

Mozambique Developer Survey

1st Edition

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About the Mozambique Developer Survey

At MozDevz, we are celebrating a decade as Mozambique's largest developer community. Since our founding ten years ago, we have been focused on empowering young people in the ICT and STEM fields, working tirelessly to develop technical, communication, and negotiation skills. We create an environment that fosters interaction among technology enthusiasts, encourages knowledge sharing, and prepares them for the professional world.

In addition to our educational commitment, we apply our skills to technological solutions for social impact through design, software development, and research. Our community consists of more than 2,000 members, all specialized in different software development technologies. We also have key partners who have been instrumental in achieving a positive impact on more than 50,000 young people through events such as meetups, conferences, trainings, and hackathons.

The success of this impact is visible in the presence of our members and alumni in major national and international companies. We are proud of our direct contribution to the development of new technologies and solutions.

As part of our constant search for improvement and our commitment to understanding the needs of the developer community and identifying market trends, we decided to launch the first edition of the "Mozambique Developer Survey", the first survey of its kind in Mozambique.

We hope you find these results interesting and useful in some way. And it would be great if you could leave your feedback by email at survey@mozdevz.org, whether it's a recommendation or a question.



Igor L. Sambo
President of MozDevz

Introduction

Welcome to the first edition of the Mozambique Developer Survey, a comprehensive survey organized by MOZDEVZ to uncover the world of developers in Mozambique. In this survey, we explore the universe of technology and the development of technological solutions, from those who are taking the first steps on their journey to the experienced professionals shaping the country's technological landscape.

The purpose of this initiative is to have real detailed insight into the prevailing trends in the field of technology and development in Mozambique. We aim to understand developer's preferences, skills, and aspirations, providing valuable insights to help the community and the sector grow and prosper.

By collecting valuable data and information through this survey, we aim to create a comprehensive portrait of the developer ecosystem in our country.

The results of this survey will serve as a valuable resource for companies, educational institutions, decision-makers, and, of course, for the community of programmers, IT professionals, and academics themselves, providing insights that can boost career development and technological innovation in Mozambique. We believe the knowledge gained from this research can stimulate discussions, drive initiatives, and promote actions that contribute to a robust and inclusive technological sector in the country.

We are excited to share with you the results of the Mozambique Developer Survey and hope that this report will be a source of inspiration, learning, and collaboration for everyone involved in the technology and programming sector in Mozambique.

Let's dive into this journey of discovery and explore the fascinating world of programmers in Mozambique together!

About the Authors

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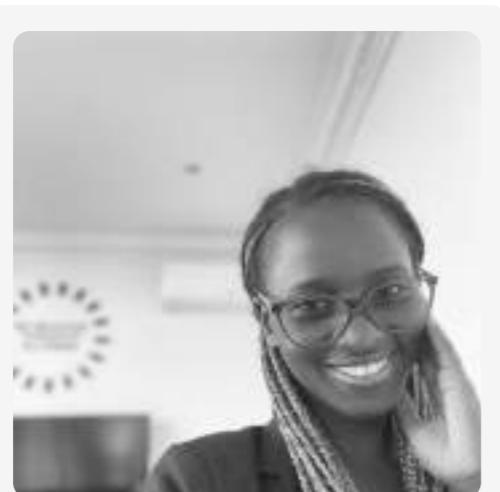
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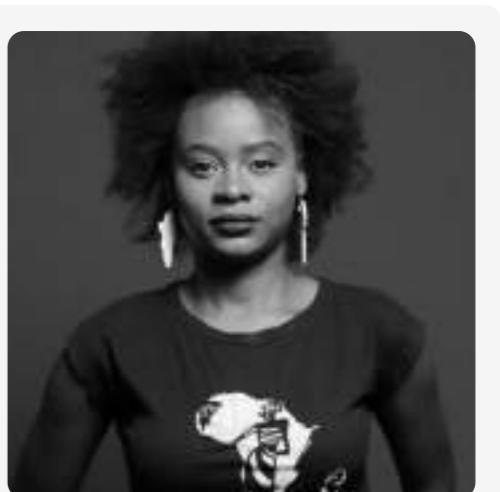
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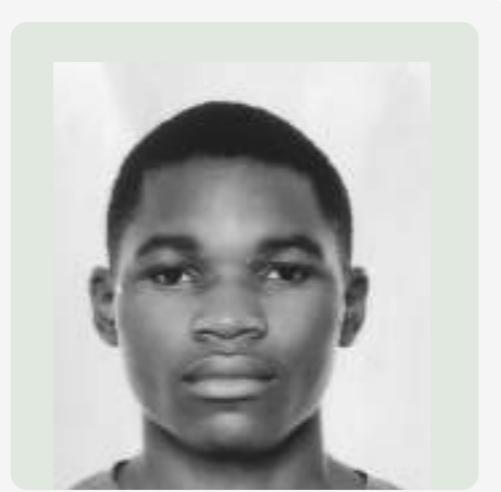
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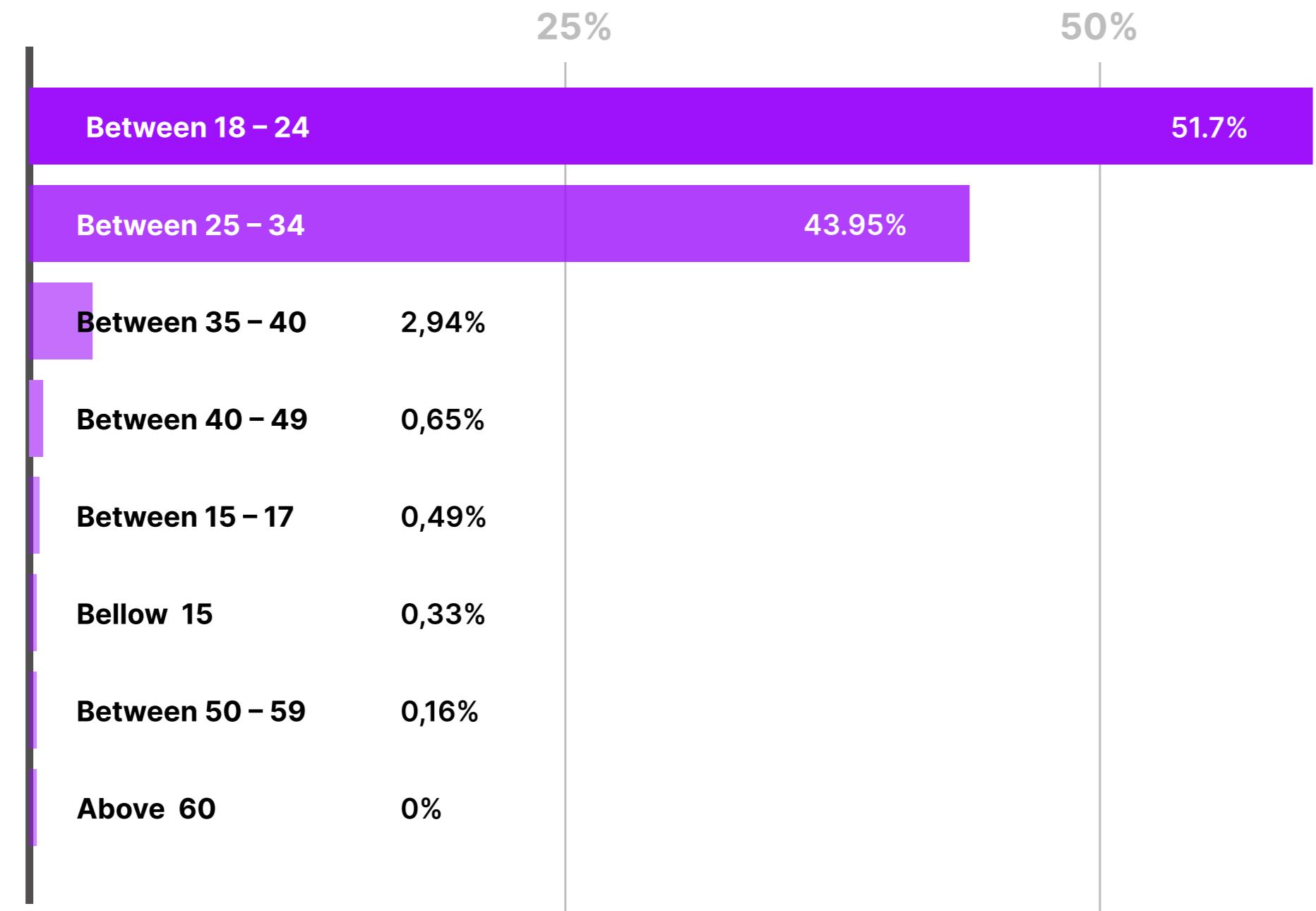
In this section, explore insights related to demographics and developer profiles.

Age Group

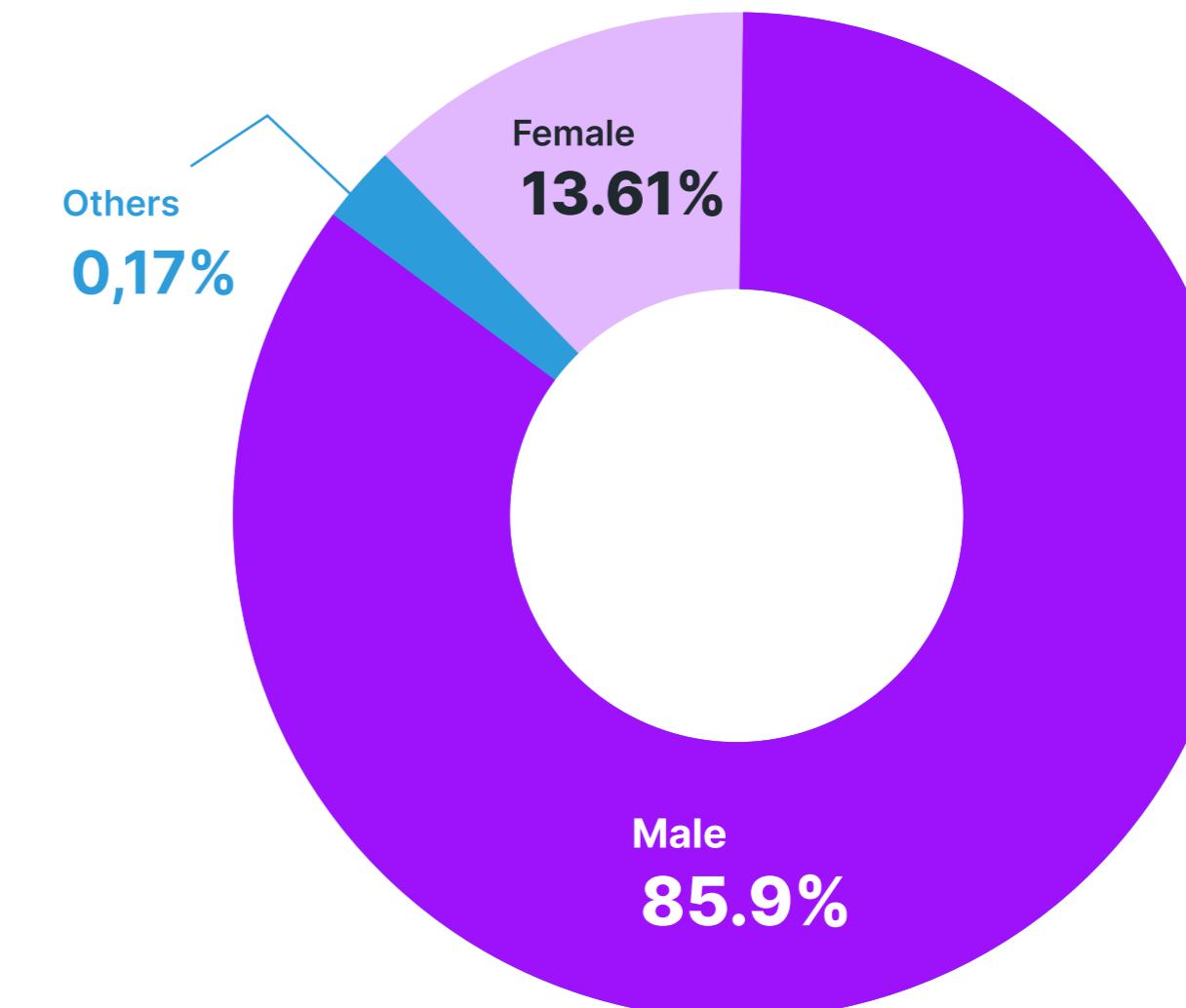
The growing interest of young people in Mozambique in the field is remarkable and it's reflected in the enthusiasm with which they actively shape the technological development scene in our country. The 18 to 24 age group stands out as the most expressive, representing half of the programmer population in the country, followed by the 24 to 34 age group, with 44%. To a lesser extent (3.6%), we find programmers aged between 35 and 49. It is important to note that only 1.3% have some form of disability.

The survey revealed significant data on the gender composition of Mozambique's technology community. According to the results, 13.61% of programmers are women, while the vast majority, or 85.9%, are men. These figures point to a notable increase in gender diversity in this field. In addition, the data also showed that 68.59% of programmers are students, suggesting a growing interest in technology in the country.

What are age demographics?



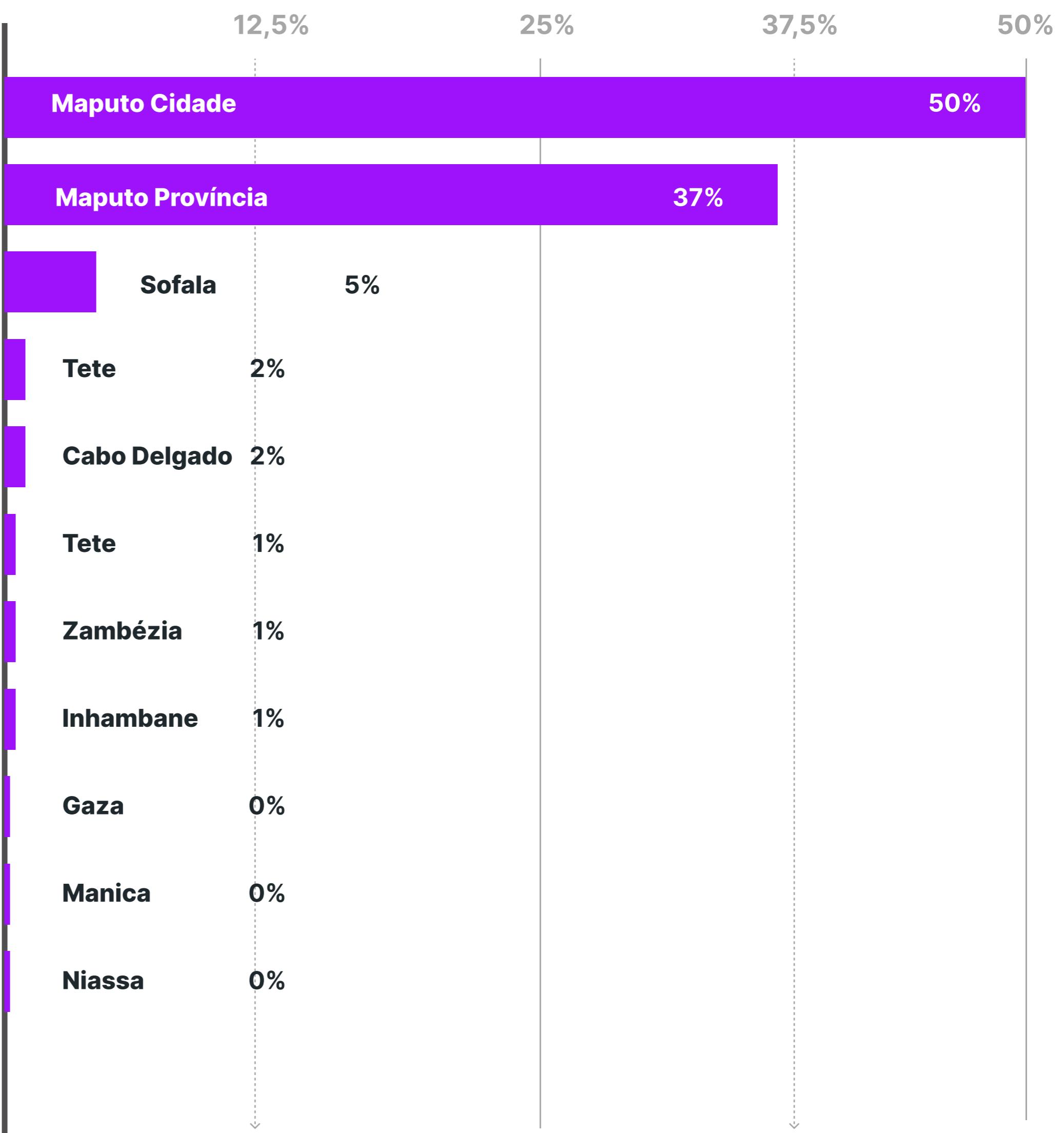
What is the gender distribution?



Demographic Group

The results indicate that Maputo City stands out as a technological center, with 50% of the programmers living there. On the other hand, around 37% of programmers are located in Maputo Province (Matola). In addition, Sofala Province also stands out as a point of interest for the community of programmers located in this region.

What are the demographics by city?



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How developers learn to code

There are various methods for learning to program, with Video on Demand (VoD) platforms being the most preferred. YouTube stands out with over 34.89%, followed by Udemy and LinkedIn Learning, with 20% and 9%, respectively. Although VoD is the main choice for programmers to improve their skills, it is at school (University, Institute, or Secondary School) where many of them learn to program.

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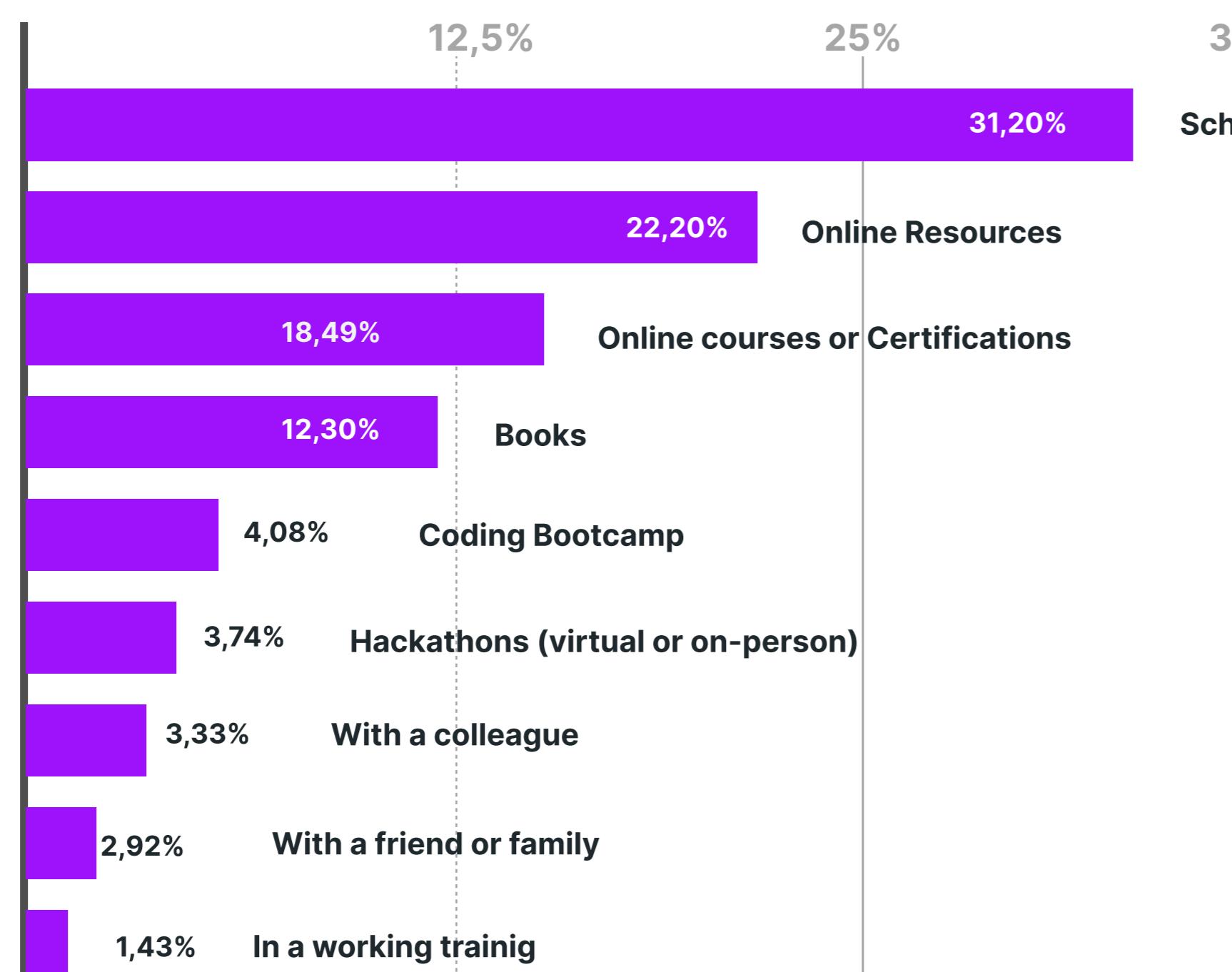
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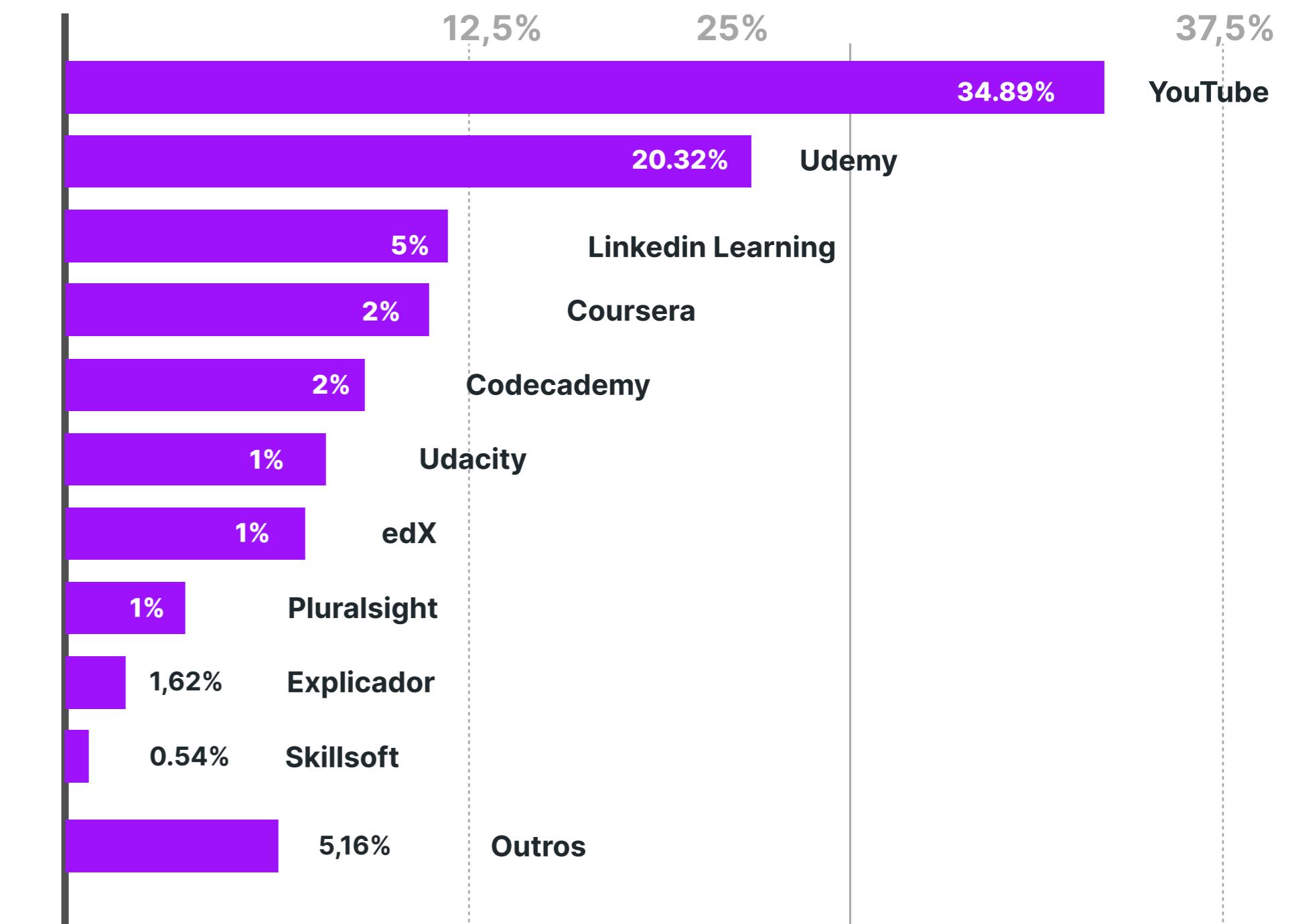
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Resources used to learn programming



Channels and platforms used to learn to program.



Connectivity

This section explores insights into Internet access, the technological infrastructure available, and the working environment of programmers.

Connectivity

Access to Internet and Providers

The survey showed that the majority of developers (93.84%) have regular access to the internet, of which 40.13% use Movitel as their main internet provider, and a quarter use Vodacom, with webmaster in last place with 0.5% of the market.

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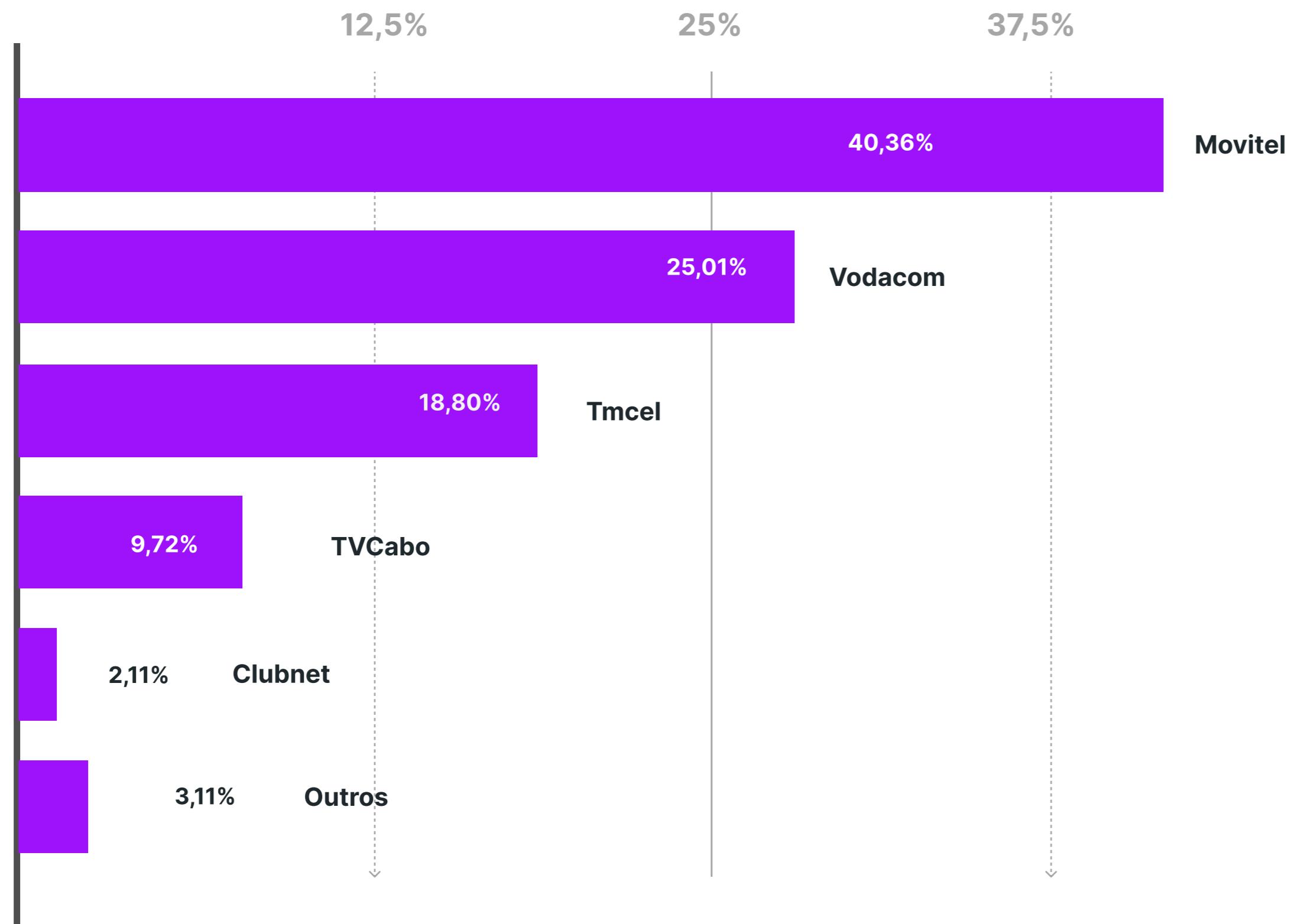
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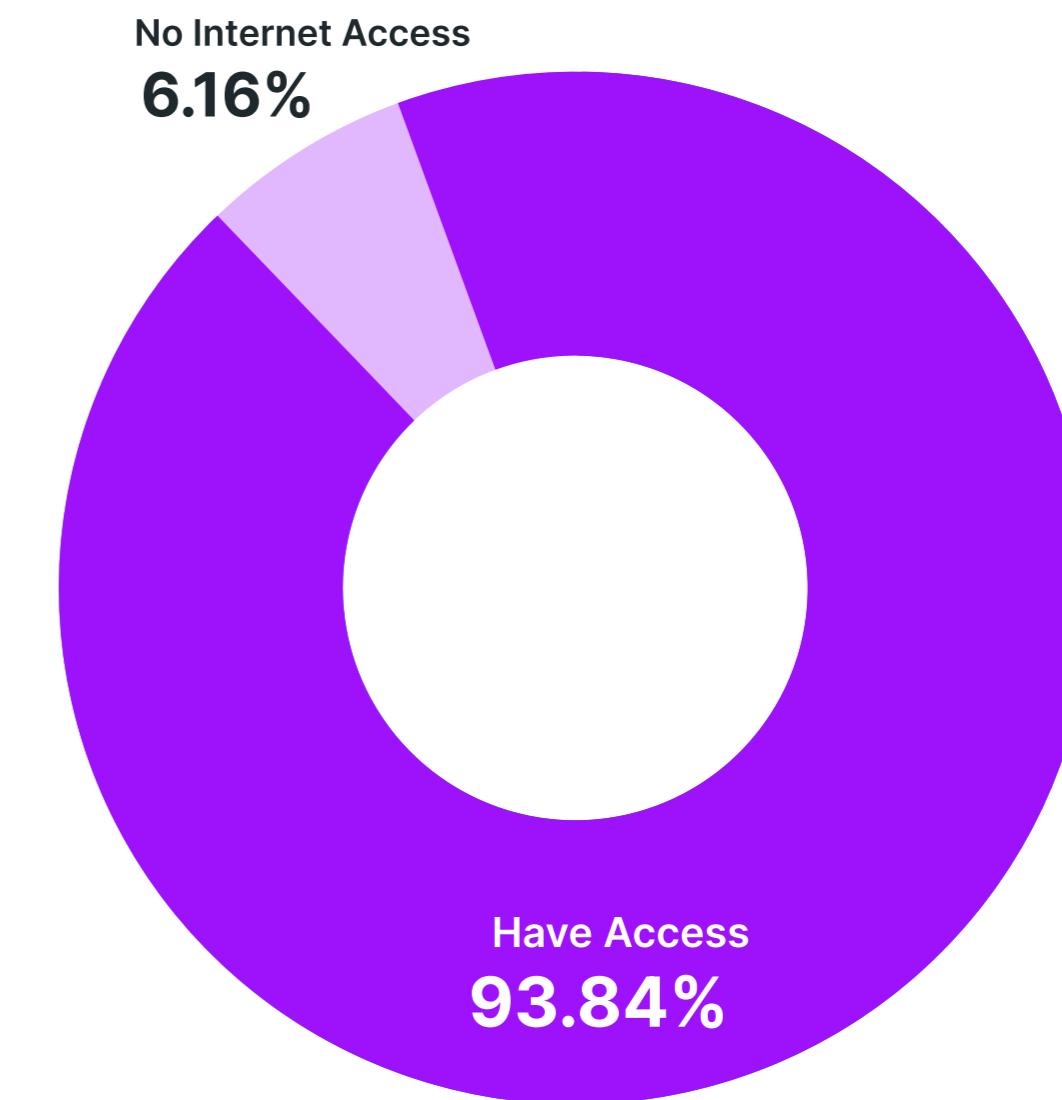
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What are the developers' main internet providers?



Do you have regular access to the internet?



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Connectivity

Devices and Operating Systems

When it comes to the device and operating system, remarkably, 71.72% of developers choose to use computers in their workflow.

With 85.36% of computer users choosing Windows. The Linux operating system is the second most popular option with 7.57%.

MacOS is adopted by 6.25% of developers. The smartphone comes in second as the device used by developers in Mozambique with 28.11% of users.

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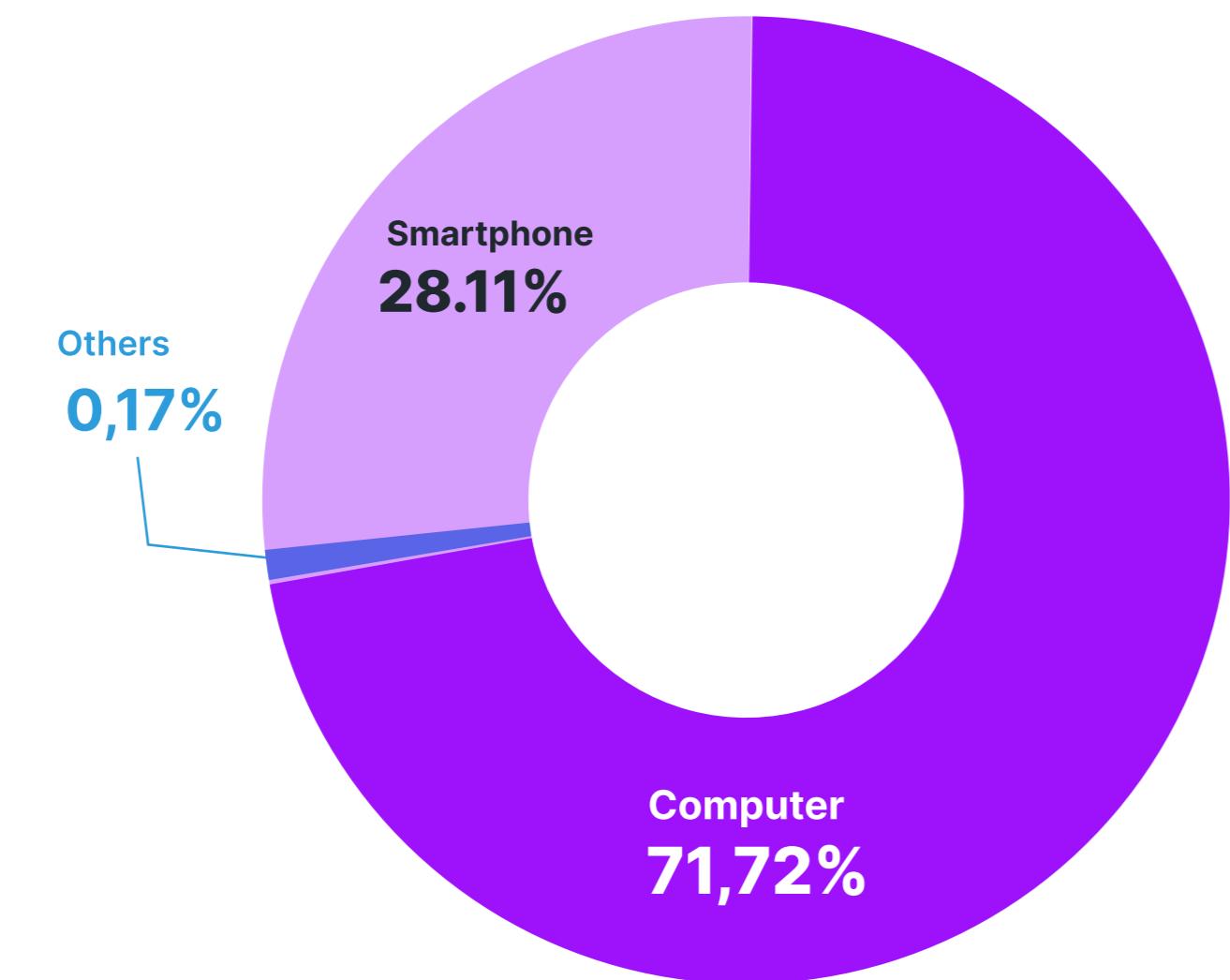
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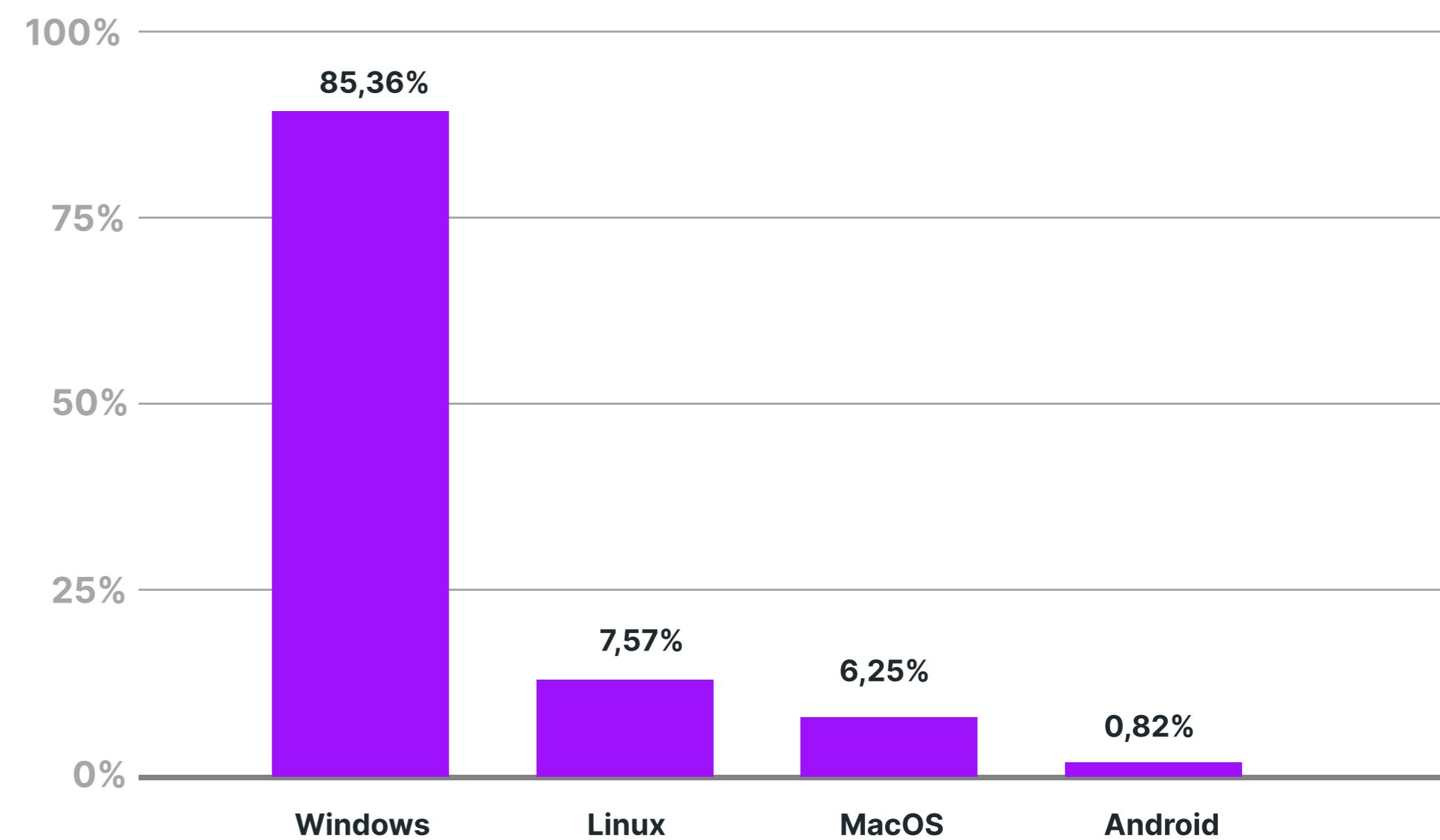
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What device do you use to access the internet?



What are the developers' main operating systems?

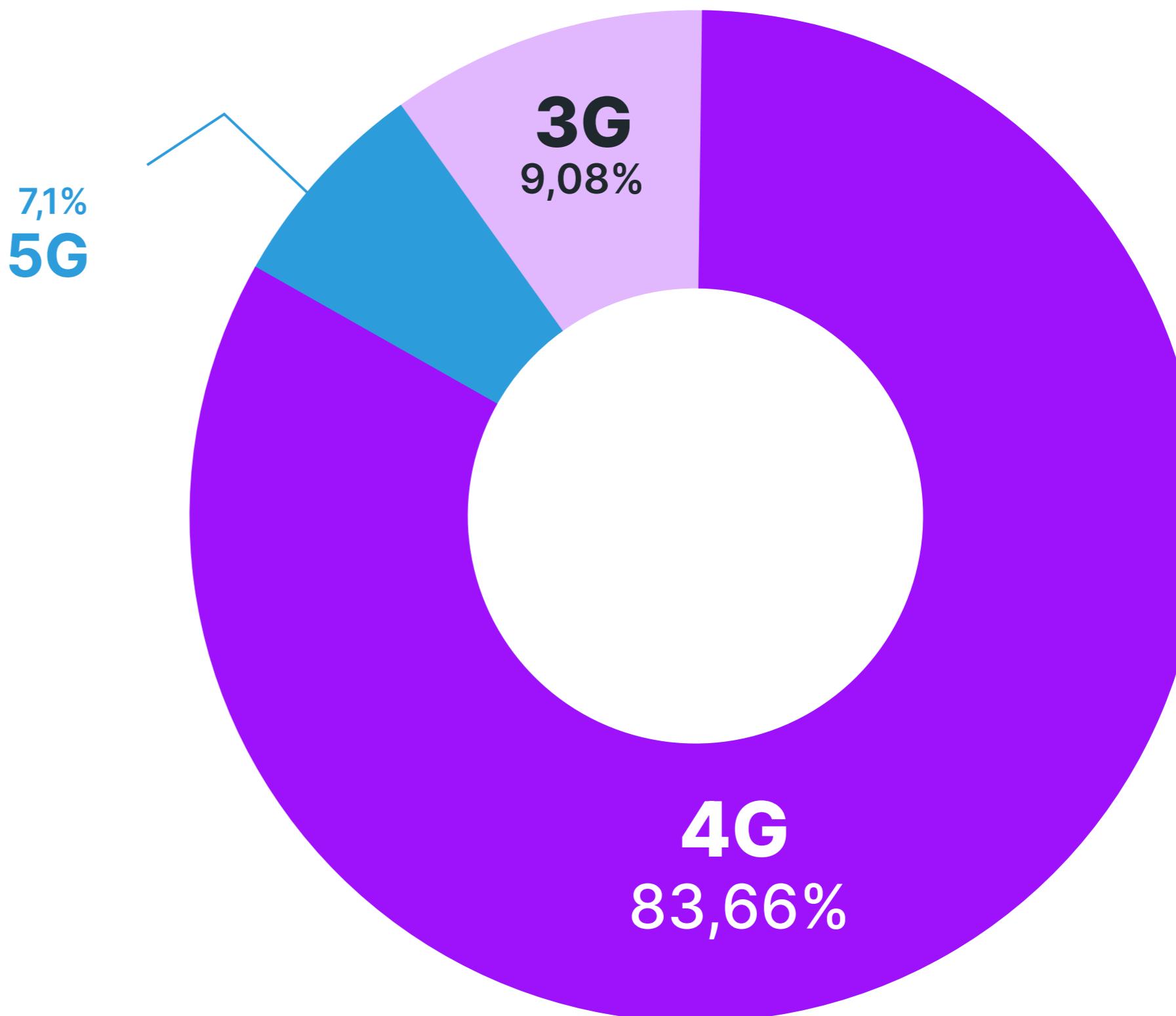


Connectivity

Internet Quality

As mentioned earlier, many of the resources and/or platforms present in the developers' workflow are connected to the internet, which makes the quality of the connection a relevant factor. Surprisingly 83.66% of developers have access to 4G internet, and 9.08% are connected to 3G internet, although this is an option with greater coverage compared to 4G and 5G.

Quality of internet connection.



Development

In this section, explore insights specific to developers. Discover their skills, favourite programming languages, development platforms and the challenges they face on a daily basis. Delve deeper into the world of developers in Mozambique and learn about their experiences and perspectives.

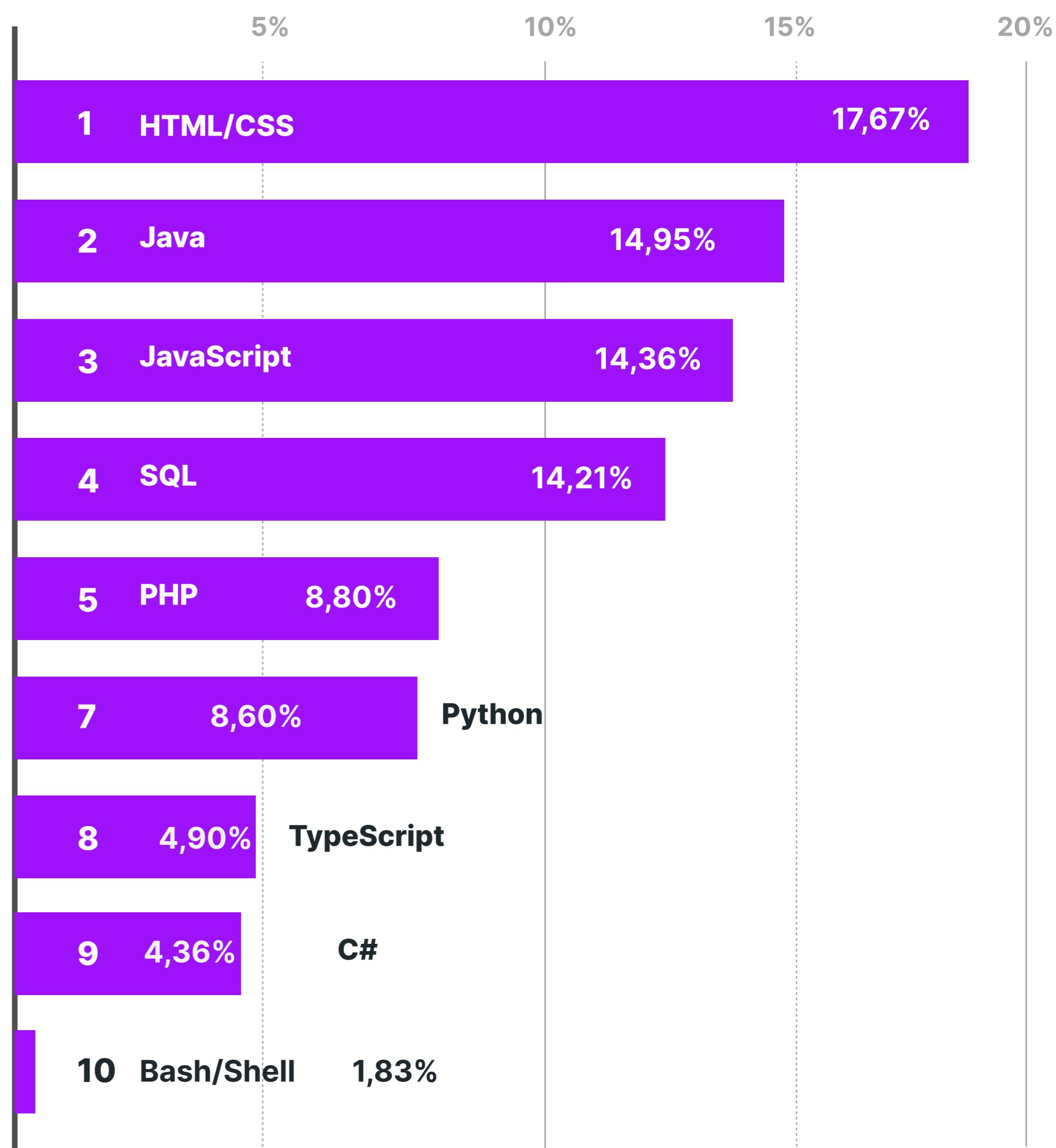
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Programming Languages

Java is the most used programming language by developers in Mozambique. More than 14.95% of programmers use Java, compared to approximately 8,60% who use Python. On the other hand, Ruby is the programming language least adhered to by Mozambicans.

In markup languages, HTML/CSS dominates with around 18% of developers adhering to it.

What programming, scripting and/or markup languages are used?

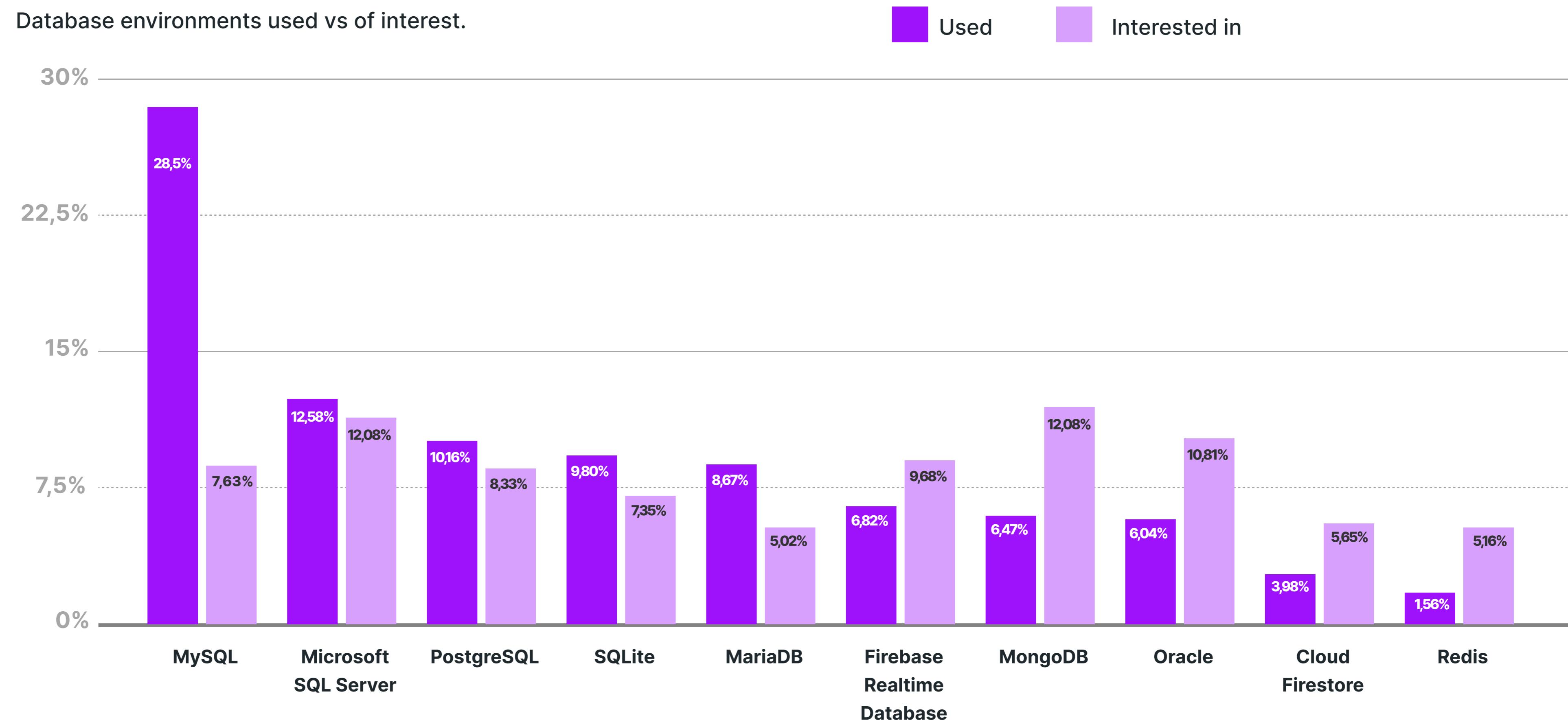


Development

Data Base Systems

The majority of developers, around 28.5%, use MySQL, and 12% use Microsoft SQL Server preferentially in their development activities, although there is intense interest in learning to work with database systems such as MongoDB, Oracle, and/or Firebase Realtime Database.

Database environments used vs of interest.

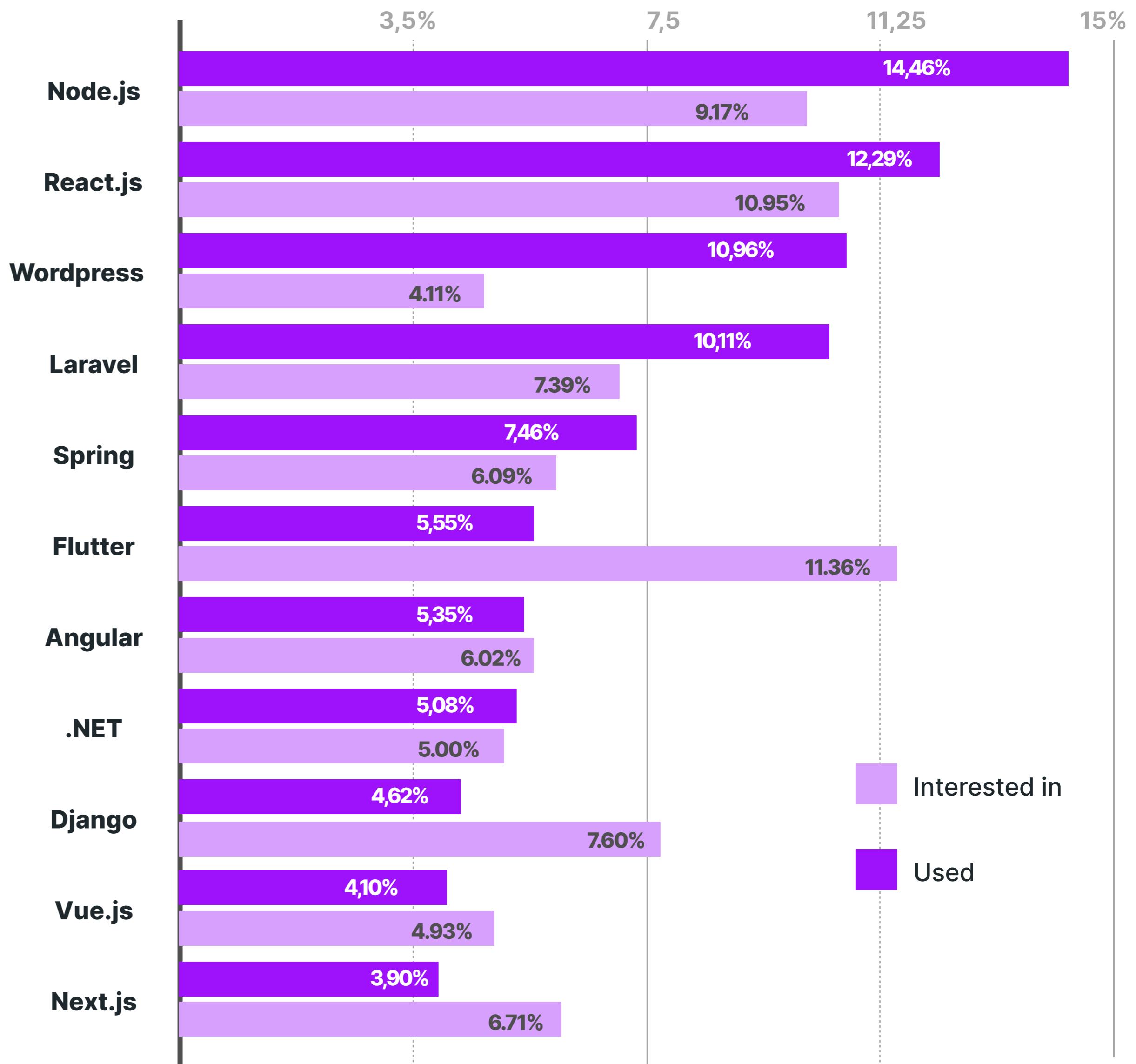


Development

Frameworks and Platforms

Node.js with 14% and React.js 12% are at the forefront as the platform and framework most used by Mozambican developers. Despite not being a framework, the CMS WordPress has been widely used to build websites in Mozambique, with more than 10% of developers developing projects using it.

Web frameworks and technologies used vs with interest.



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How developers seek for help

How do developers proceed when they encounter an obstacle?

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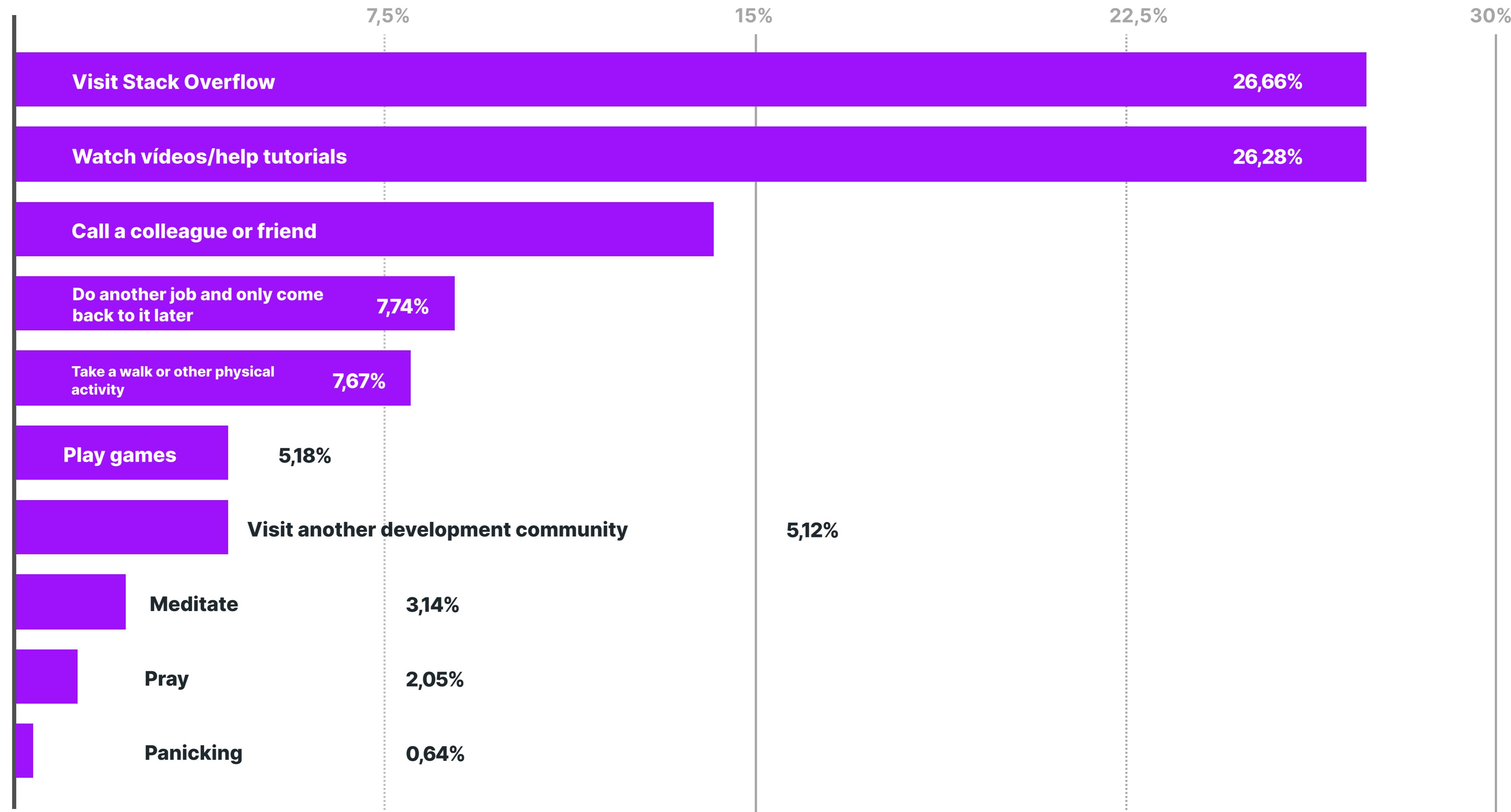
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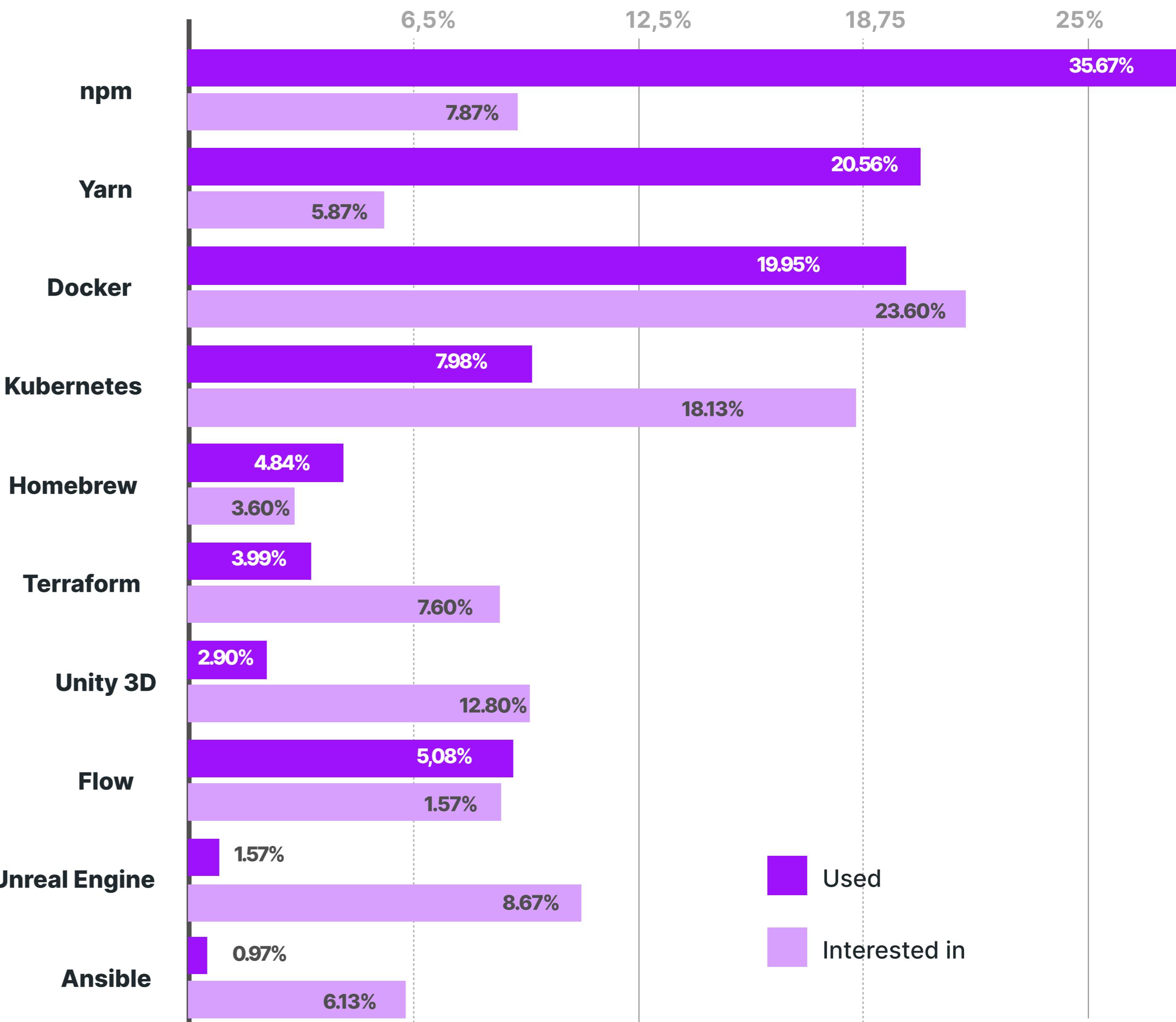
Services and Tools

In this section, you will gain insights into the tools and services used by developers on a day-to-day basis, as well as their interests with a view to developing their skills, including their interest in emerging technologies.

Development Tools

There are various tools and technologies that developers have used. The most widely used development tool is npm, with around 35% of developers using it. This is not surprising, given that Node.js (the most used platform) and npm are closely related tools in the JavaScript ecosystem and generally go hand in hand when developing applications. On the other hand, Docker and Kubernetes are the tools that Mozambican developers most want to explore.

What development tools they use vs are interested in?

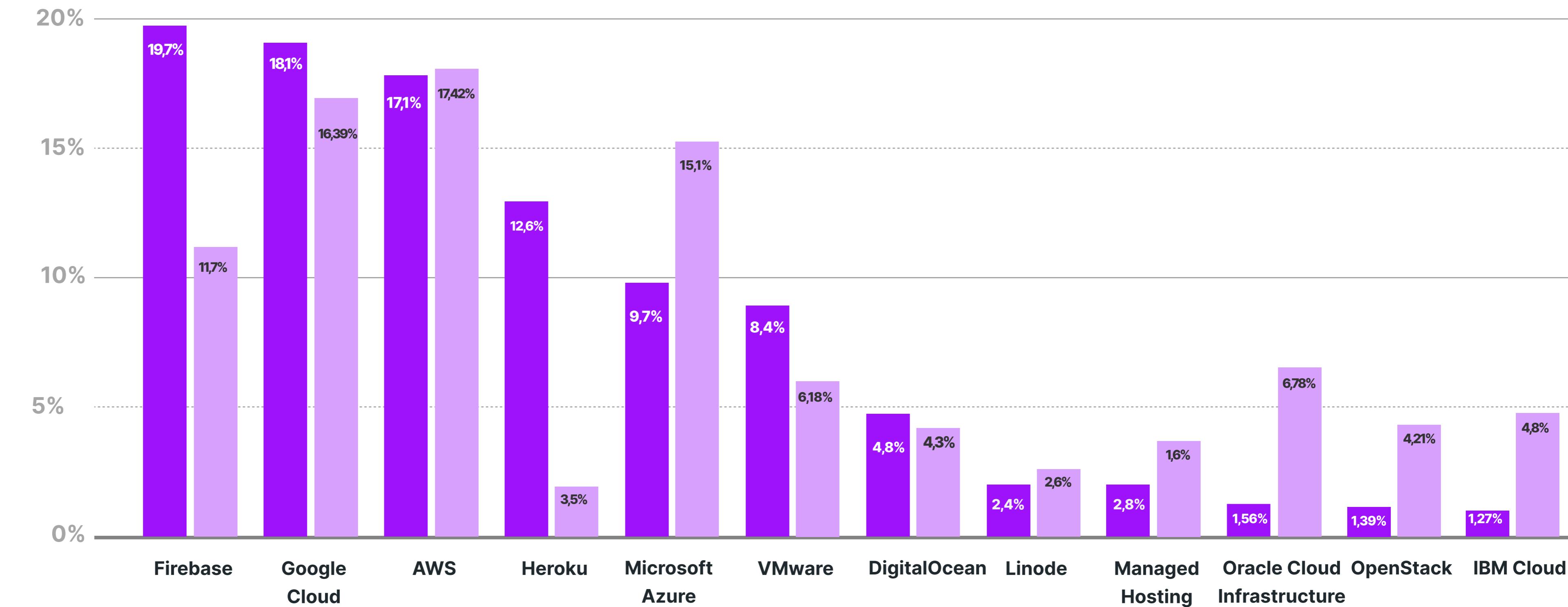


Cloud Platforms

Mozambican developers have extensively adopted cloud environments for hosting applications and various services. In contrast to traditional data centers, cloud environments offer developers greater flexibility in their daily operations. Firebase, a Google service, is at the forefront as the most used, with almost 20%, followed by Google Cloud and AWS with 18% and 17%, respectively.

Which cloud platforms used vs are interested in?

Interested in Used

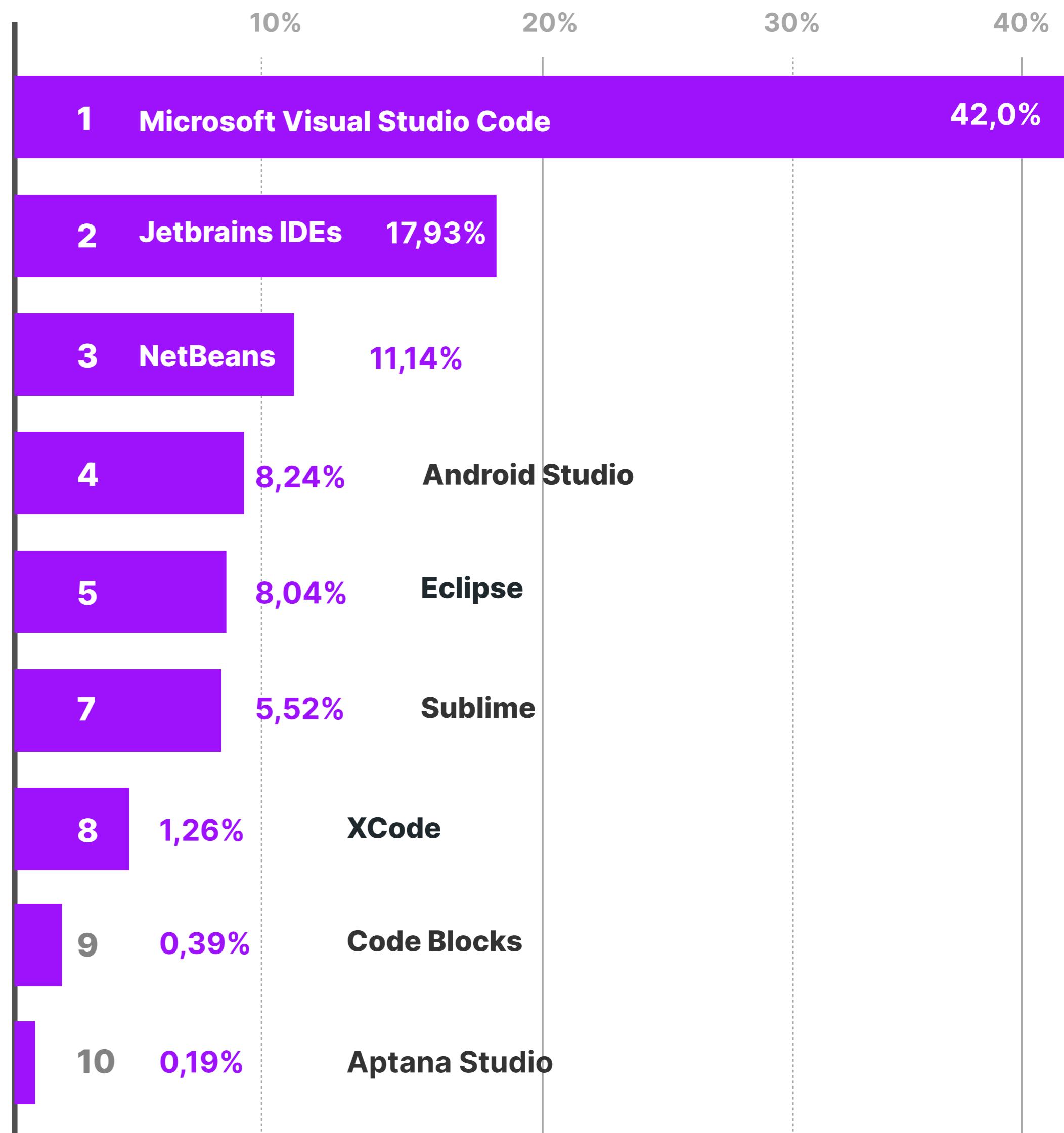


Services and Tools

Integrated Development Environment

Visual Studio Code stands out as the IDE of choice for Mozambican developers with an astonishing 42% of the market. Visual Studio Code has captured the hearts of the majority with its remarkable combination of simplicity and extensibility. On the other hand, JetBrains IDEs, known for their intelligence and efficiency, have won the loyalty of 17.93% of coding lovers. The JetBrains family, with its variety of specialized tools (PHPStorm, PyCharm, etc.), has proven to be a formidable competitor in the ever-evolving world of software development.

Which IDEs (Integrated Development Environment) do developers use the most?

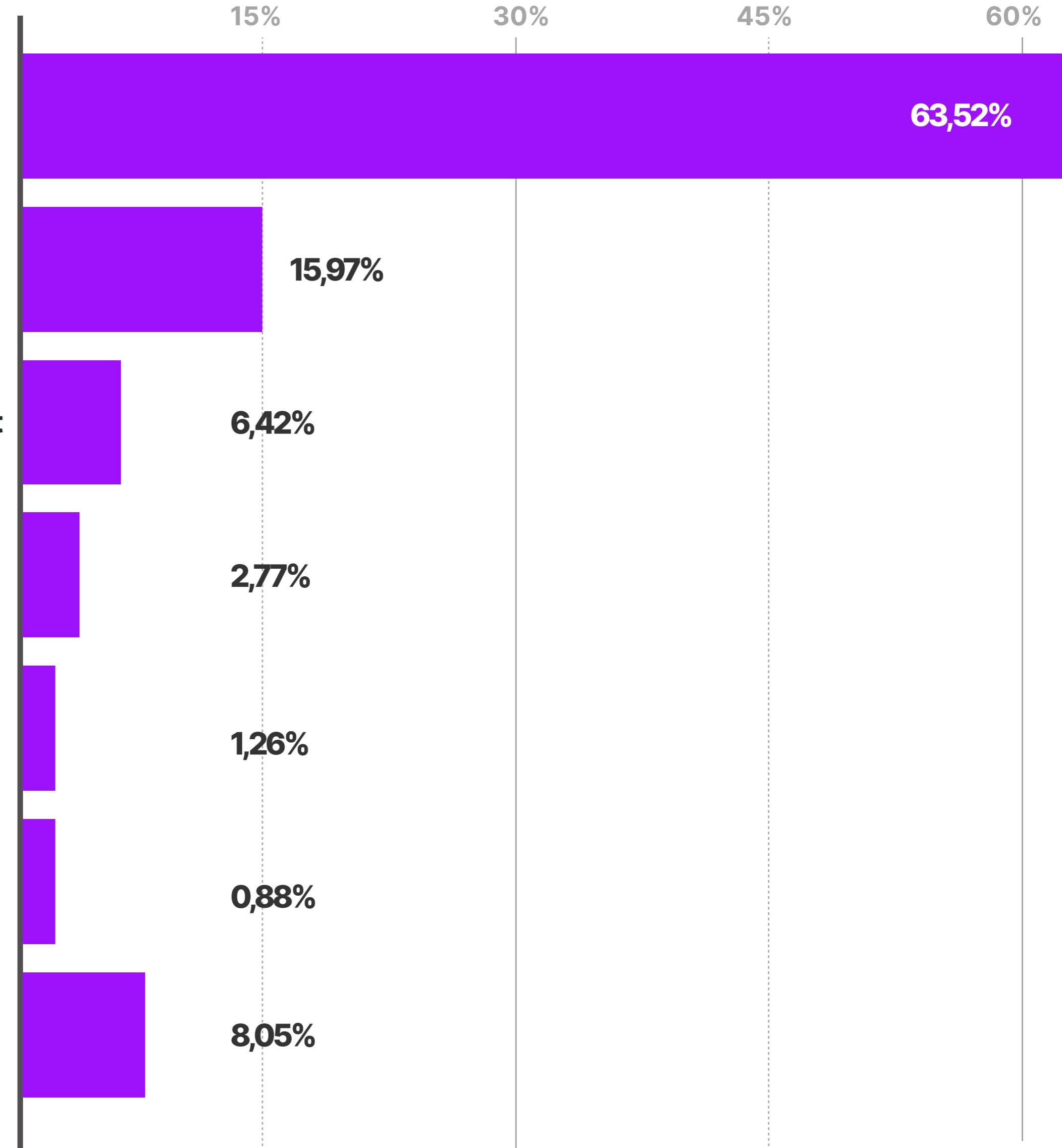


Services and Tools

Versioning Control Platforms

Among cloud version control platforms, GitHub stands out with more than 63.52% of the developer community active on the platform, while Gitlab stands out as the most popular platform for on-premise version control.

Which Versioning Control platforms do developers use the most?



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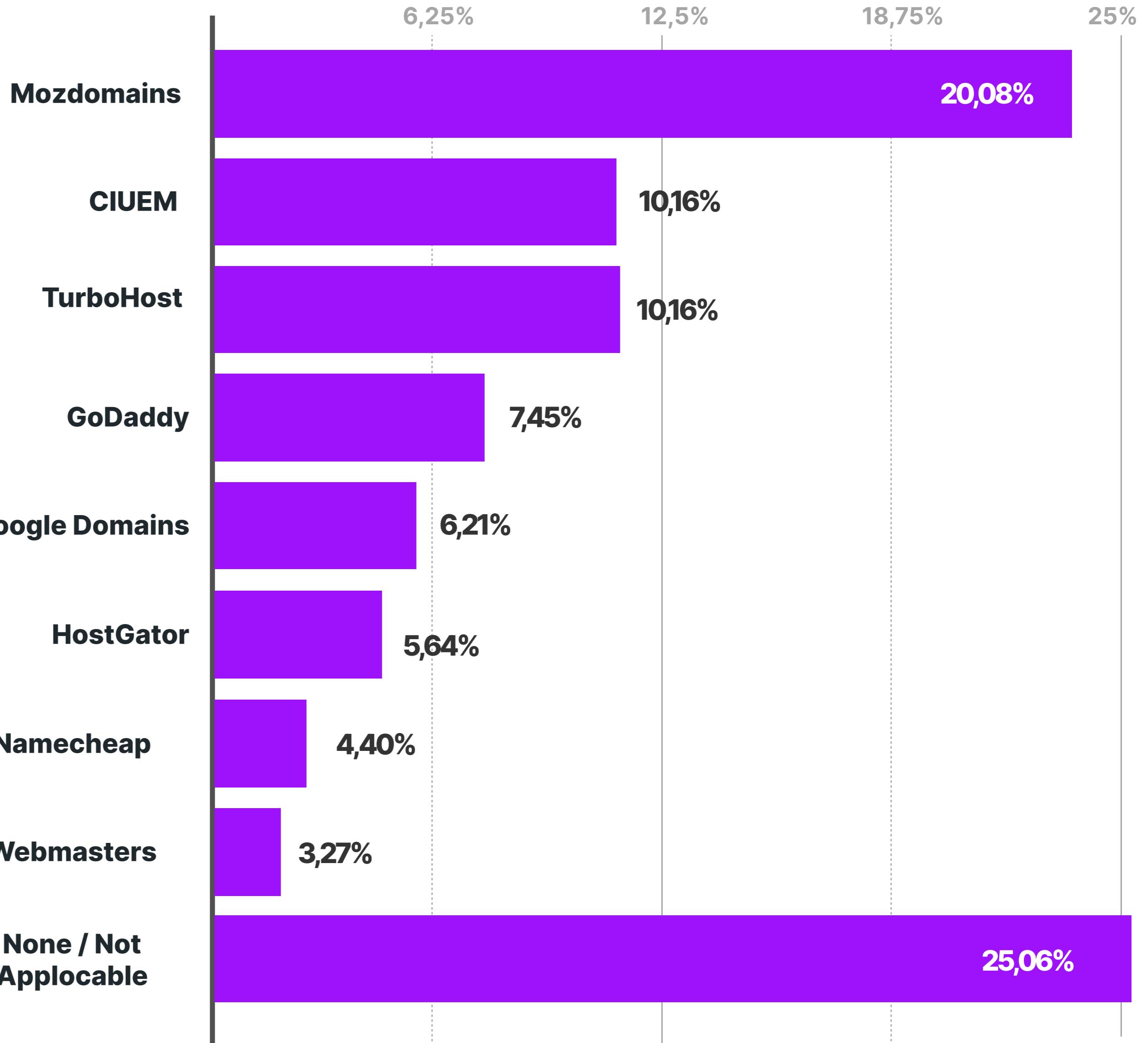
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Platforms for hiring domains

Regarding domain contracting, it was noted that the majority (25%) of developers do not deal with domain contracting in their workflow. On the other hand, around 21% of developers said they use Mozdomains as their main platform. CIUEM and Turbohost are also some of the top choices for some developers.

Which Versioning Control platforms do developers use the most?



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Services and Tools

Emergent Technologies

Two distinct groups stood out in this survey, namely: those who have not made use of emerging technologies, which is the majority of developers, with 36.31%, against the group that already uses and has worked with these technologies, with 17.07% using the Internet of Things (IoT) and robotics. They have embraced the union between machines and data, working diligently to bring interconnected devices to life.

Although the majority don't use emerging technologies, 17.51% are interested in working with robotics and IoT. On the other hand, blockchain applications are of interest to around 12.34% of the community.

In this other group, 7.59% make use of cryptocurrencies such as Bitcoin. It is clear that part of the community has seen that emerging technologies are promising.

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Services and Tools

Emergent Technologies

Which of the following emerging technologies are developers interested in vs using.

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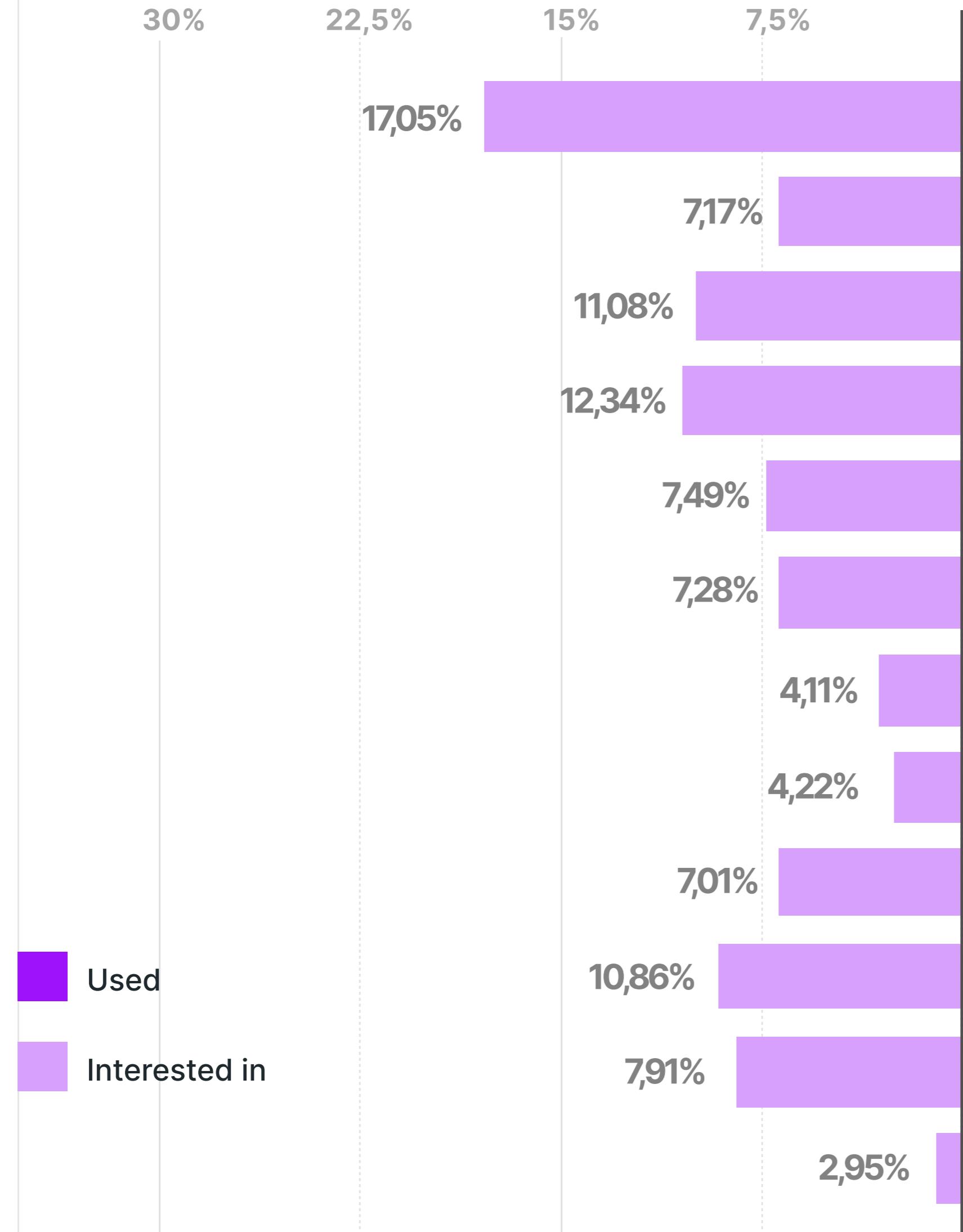
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Robotics and IoT

Computer vision

Cryptocurrencies (Ex: Bitcoin)

Blockchain applications other than cryptocurrencies

Drones

5G

Conversational platforms

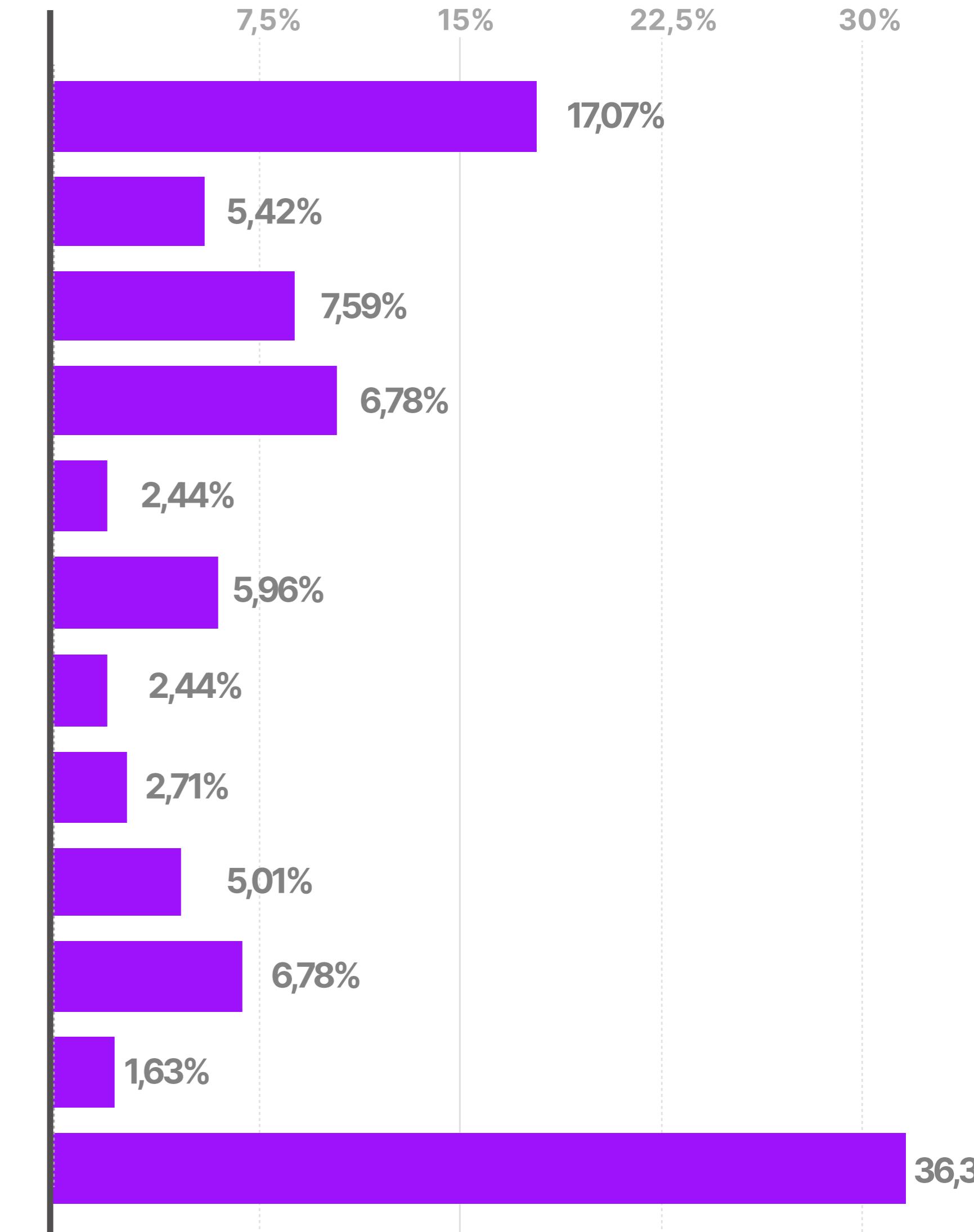
Augmented/Virtual Reality

Natural Language Processing

Generative AI

Quantum Computing

None



Employment

In this section, you will gain insights into issues related to your environment and way of working.

Professional Situation

The survey reveals a diversity of professional situations. The programmers' job market is favorable to self-employment, i.e. without being formally employed, which corresponds to 14.1% of developers. On the other hand, 43.4% of Mozambican programmers have permanent jobs, 33.5% are unemployed, and 8.9% are trainees.

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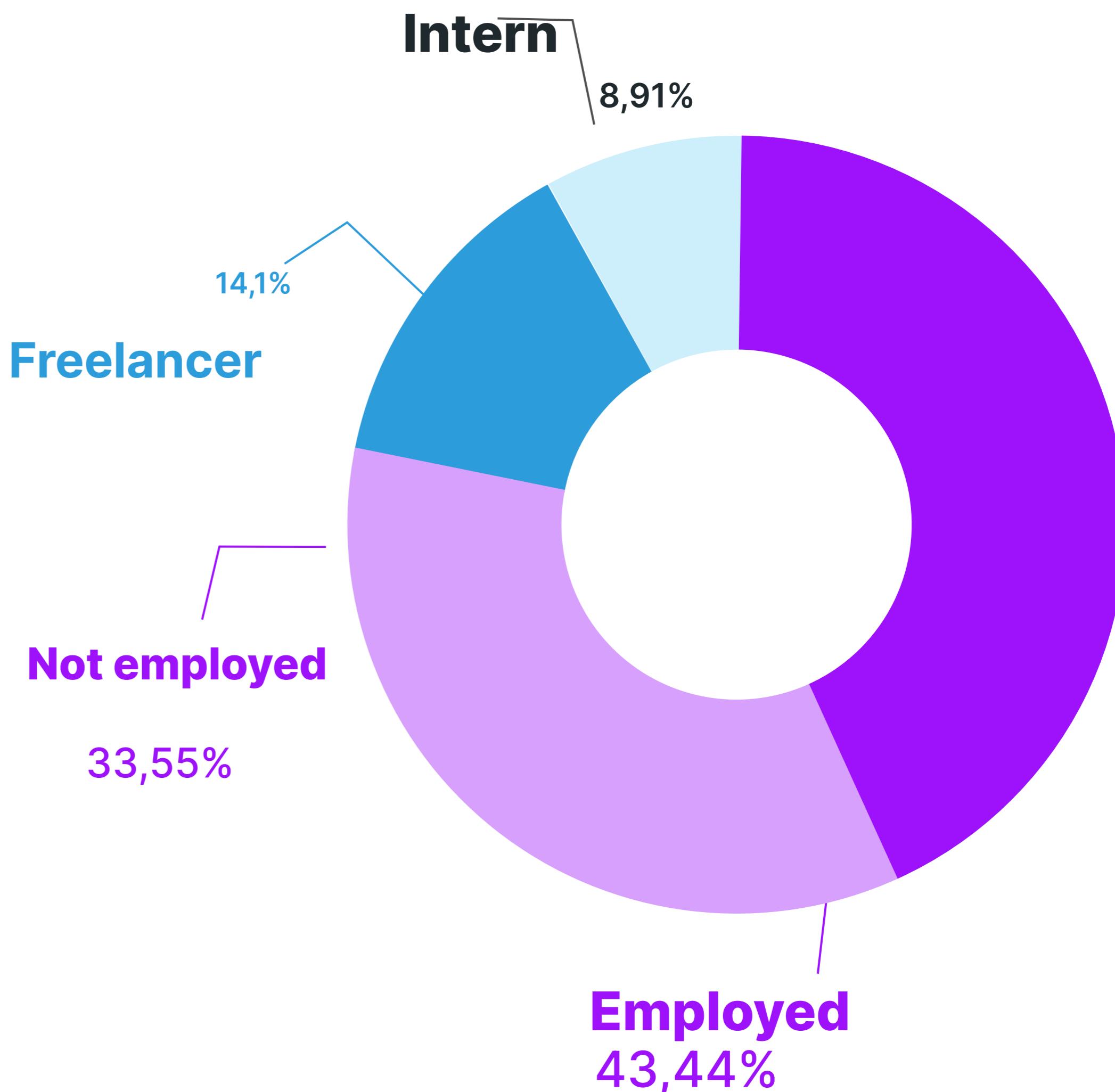
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What is the employment situation of the developers?



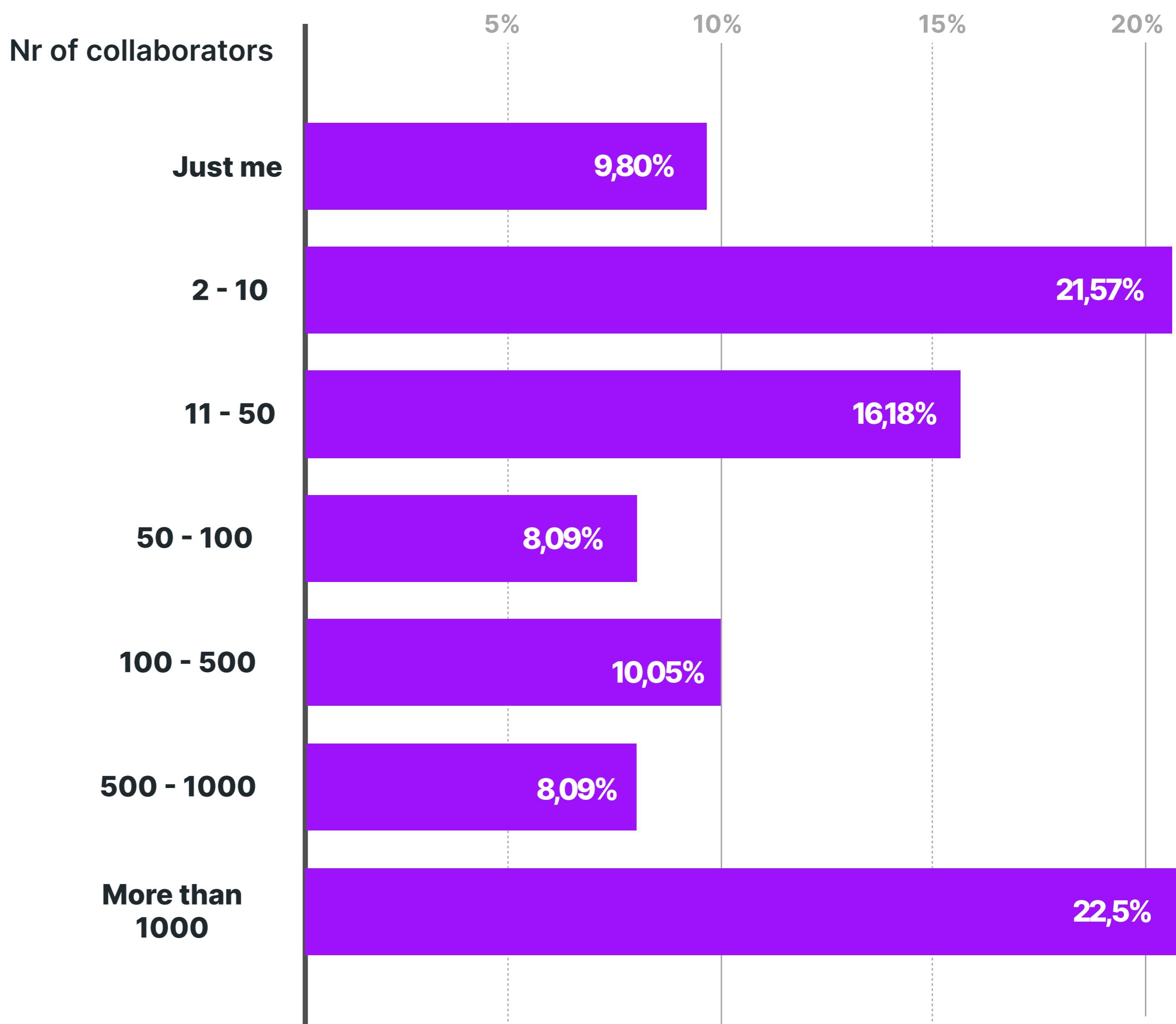
Employment

Company Size

Among developers, 22.5% are employed by companies with more than 1,000 employees. An interesting observation is that 21.6% of developers work for companies with 2 to 10 employees, highlighting the significance of startups and emerging businesses.

Notably, there is an equal distribution of developers, 8.1% each, in both medium-sized companies with 50-100 employees and larger ones with 500-1,000 employees. This suggests an equitable distribution of opportunities across businesses of varying sizes. This diversity of situations plays a crucial role in cultivating a robust and diverse software development ecosystem in Mozambique.

Company size distribution.

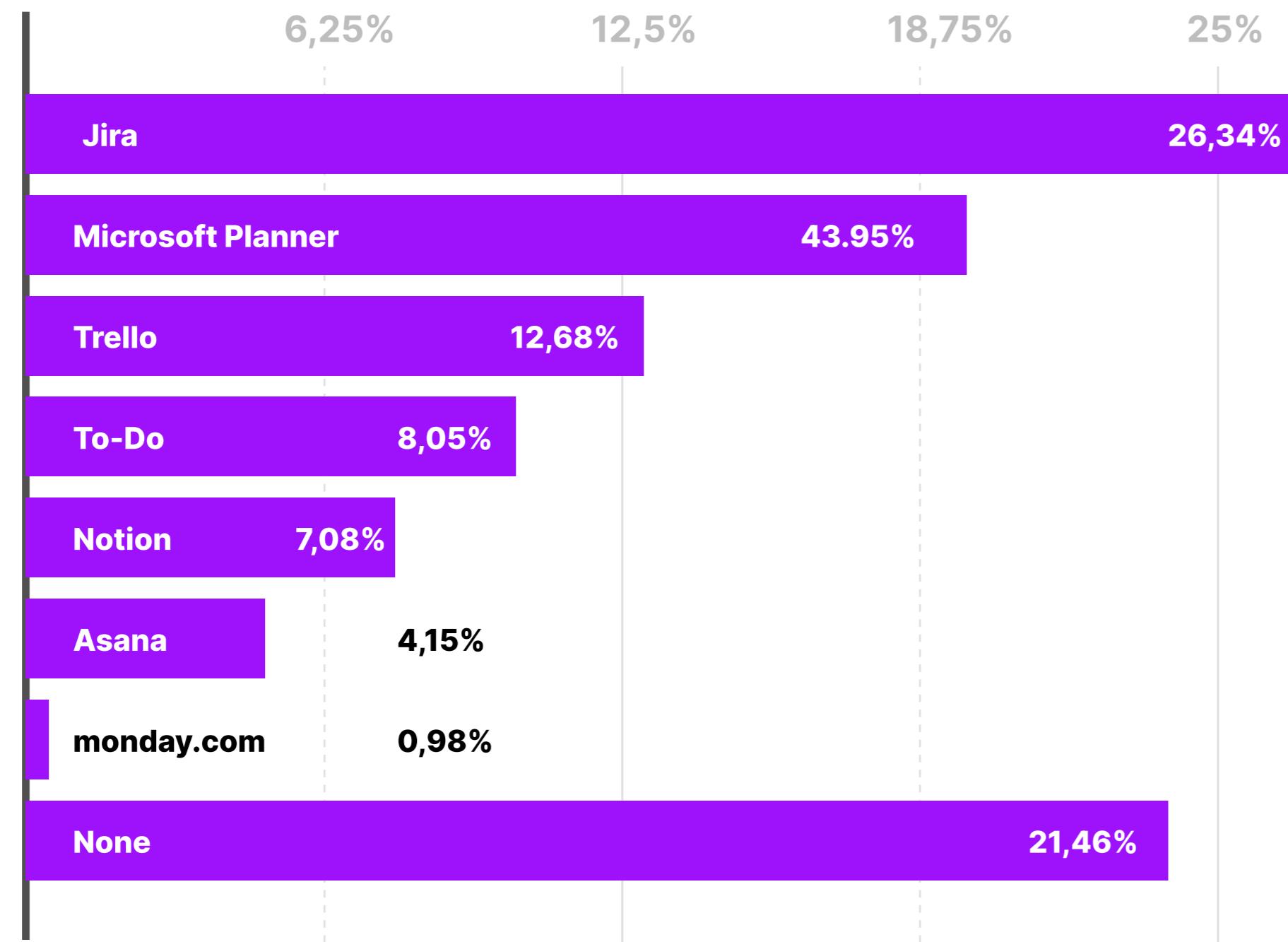


Employment

Tasks Management

Task management has significantly improved in recent times, thanks to the abundance of available tools. Leading the way on desktops are the Jira and Microsoft Planner platforms, with Jira being the choice of 26.34% of users, closely followed by Microsoft Planner at 12.68%. Interestingly, over a fifth of developers opt not to utilize any task management tool.

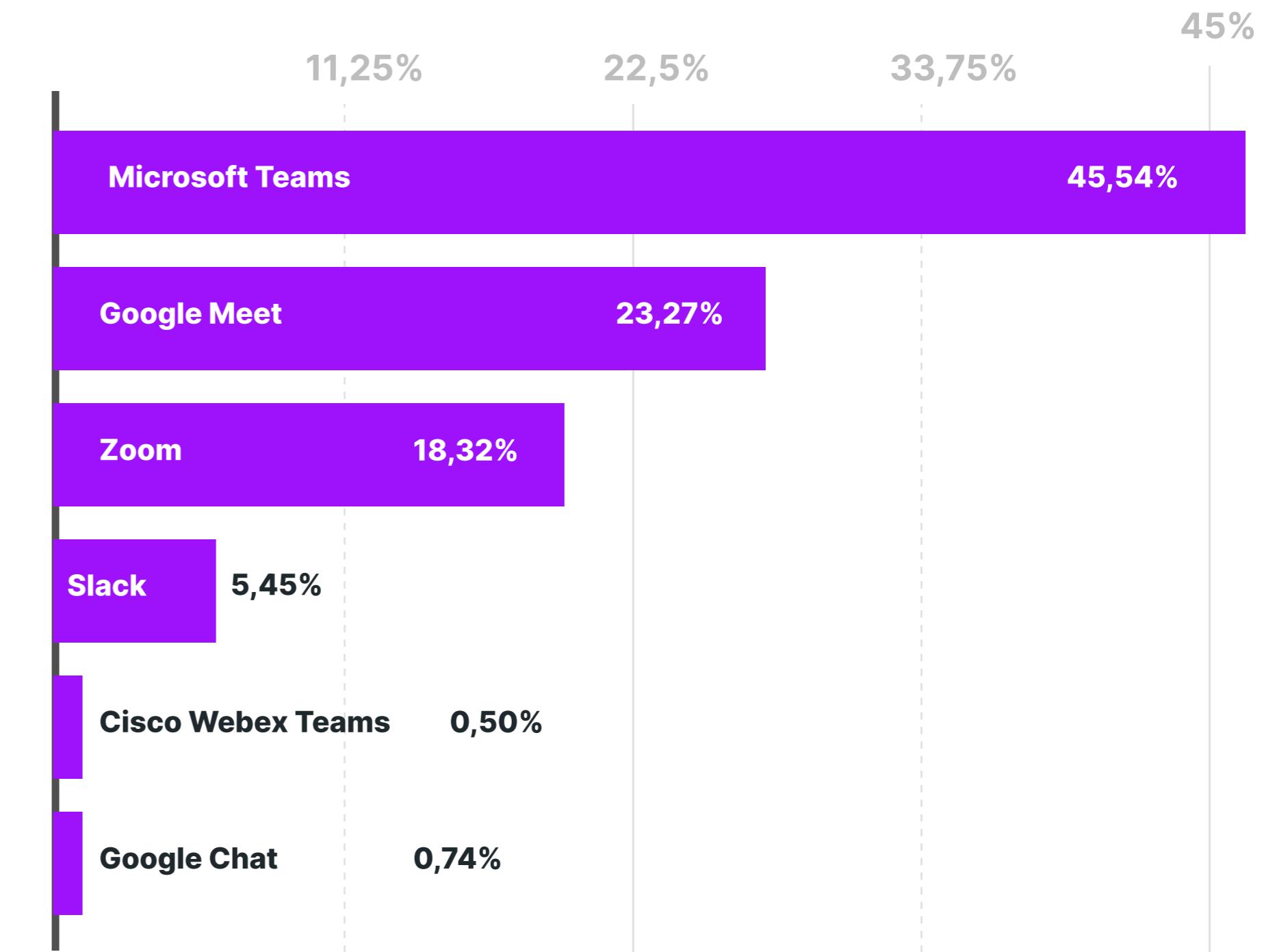
What tools do developers use for task management?



Employment Status

When it comes to the inevitable virtual meetings, the most used tools are undoubtedly Microsoft Teams, with 45.54%, and Google Meet, with 23.27%, which are widely used daily. WhatsApp, a commonly used tool for everyday communication, doesn't rank high as a choice for work and collaboration. The data indicates that less than 1% of users prefer it for these purposes.

What tools do developers use for communication?



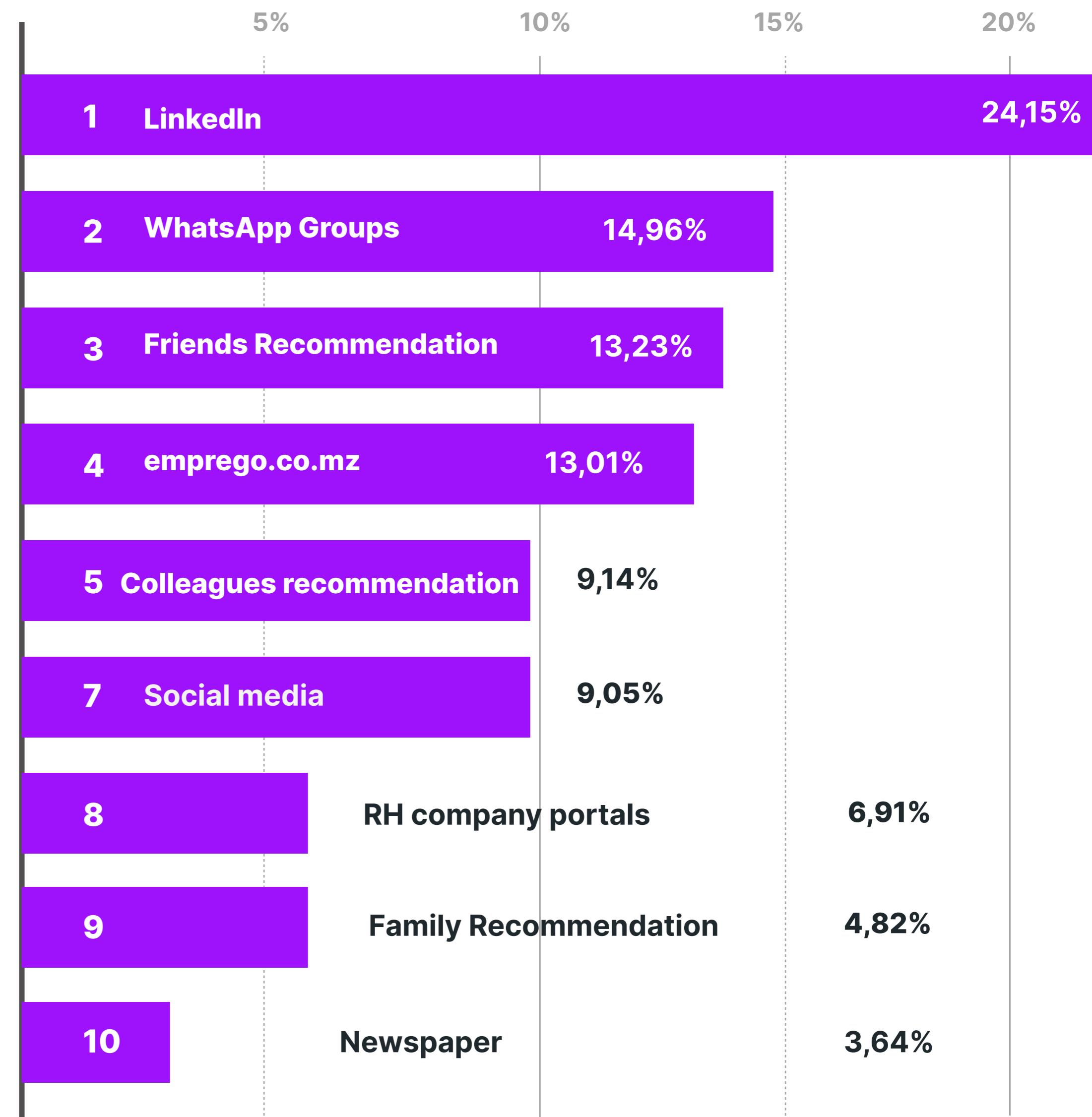
Employment

Platforms used to find job opportunities

Access to job opportunities in the programming field is easier these days. It is reported that 24.15% of professionals consider LinkedIn to be the platform they use most to look for a job.

LinkedIn, with its approach focused on networking and interaction, meets the needs of developers who are not only looking for opportunities but also want to expand their network of contacts and strengthen their professional presence online, and WhatsApp groups come in second with 14.96%.

What platforms do developers use to access job opportunities?



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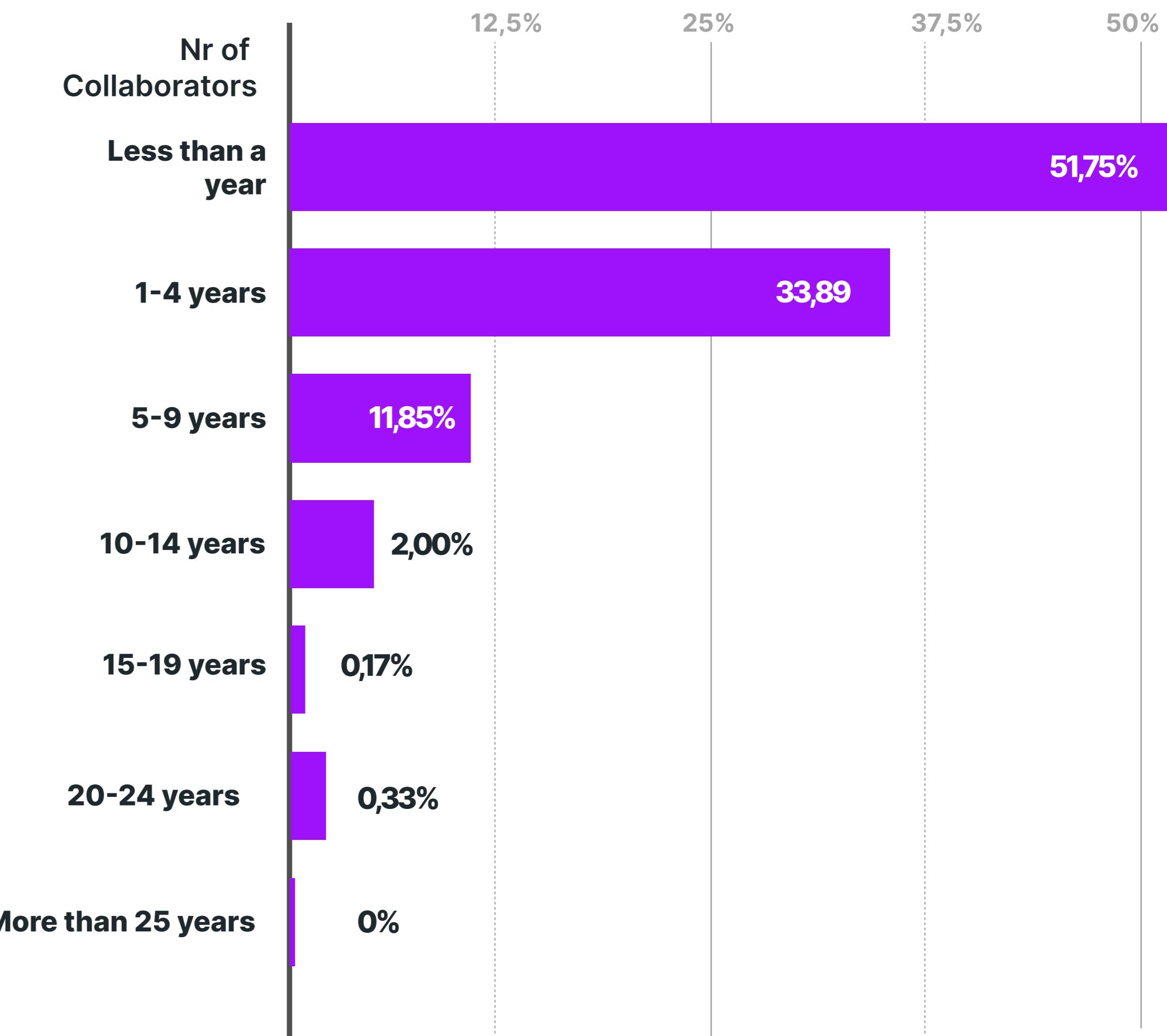
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Experience

The professional experience of the programmers offers insight into the unique trajectories that highlight the enrichment of the technological landscape in Mozambique. More than half of the programmers have between 1 and 4 years of experience. 33% have less than a year of experience, highlighting the constant influx of new talent onto the tech scene in Mozambique.

Of those who have been in the field longer, 11.85% have between 5 and 9 years of experience, and an even smaller proportion, 2.03%, have between 10 and 14 years of experience, without forgetting the veterans who have witnessed and shaped technological transformations, with between 20 and 24 years of experience.

Time spent working in development or ICT.



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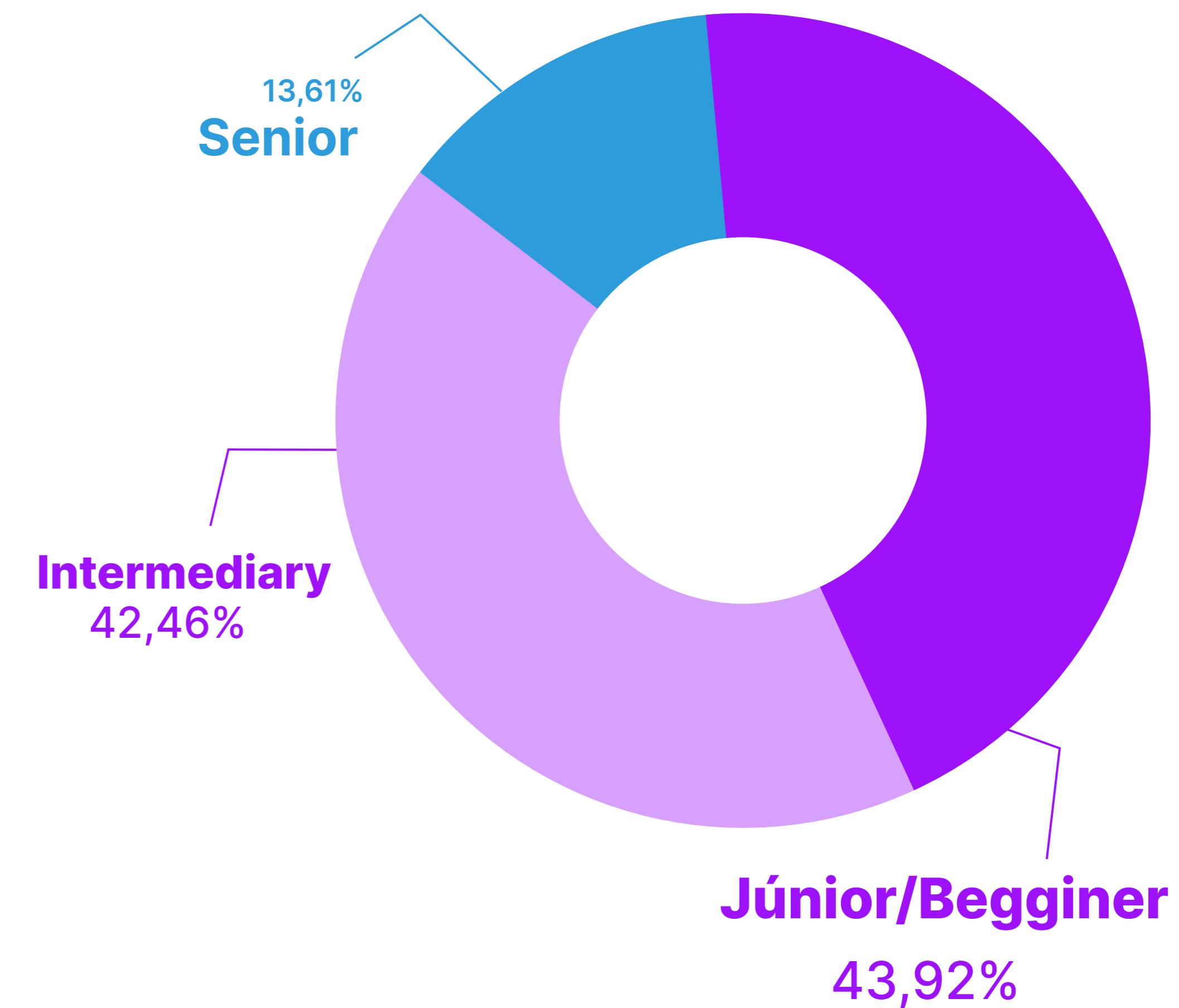
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Level

Nearly 44% of developers identify themselves as beginners. Next, with a solid knowledge base and practical experience, 42.46% are intermediate level. And 13.61% are Seniors, representing the leading experts in their respective fields.

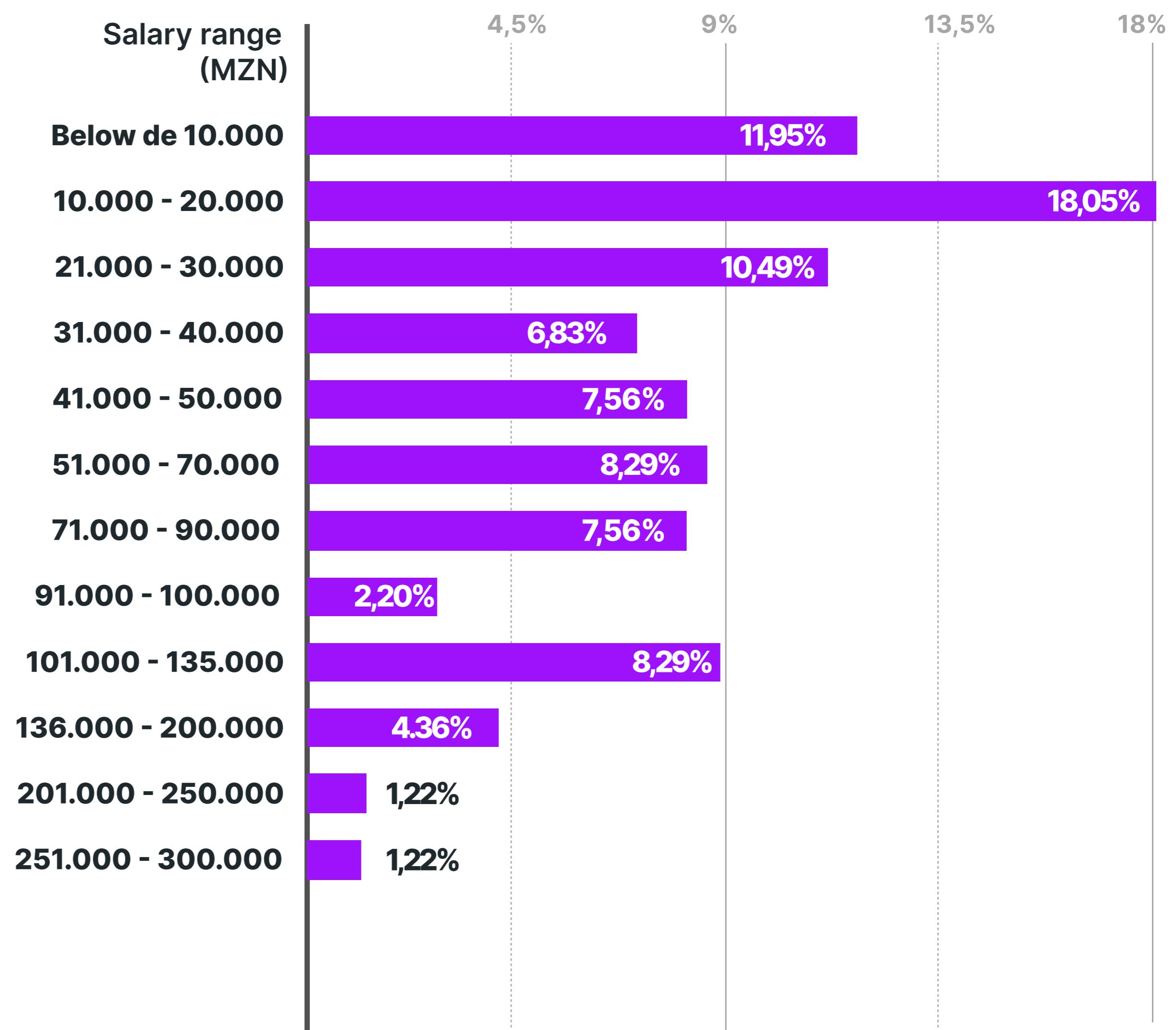
What level are the developers at?



Remuneration

The salary ranges are attractive for those who want to progress steadily in the field. 18% of developers earn between 10,000 and 20,000 meticals a month. 5% earn between 51,000 and 70,000. A further 7% earn between 41,000 and 90,000 a month, indicating an intermediate range of salaries that values consolidated skills and specialized knowledge. It's worth noting that 4% of developers fall within the salary range of 136,000 to 200,000 meticals per month. This suggests that higher salaries are attainable for those who have achieved a senior level of expertise. Only 11% receive less than 10,000 meticals a month.

What is the salary range of the developers?



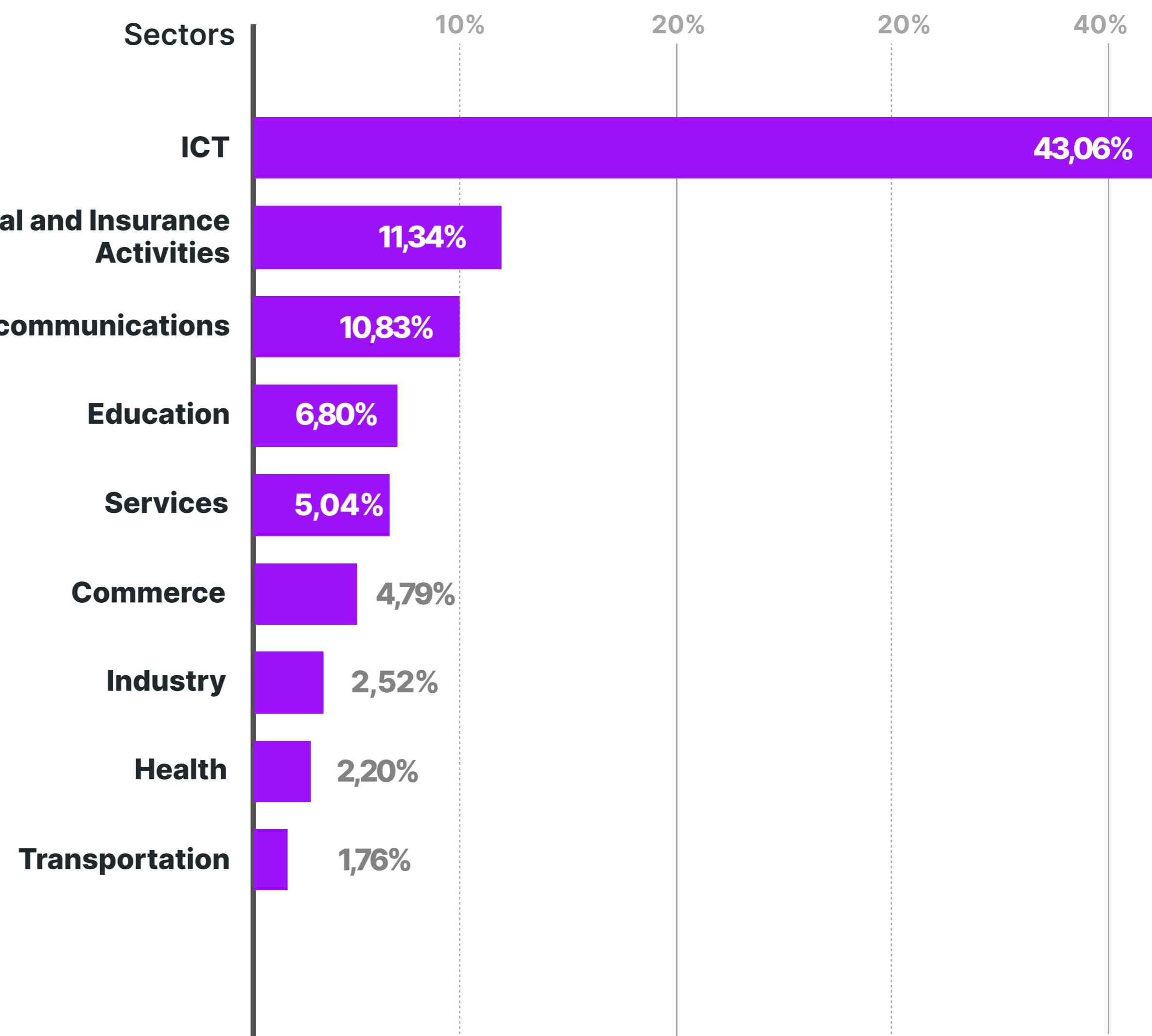
Employment

The sector in which the company operates

The diversity of the companies' areas of activity highlights a wide range of sectors that depend on the technological skills and innovation that developers bring to companies.

Around 43% are in the ICT sector, 11.34% are involved in financial activities. Next, 10% work in companies in the Telecommunications sector, highlighting the importance of connectivity and technological solutions in this field. A further 2% are in the Health and Logistics sectors.

What is the company's sector of activity?



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Non-technical skills

What non-technical skills would developers like to develop better?

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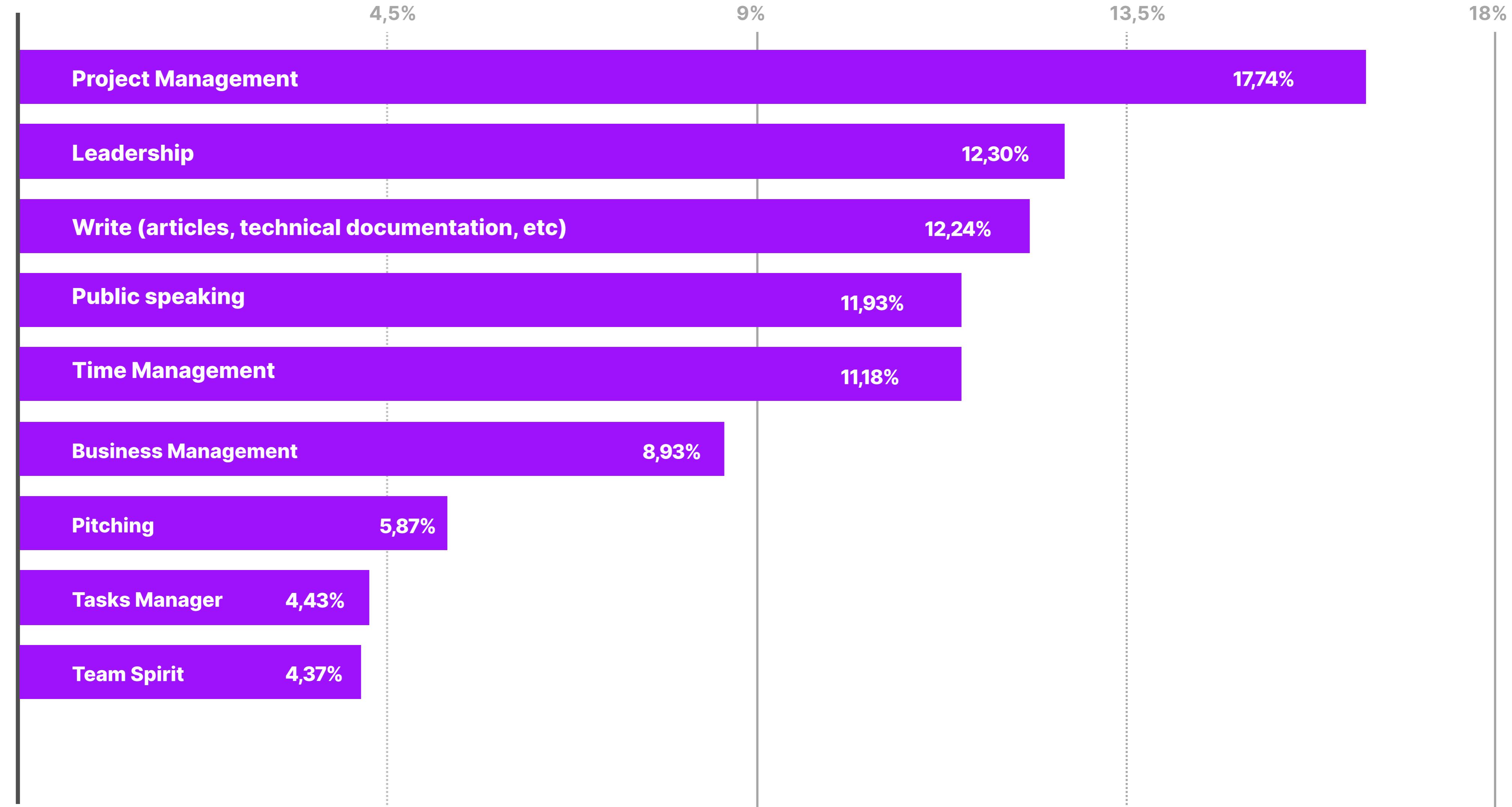
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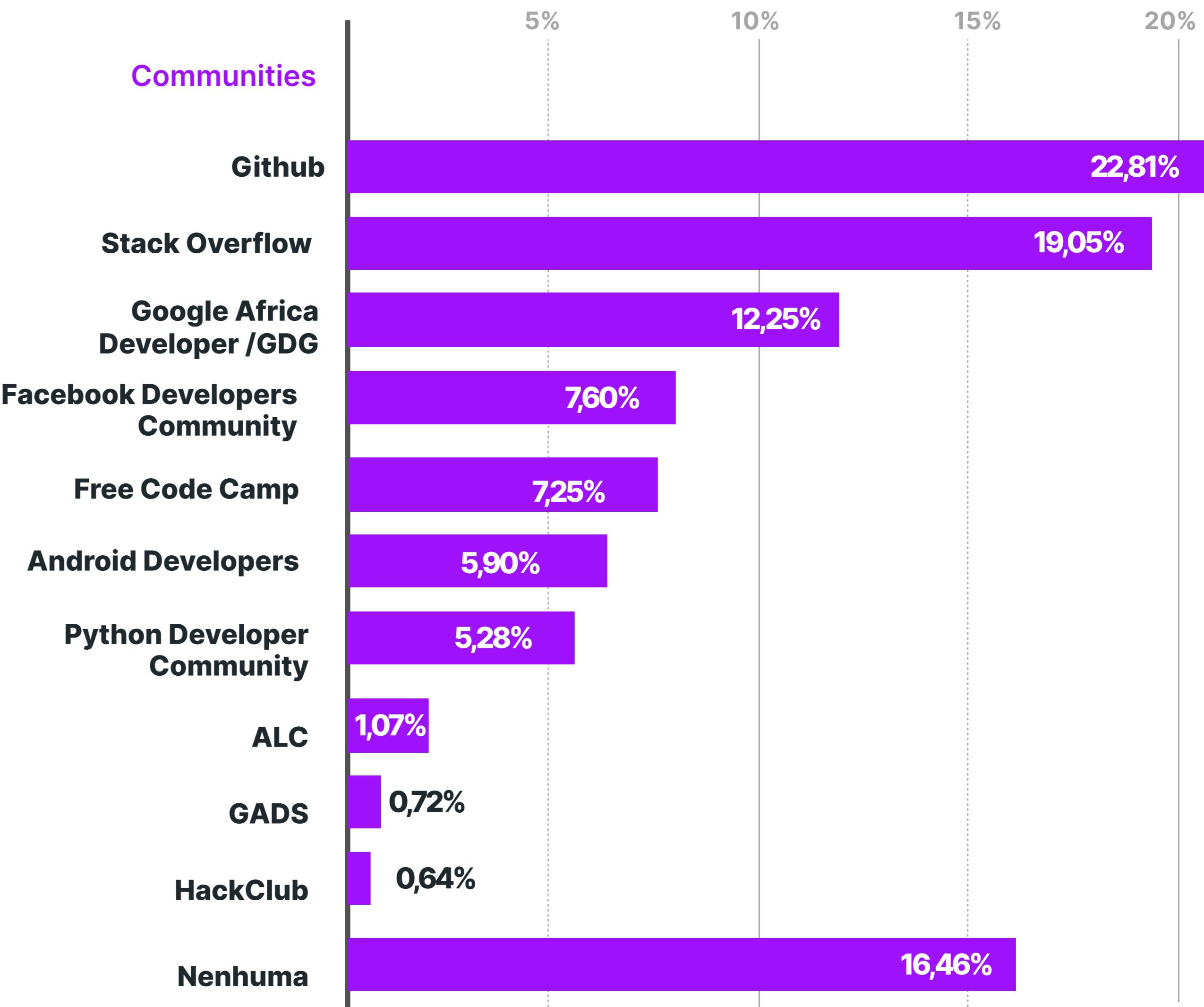
In this section, you'll get to questions related to the involvement of developers in communities.

Participation in Global Communities

Global communities play an important role in improving skills and sharing knowledge.

In Mozambique, GitHub stands out as the main global community in which programmers participate, with a notable presence of 22.81%. Stack Overflow follows closely behind, being the choice of 19.05% of participants. It is interesting to note that 16.8% of programmers are not part of any global community. This raises a debate regarding the diversity of influences and approaches among programmers when it comes to their participation in global platforms.

Which global development communities do the developers belong to?



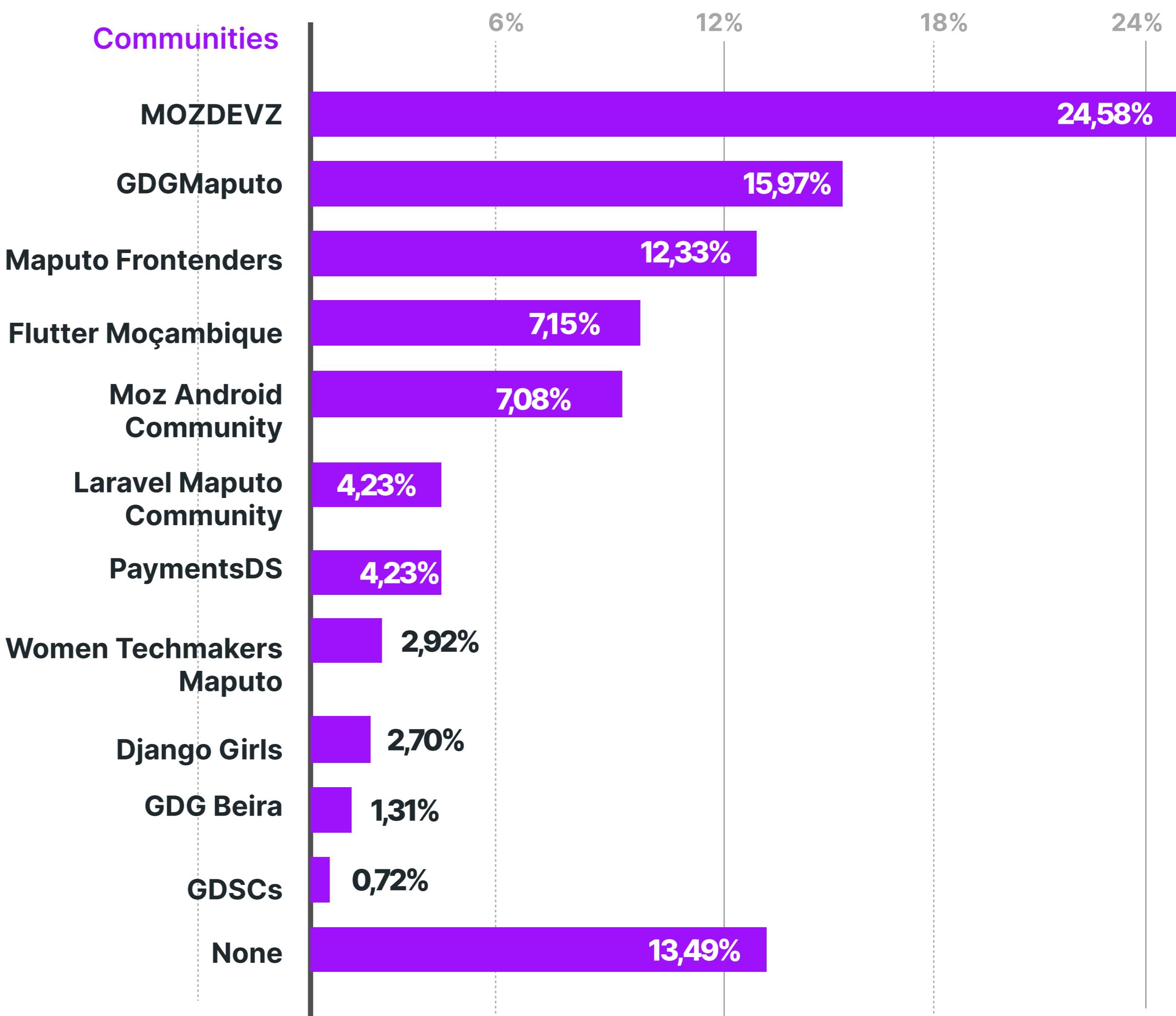
Communities

Participation in National Communities

The MOZDEVZ community stands out, with 24.58% of developers as members. Around 15.97% are members of GDG Maputo, showing an interest in learning and sharing knowledge about Google technologies, while 12.13% are part of the Maputo Frontenders community, reflecting a growing focus on user experience and visual interaction.

Women Techmakers Maputo and Django Girls have around 3% of members each. These statistics show a solid commitment by developers to getting involved in communities, building local networks, learning, and sharing knowledge, thus contributing to our country's technological growth.

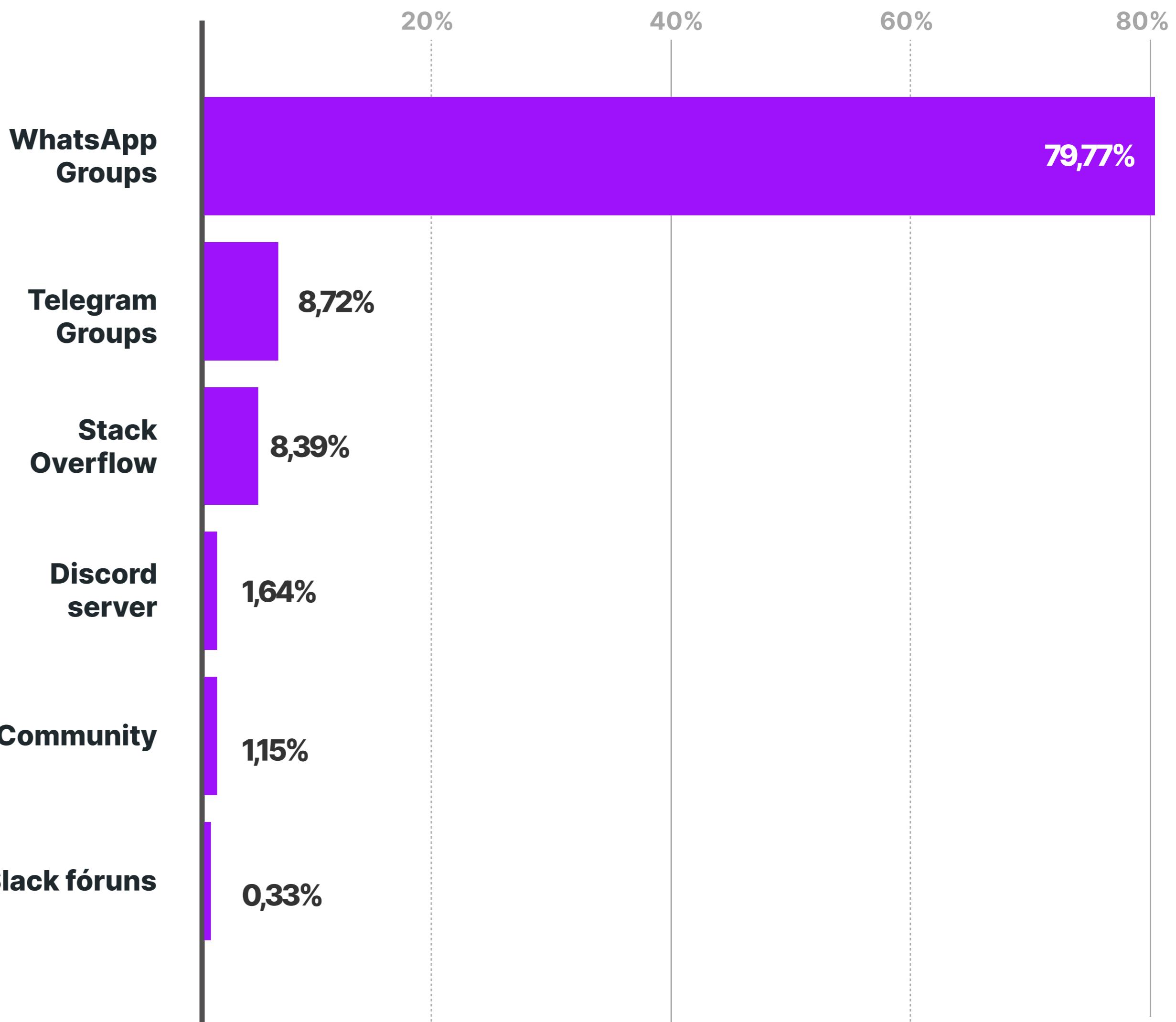
Which national development communities do the developers belong to?



Forums and communication platforms

Among the various platforms adopted by Mozambican developers to share knowledge, learn, and interact, WhatsApp emerges as the undisputed leader, with an impressive 79% of developers using it as their main forum. Telegram is next with a share of 8.7%, followed by Stack Overflow, widely recognized globally as a valuable resource for getting answers to technical questions and sharing knowledge, with 8% of users. On the other hand, participation in Slack forums is relatively scarce, accounting for just 0.33% of developers.

Which development forums do developers participate in?



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Methodology and Glossary

METHODOLOGY

To conduct this survey, we created a comprehensive questionnaire that covered a wide array of topics relevant to the developer community. The questionnaire was designed to capture important information about the skills, preferred technologies, platforms used, challenges faced, and career expectations of developers in Mozambique.

The survey was conducted online and involved a total of 617 developers in different regions of the country. The questionnaire was disseminated in forums, social media groups, developer communities, and educational institutions, as well as with the support of strategic partners to reach a diverse and representative sample.

Data collection took place over six (6) weeks, allowing participants enough time to answer the questionnaire fully and accurately. During this period, the data was also monitored and analyzed in real time.

Finally, a detailed analysis of the data collected was carried out, using statistical methods and visualization tools to obtain meaningful insights. These insights have been grouped together and presented in this report clearly and understandably, to provide a comprehensive overview of the developer landscape in Mozambique.

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Glossary

VoD - stands for "Video on Demand". It refers to a video content distribution system in which viewers have the flexibility to choose and watch videos or television programs at any time, as opposed to traditional broadcast schedules.

Diversidade geracional - refers to the presence of different generations in the workplace or other social contexts. It focuses on the coexistence and interaction of individuals from different age groups, each with their own specific experiences, values, perspectives, and characteristics.

TI - refers to the set of activities related to computing, technology, and information systems. It involves the use of computers, software, networks, databases, and techniques to collect, store, process, transmit and manage information.

GDG - stands for "Google Developer Group". It is a community of developers of Google technologies, such as Android, Firebase, Google Cloud Platform, among others. GDGs are independent groups, generally made up of enthusiasts, developers, students and technology professionals who share an interest in learning about the technologies and platforms offered by Google.

Freelancer - is an independent professional who offers their services on a temporary and flexible basis to clients or companies, usually in exchange for financial payments.

Mozambique Developer Survey

1st Edition

UMA INICIATIVA

MOZDEVZ

EM PARCERIA

Kabum

