVs represent a relatively recent addition to the consumer electronics landscape.

Do you own a smartTV?

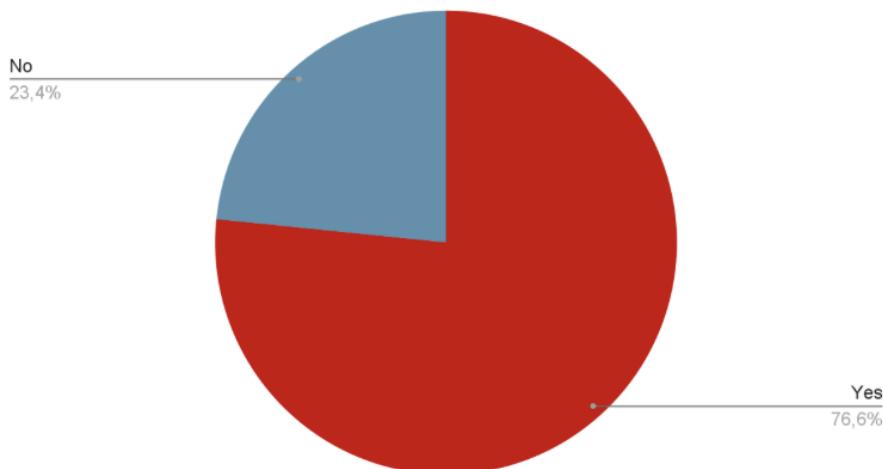


Figure 3.1: Statistics on Smart TV Ownership

Our data reveals a substantial portion of the population (17%), as depicted in Figure 3.2, does not engage in regular exercise. Among those who do, a significant proportion (39%) face challenges in accurately gauging their effort levels, as shown in Figure 3.3. These findings present a promising opportunity for our fitness application. It can serve as a motivating tool

for individuals leading a sedentary lifestyle, encouraging them to initiate home-based exercise routines. Simultaneously, it offers assistance to those who struggle to interpret their body's signals effectively.

How regularly do you exercise?

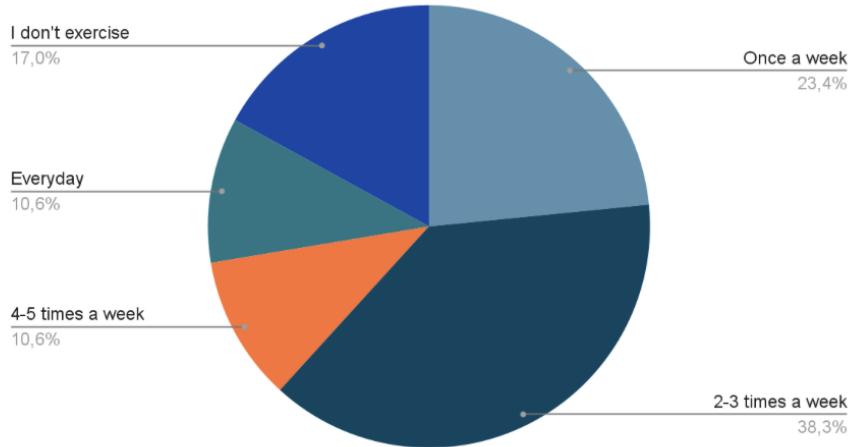


Figure 3.2: Exercise Statistics

If you train, do you have any problem measuring your effort levels?

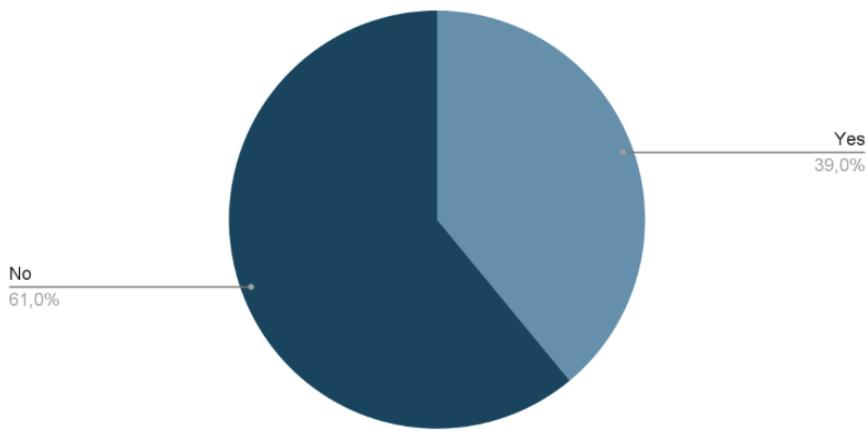


Figure 3.3: Effort Statistics

Perhaps most significantly, nearly 75% of respondents, as indicated in Figure 3.4, expressed a high level of interest (4 or 5 out of 5) in an application capable of measuring their effort levels. This signifies a substantial demand and underscores a clear gap in the market that we are well-positioned to address.

Furthermore, another data point that strengthens our thesis is the overwhelming importance placed on personalization in the fitness plans individuals are following, as stated by the majority of respondents in Figure 3.5. This underscores the critical role that personalization plays in achieving successful fitness outcomes.

On a scale between 1 and 5, classify your interest in having tools that would allow to measure that same effort level:

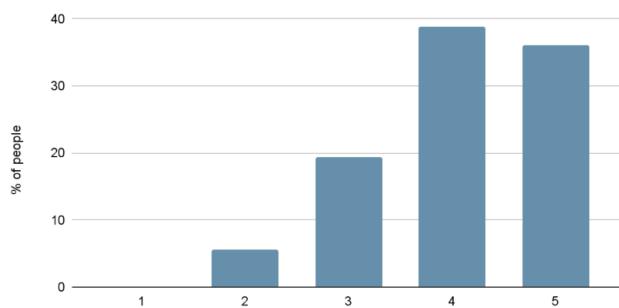


Figure 3.4: Statistics on Interest in Measurement Tools

How important is the customization of your training plan to you?

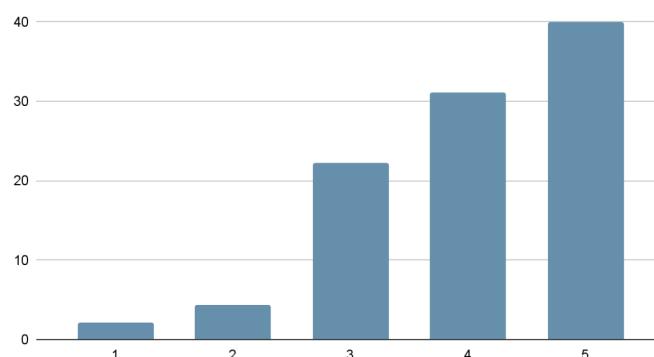


Figure 3.5: Statistics on the Importance of Customization

In summary, there is a compelling market demand for an application of this nature. The feedback we have received from individuals emphasizes that personalized training plans are among the most highly sought-after features, solidifying the necessity for our product.

Chapter 4

PACT Analysis

People

The target market for this app primarily comprises young adults seeking convenient indoor sports and fitness options. The app's most frequent users are expected to be university students who often face time constraints and find it challenging to commute to a gym. Additionally, our aim is to attract individuals of middle age and older age groups, ensuring inclusivity for users of all ages and fitness levels. This app is designed to benefit everyone, providing an accessible and efficient means of exercise, allowing users to monitor their progress and generating comprehensive reports for analysis at the end of each training session.

Activities

In the modern fitness landscape, individuals enjoy a diverse range of exercise options, spanning conventional gym workouts, active sports like football and swimming, and the growing popularity of yoga and pilates. These activities can be pursued either individually or as part of group sessions, ranging from weekly commitments to daily routines. Alternatively, there is a growing cohort of individuals who prefer the convenience of home-based exercise. They can choose from a variety of options, including streaming workout sessions on platforms like YouTube or selecting predefined workouts from dedicated fitness apps. Moreover, the integration of wearable fitness trackers, smartwatches, and fitness apps has also facilitated the exercising aspect in people's lives.

Context

This app aims to enable individuals to exercise conveniently from their homes, saving them valuable time. Moreover, it offers a level of personalized training akin to what one would receive from a personal trainer in a gym setting. Additionally, it addresses common challenges faced by traditional gym-goers, including the high costs of personalized training and scheduling constraints. With this app, users have the flexibility to exercise at their preferred times. Moreover, it caters to individuals who may not feel comfortable exercising in public spaces, creating a private and supportive environment for their fitness journey.

Technologies

As mentioned in chapter 2, there are many smartTV apps that allow their users to exercise from home, even allowing them to personalize their training plans, like "Gaiam", "Peloton" and "Daily Burn". These are more advantageous than regular mobile or pc apps, as they can make use of the TV's enhanced video and audio capabilities. However, none of these take into account your physical and psychological needs, as they have pre-made workout plans and no way of

reading your biological signature as you're exercising. This is where PlanItFit steps in. We differentiate ourselves because of our cutting edge technology, that couples the infrared rays built in the TV with a motion sensor that reads your heart rate to measure your performance and alter your exercises for you.

Chapter 5

Personas

5.1 Lila Sterling



Name: Lila Sterling

Age: 20

Work/Occupation: University student

Location: Lisbon, Portugal

Hobbies: Physical activity, mainly going to the gym

Characteristics: Busy, outgoing, and active

Since Lila can remember, she's always loved exercising. It wasn't just a means of staying fit, it was her way of relaxing and maintaining focus in school. Lila discovered that exercise had a calming effect on her mind, allowing her to excel academically. Moreover, it was an opportunity to connect with her friends who shared the same love for staying active.

Recently, she has been doing gym workouts as a way to keep active, challenge herself physically and stay healthy. The gym is the place that allows her to maintain the balance she wants in her busy life.

However, with the school year starting, she is finding even less time to do what she loves, which is making her look for a way to quit going to the gym but still exercise in order to keep healthy and active.

5.1.1 Objectives/Needs

- Lila seeks an app to exercise conveniently at home during her limited free time.
- She would like a personalized training, similar to what she'd receive at a gym.
- She seeks an app that can track her progress, helping her stay motivated and monitor her fitness improvements.

5.1.2 Frustrations

- As a university student she has a lot of expenses so she would like to find a budget-friendly fitness app that is not more expensive than a gym.
- Because of her busy life, Lila doesn't always have time for traditional long workouts, that can span 45 minutes to an hour. Therefore she would like an app that provides short but effective training sessions that she can finish (15-25 minutes).

5.2 Carlos Barbosa



Name: Carlos Barbosa

Age: 23

Work/Occupation: Software Developer

Location: Vilarinho de Negrões, Montalegre, Portugal

Hobbies: Reading, exploring nature

Characteristics: Introverted, tech-savvy

5.2.1 Background

Carlos Barbosa, a 23-year-old software developer, hails from Porto but recently moved to Vilarinho de Negrões, Montalegre, one of the most secluded villages in Portugal. He yearned for a change in lifestyle and sought to get closer to nature after completing his Informatics and Computing Engineering course at FEUP (Faculty of Engineering, University of Porto).

5.2.2 Current Situation

This marks Carlos's inaugural year in the workforce, and he is absorbed in his work, leaving him with limited time for activities he used to enjoy. Unfortunately, the nearest gym to Carlos's location is a 45-minute drive away, making it impractical for him to maintain a regular fitness routine. This has become a concern for Carlos, as he values his health and well-being but doesn't want to compromise his professional growth.

5.2.3 Goals

- **Professional Growth:** Carlos aspires to excel in his career as a software developer. However, he is determined not to sacrifice his health and well-being in the process. He seeks a balance between career success and maintaining a healthy lifestyle.
- **Fitness Tracking:** Carlos is keen to find a way to monitor his physical activity and effort levels without having to commute to a distant gym. He needs a solution that fits seamlessly into his remote work routine, enabling him to stay fit and healthy within the confines of his remote location.

- **Nature Exploration:** Carlos is passionate about nature and would like to explore the natural beauty of his new surroundings. He hopes to integrate outdoor activities into his lifestyle, combining his love for technology with his appreciation for the great outdoors.

5.2.4 Additional Information

Carlos is tech-savvy and open to leveraging technology to address his challenges. He owns a smartTV and is comfortable with using various apps and gadgets. He enjoys quiet evenings reading books and escaping into the world of video games to unwind. He values his solitude and appreciates the tranquility of his rural environment.

Chapter 6

Activity scenarios

6.1 Lila Sterling:

After a long day of university classes, Lila returns home feeling mentally and physically exhausted. Despite her fatigue, she's determined to unwind and relieve stress through a gentle workout. She turns on her smart TV, logs into PlanItFit and chooses a relaxing 25-minute yoga workout. This allows her to maintain her daily exercise routine without overexerting herself or spending excessive time in front of the TV.

6.2 Carlos Barbosa:

Carlos wakes up on the 5th of October, a national holiday in Portugal, meaning he doesn't have to go to work. Feeling the absence of his family, he decides to visit them. At his mother's house, he eats some of his favourite sweets. After he gets home, he realizes he made a mistake and wants to burn some calories. He could always go for a run or a bike ride, but it's getting late and it's dark outside. Therefore, he opens PlanItFit, and has a high intensity crossfit workout, burning a lot of calories and achieving a satisfying sense of accomplishment.

Chapter 7

Functionalities and tasks

Taking into account our PACT analysis and the answers we received in our questionnaire, we have decided to implement the following tasks and functionalities:

- **Register:** To use the app, the user has to create an account.
- **Delete Account:** Users can delete their account.
- **Log in:** Users are able to log into their account.
- **Log out:** Users can log out of their account.
- **Personalize Account:** Users are able to insert their personal information, like age and weight, into their account.
- **Customized Workout Preferences:** Users have the ability to input their workout preferences, including the duration of their workouts and the frequency per week, within their account.
- **Video Customization Options:** Users have the freedom to customize various aspects of the video, including subtitles and audio languages.
- **Personalized Training:** Users receive tailored training videos that adapt to their personal information, such as age, weight, and other important parameters, like available time per day or stress levels, ensuring exercises are customized to their specific needs.
- **Search Specific Types of Exercises:** Users have the capability to search for specific types of exercises, such as pilates or yoga, and receive results customized based on their personal data.
- **Training Report Delivery:** Users receive a comprehensive training report after each session.
- **Effort Measurement During Training:** Users can gauge their effort levels during exercises using integrated sensors.

Appendix A

Questionnaires

In this comprehensive appendix, we provide the complete set of questions that constituted our research questionnaire, which was administered via Google Forms. These questions were thoughtfully designed to fulfill specific research objectives, providing us with valuable insights into both our study participants and the overarching purpose of our research. By sharing these questions, we aim to enhance transparency in our research methodology and offer a glimpse into the data collection process that underpins our study.

PlanItFit

up202004846@g.upporto.pt [Change Account](#)

 Not shared

 Rascunho guardado

* Indicates a mandatory question

Gender *

Male

Female

Age *

<18

18-29

30-45

46-60

>60

Occupation *

Student

Working-Student

Employee

Freelancer

Unemployed

Retired

Do you own a smartTV? *

Yes

No

Do you have any physical disabilities? *

Yes

No

How regularly do you exercise? *

Once a week

2-3 times per week

4-5 times per week

Everyday

I don't exercise regularly.

If you train, do you have any problem measuring your effort levels?

Yes

No

On a scale between 1 and 5, classify your interest in having tools that would allow to measure that same effort level:

1 2 3 4 5

Not Interested

Very Interested

If applicable, which of the following have you partook in?

Gym

Organized Sports (team or individual)

Mobile or web app that encouraged the practice of physical exercise

Home workouts

Other _____

On a scale from 1-5, rate how important personalizing your training plans is to you

1 2 3 4 5

Not Important

Very Important

Do you like the idea of having access to training plans you can execute at home, * personalized according to your biometric data?

Yes

No

If you answered yes to the previous question, tell us the types of exercises you'd be interested in.

- Pilates
- Yoga
- Crossfit
- Weight training
- Other _____

If you've used training apps before, tell us what you value most.

Your answer

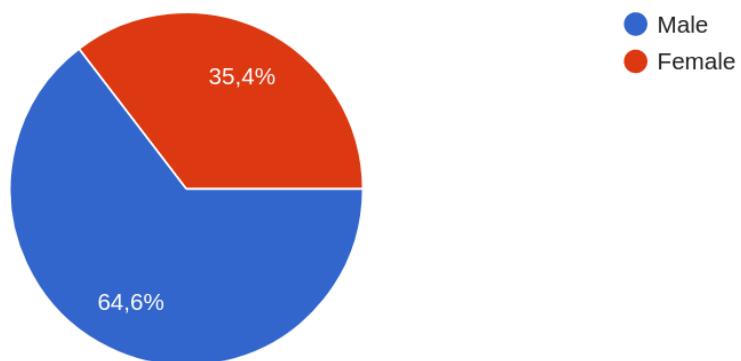
Appendix B

Summary of Results

In this appendix, we offer a comprehensive summary of the results obtained from our research questionnaire. Each figure presented corresponds to a specific question from the questionnaire, providing a visual representation of the responses we collected. This section serves as a key component of our research findings, offering readers a clear and organized overview of participant insights and responses.

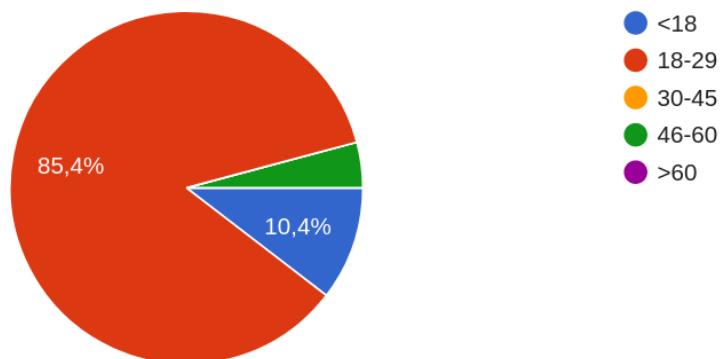
Gender

48 answers



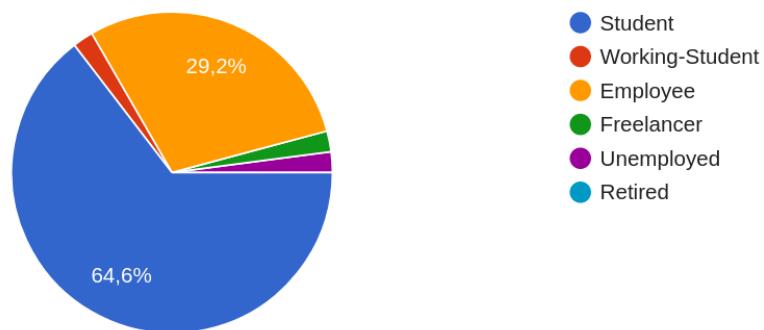
Age

48 answers



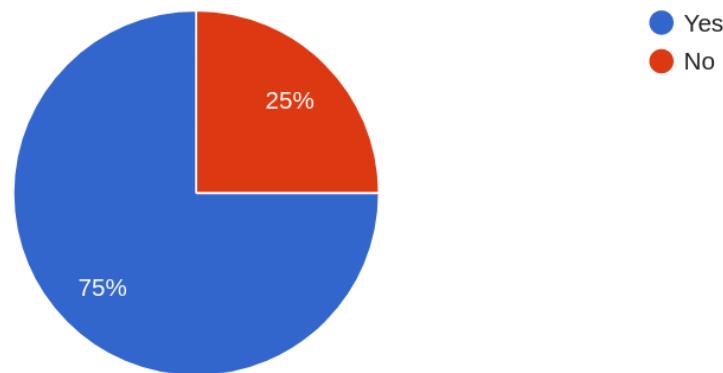
Occupation

48 answers



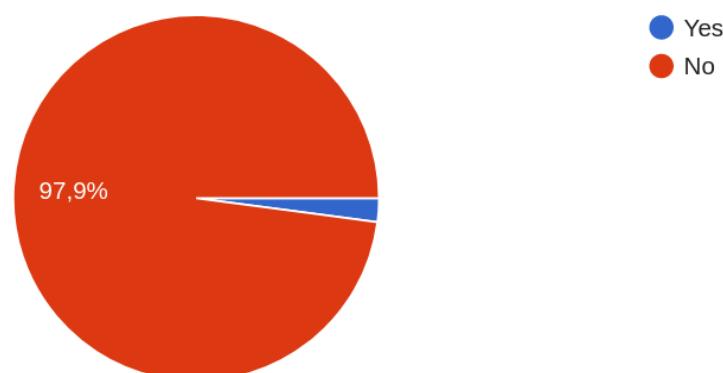
Do you own a smartTV?

48 answers



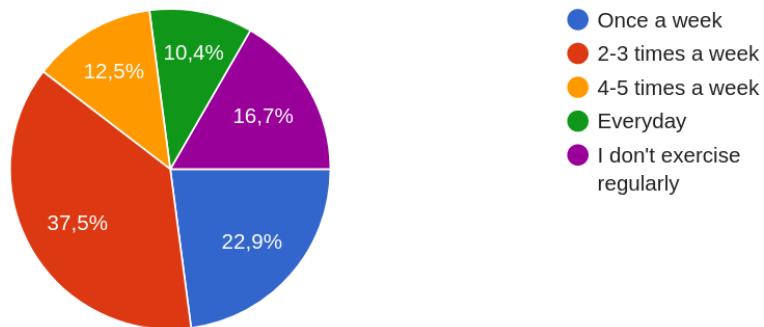
Do you have any physical disabilities?

48 answers



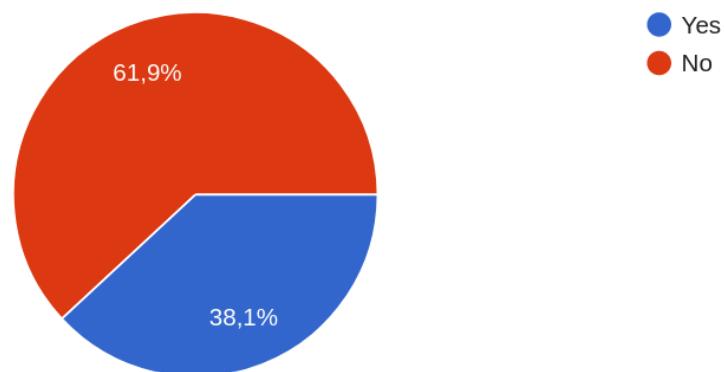
How regularly do you exercise?

48 answers



If you train, do you have any problem measuring your effort levels?

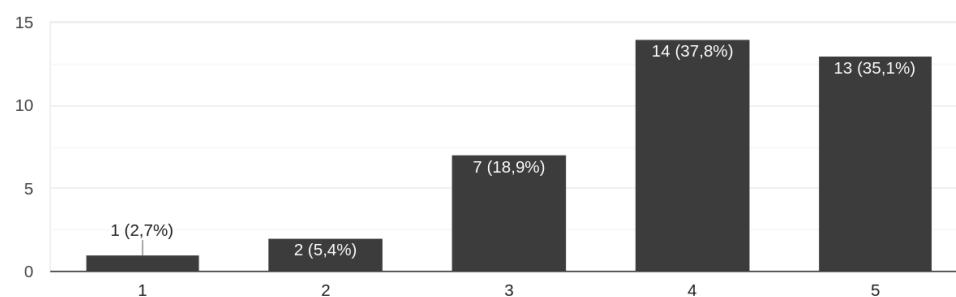
42 answers



On a scale between 1 and 5, classify your interest in having tools that would allow to measure that same effort level.

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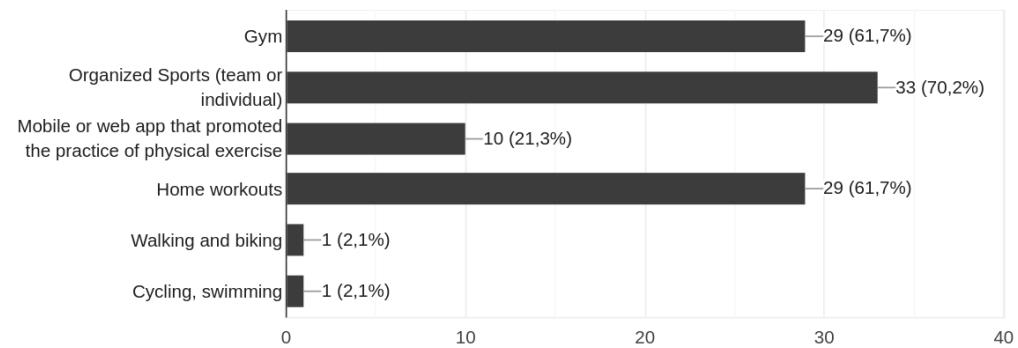
37 answers



If applicable, which of the following have you partook in?



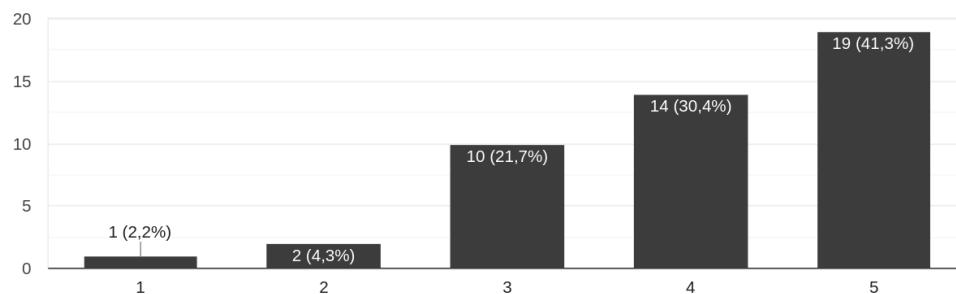
47 answers



On a scale from 1-5, rate how important personalizing your training plans is to you

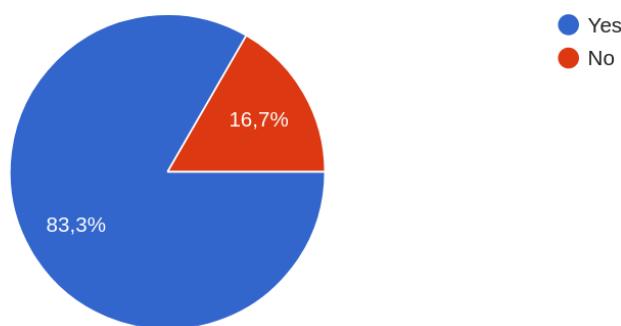


46 answers



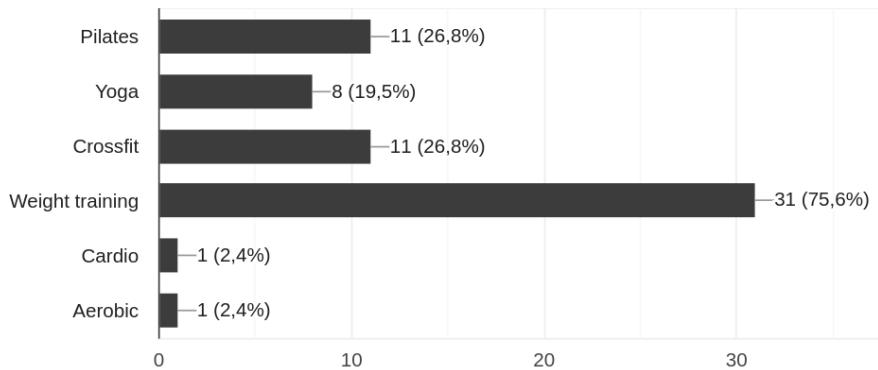
Do you like the idea of having access to training plans you can execute at home, personalized according to your biometrical data?

48 answers



If you answered yes to the previous question, tell us the types of exercises you'd be interested in.

41 answers



If you've used training apps before, tell us what you value most.

13 answers

Planos de treino

Strava. Gosto do aspeto social e de poder ver um histórico completo de todas as minhas atividades.

Bons vídeos de demonstração

Informação correta, variedade de exercícios, exemplos práticos desses exercícios e recomendações de execução dependentes dos nossos objetivos, por exemplo variantes dependendo da nossa aptidão física

variedade de exercícios e medição adequada do esforço