

# Smart Tenant Management



## Goals and Objectives

A **smart tenant management system** is a software solution that enables landlords to manage their properties and tenants more efficiently. The system allows landlords to maintain asset details, tenant details, and payment details, including partial payments. Additionally, it enables landlords to accept payments and lend money to their tenants based on their income and deposit.

The goals and objectives of a smart tenant management system are to:

1. **Reduce rent arrears:** By providing a platform for tenants to make payments online, landlords can reduce the number of tenants who fall behind on their rent payments.
2. **Improve tenant satisfaction:** By providing tenants with a convenient way to pay rent and communicate with their landlords, landlords can improve tenant satisfaction and retention rates.
3. **Streamline property management:** By automating tasks such as rent collection, maintenance requests, and lease renewals, landlords can save time and reduce errors.
4. **Increase transparency:** By providing tenants with access to their payment history and other important information, landlords can increase transparency and build trust with their tenants.

5. **Improve financial management:** By providing landlords with real-time financial data, such as rent roll and cash flow statements, landlords can make more informed decisions about their properties.

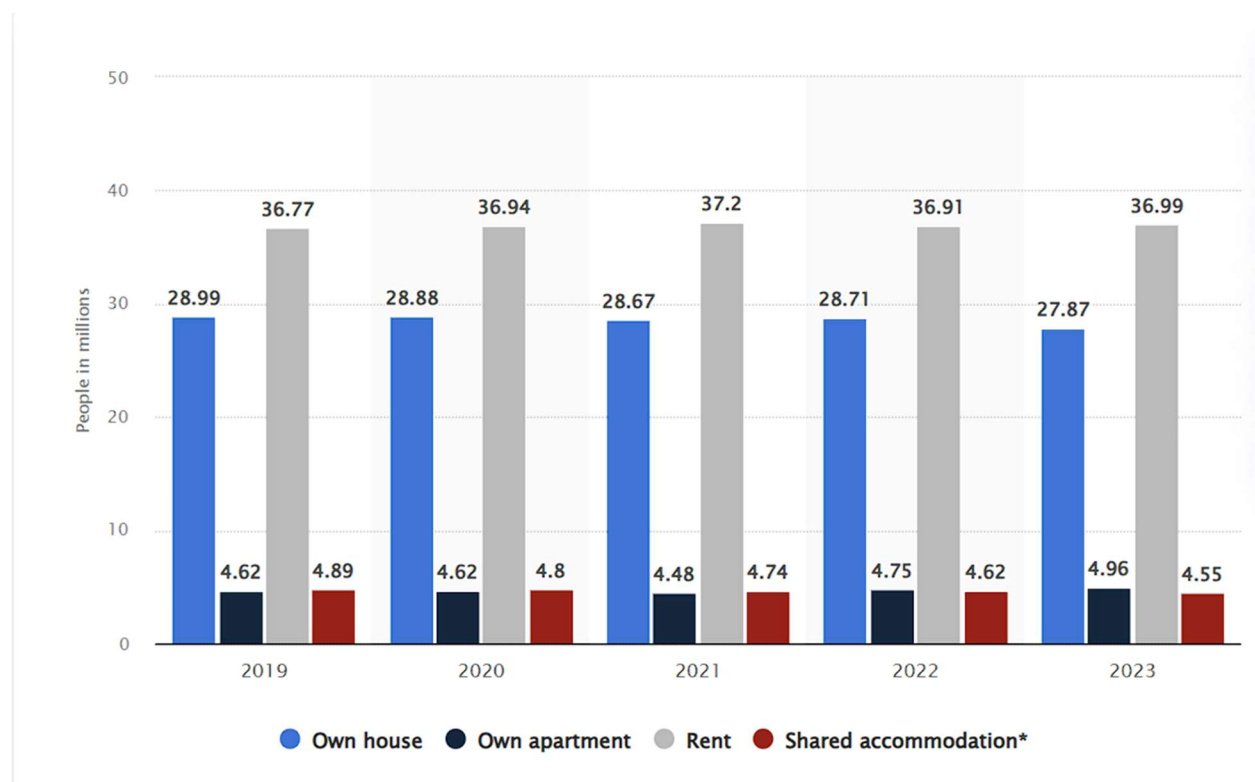
### Targeted Audience

The targeted audience for a smart tenant management system are landlords and property managers who want to manage their properties and tenants more efficiently. The system is designed to help landlords maintain asset details, tenant details, and payment details, including partial payments. Additionally, it enables landlords to accept payments and lend money to their tenants based on their income and deposit.

### Market Research

About 85 per cent of Berliners rent, and it's become part of the city's DNA. Locals talk of how historically affordable rents have helped to cement a strong sense of community – and broaden the city's appeal. In 2021, more than half of the population (50.5%) in Germany lived in rented accommodation. This was the highest share in the EU.

The figure was significantly lower in France (35.3%), Spain (24.2%) or Poland (13.2%). In Romania, only 4.7% of the population lived in rental accommodation. Oct 11, 2023 Most of the German population rented their housing, **around 37 million people** did so, compared to roughly 27.9 million who had their own house.



## Technical upgrades

These are upgrades required for the current project before taking this project to the market.

- Create a database to handle all the data from users
- Current project is ready to deploy on windows and android. In future we need to plan to get this project up and running on web, iOS and mac. Since we are using Blazor MAUI technology which helps us to develop cross platform applications this will be a piece of cake
- Separate business logic and data access layers from current project and place them within Api's so that we can use common logic across different platforms.
- Allow tenants to pay rents using the app.
- Allow tenants to raise maintenance request to their landlords

## Technical Resource Requirement

To develop a smart tenant management system, we need a team of skilled developers and designers who can work together to create a robust and user-friendly application. Here are some of the technical resource requirements for this project:

1. **Software developers:** You will need experienced software developers who are proficient in C# programming languages and MAUI Blazor. They should have experience in developing web applications, RESTful APIs, and database management systems. They should also be familiar with cloud computing platforms such as Microsoft Azure
2. **UI/UX designers:** You will need skilled UI/UX designers who can create an intuitive and user-friendly interface for the application. They should also be familiar with design tools such as Sketch, Adobe XD, or Figma.
3. **Database administrators:** You will need experienced database administrators who can design and manage the database for the application. They should have experience in database management systems such as MySQL, or MongoDB. They should also be familiar with data modeling, indexing, and query optimization.
4. **Quality assurance engineers:** You will need quality assurance engineers who can test the application and ensure that it meets the requirements and specifications. They should have experience in manual and automated testing, test case creation, and bug tracking. They should also be familiar with testing tools such as Selenium, JUnit, or TestNG.
5. **Project managers:** You will need experienced project managers who can oversee the development process and ensure that the project is completed on time and within budget. They should have experience in project management methodologies such as Agile or Scrum. They should also be familiar with project management tools such as Jira, Trello, or Asana.

## Technical Resource Requirement

While developing a smart tenant management system, it is important to conduct a risk assessment to identify potential risks and vulnerabilities. A risk assessment is a process of identifying, analyzing, and evaluating risks associated with a system or application. The goal of a risk assessment is to identify potential threats and vulnerabilities and develop strategies to mitigate them.

Some of the potential risks associated with a smart tenant management system include:

1. **Data breaches:** Smart tenant management systems store sensitive information such as tenant details, payment details, and asset details. A data breach could result in the loss or theft of this information, which could lead to identity theft or financial fraud.
2. **Cyber attacks:** Smart tenant management systems are vulnerable to cyber attacks such as malware, phishing, and ransomware. These attacks could compromise the system's security and lead to data loss or system downtime.
3. **System failures:** Smart tenant management systems rely on technology such as servers, databases, and networks. A system failure could result in data loss or system downtime, which could impact the system's availability and performance.
4. **Human error:** Smart tenant management systems are operated by humans who are prone to errors such as misconfiguration, mismanagement, or accidental deletion of data.
5. **Access controls:** Access controls limit access to sensitive information and system resources to authorized personnel only. This can be achieved through the use of passwords, multi-factor authentication, and role-based access control.
6. **Encryption:** Encryption is the process of converting sensitive information into an unreadable format to prevent unauthorized access. This can be achieved through the use of encryption algorithms such as AES or RSA.
7. **Backup and recovery:** Backup and recovery is the process of creating copies of data and storing them in a secure location. This can help mitigate the impact of data loss or system downtime.
8. **Training and awareness:** Training and awareness programs can help educate employees on the risks associated with smart tenant management systems and how to mitigate them. This can help reduce the risk of human error.
9. **Marketing:** We need to create a very good marketing strategy to take this project to a greater success.

## Timeline

The development process involves several stages, including:

1. **Planning:** This stage involves defining the scope of the project, identifying the requirements, and creating a project plan. The planning stage can take several weeks which should be completed within 2 weeks.
2. **Design:** This stage involves creating the user interface, database schema, and system architecture. The basic draft should be completed within 3 weeks.
3. **Development:** This stage involves writing the code, integrating the system components, and testing the system. The development stage can take several months but the initial release should be completed within 5 months.
4. **Testing:** This stage involves testing the system to ensure that it meets the requirements and specifications. The testing stage can take several week, but we should start testing parallelly at the basic stages of development which is after couple of months from the start of development.
5. **Deployment:** This stage involves deploying the system to the production environment and making it available to users with automated CI/CD. The deployment stage can take couple of weeks.
6. **Maintenance:** This stage involves maintaining the system, fixing bugs, and adding new features. The maintenance stage can last for several years, depending on the lifespan of the system.

Excluding maintenance this project could be made available to users within 6-9 months.

## Security

Security is a critical aspect of any software solution, and a **smart tenant management system** is no exception. A smart tenant management system stores sensitive information such as tenant details, payment details, and asset details. Therefore, it is essential to implement robust security measures to protect this information from unauthorized access or disclosure.

To ensure the security of a smart tenant management system, it is important to follow security best practices such as:

1. **Access controls:** Access controls limit access to sensitive information and system resources to authorized personnel only. This can be achieved through the use of passwords, multi-factor authentication, and role-based access control.
2. **Encryption:** Encryption is the process of converting sensitive information into an unreadable format to prevent unauthorized access. This can be achieved through the use of encryption algorithms such as AES or RSA.
3. **Backup and recovery:** Backup and recovery is the process of creating copies of data and storing them in a secure location. This can help mitigate the impact of data loss or system downtime.

4. **Identity and access management:** Azure provides identity and access management features such as Azure Active Directory, which enables administrators to manage user identities and access to resources.
5. **Regular security audits:** Regular security audits can help identify potential vulnerabilities and weaknesses in the system. This can help ensure that the system is secure and compliant with industry standards and regulations.

## Budget Required

The cost of developing a smart tenant management system will depend on several factors, including the size and complexity of the system, the number of developers involved, and the hourly rate of the developers. Based on industry standards, the hourly rate of software engineers ranges from €30 to €150 per hour.

On an average, assuming that we need to pay €65 per hour (20 working days a month and 8 hours of work in a day) for each employee and we need 10 employees and also assuming to complete the project within 6 months. We get to conclusion that this project could take around 6,900 hours of work (including all employees), this project requires around €500,000 to complete this project

Thank you