

Dublin City University - School of Computing
Enterprise Computing 4th year project proposal (CA472) Idea Proposal 2019/2020



Student name(s): Maksims Kompanijecs, Matthew Farrelly

Student Number: 15306971, 15366246

Project Title: RentSpot - Property Renting Application

Date: 06/11/19

Project Summary

For our final year project we decided to make a housing rental app called 'RentSpot'. In our app we plan to implement some additional features to help the process of getting a lease quicker. RentSpot will allow users to create profiles to search for accommodation, which **must** be verified with a government issued ID(driver's license, passport). The user profiles will contain relevant personal data and any supporting documentation that would assist them in getting a lease. When the user searches for a property to rent, a green tick will be displayed beside all the properties which they are eligible for. If a user looks at an advertisement where they do not meet the set requirements, they will be prompted to upload the missing criteria in order to apply. When there is a pool of applicants that meet the set lease requirements we will arrange viewings with the landlord.

This will prevent the landlord ciphering through application emails to find suitable tenants, it will also manage candidates not meeting set requirements after a viewing takes places. For the tenants, this suppresses the need for forward and back emailing regarding availability, references and proof of identification. All in all it saves time and effort for both sides of the customer segments as it digitizes the application process.

In RentSpot we plan to have a payment platform implemented, this will allow tenants to pay their rent through our system at their convenience and we keep track of the balance, or an automated transaction process specified by the landlord that a tenant has agreed to. This adds to the convenience for both parties as money will be paid into the landlords account, saving the need to visit monthly visits. We also plan for the tenants to pay their deposits to RentSpot for holding until the property is vacated. The deposit will be returned when the property is vacated and condition standards are met. This will in turn eliminate any disputes that may arise with rent, deposits and the condition of the property at the end of the lease term.

There is an additional feature for users that if they don't meet the minimum requirements of a lease, they can co-apply with another user to reach the requirements. For example multiple users can pool their money together to raise the deposit of a property and we will keep a record of each user transaction.

In our application we intend to have no initial listing fee for a property to be advertised, we also won't require the landlord to renew the advertisement on a monthly/quarterly. We will manage the advertising of the property from gathering lease requirements, taking photographs, handling responses and keeping the advert listed until the property has been leased or taken off the market by the landlord.

We chose this project because of the housing crisis in dublin, and how difficult it can be to get accommodation. From personal experience there was a number of forward and back emailing which could have been avoided, along with a vast number of emails which didn't get a reply. We felt that this would speed up the process in a big way and give the tenant user a better piece of mind where they are within the application. Another reason we chose this project is to try combat phishing advertisements and subletting at inflated costs or without permission from the landlord.* And with the new short term letting restrictions coming into play there will be more properties coming available for long term rent.

Expected Technical Delivery

For our final project delivery we are hoping to deliver a 'real estate online' service that can be used easily by tenants and landlords and provides safe and secure environments to do business for both parties. We also hope to demonstrate all of the functionality of the app to the full extent.

We will use the Python programming language as our main tool when it comes to creation of this application and Django as web framework of our choice. Having Django as our web-framework will be of great benefit to us, not only does this framework encourages rapid web development with safe and clean design, but both of us have had an experience working with this framework before. We will also use and utilize any other programming languages or technologies that we feel like could benefit our application when it comes to development, deployment, security, version control and maintenance. For example in order to create the actual content on different pages we will use HTML and CSS for the design or style of the website, including the layout and other different visual components. In terms of data, and its storage - we are yet to decide what relational database management system we are going to use. We are most likely going to use something simple like SQLite, as it is embedded into end-program rather than being a full on client-server database engine. For deployment and hosting of this application, we will most likely go ahead with deploying and hosting services that Maksims is most familiar - GCP (Google Cloud Platform). During his internship he had the opportunity to deploy applications into the cloud using Google App Engine and Kubernetes environments.

First feature we want to implement at RentSpot is that in order to verify the account users will have to provide a credible government ID such as a passport or driving license. Once users register we can ask them to take a clear photo of a government ID and then take a selfie of themselves. For a start, we could probably have someone manually accept all of the verification requests. Thinking down the line if this business idea would be successful, we could use some sort of face recognition technology to automate this process.

Another feature that we are going to implement a system that allows users to upload any supporting documentation required to obtain the lease. We will need some kind of process in place to verify that the documentation is valid. We could probably start doing this manually at the start, and then see to incorporate some sort of technology to automate this process. We might also look to apply the same principle to landlord properties, so we can verify that they are legitimate.

Once users upload the supporting documentation, we will need to implement some kind of backend logic. This logic will display green tick beside the properties that tenants can qualify and can apply for. Properties that will have no green tick, will mean that tenants are not eligible to apply for this property or they need to provide more supporting documentation. We also want to make it easy for people to find possible roommates and then make joint applications on the property. We can do this by having a community forums for tenants where they can find possible roommates or implement something like 'I'm interested' button - which can help for tenants to find roommates and apply for the lease together.

Payment system is another feature that we are hoping to incorporate into RentSpot. We want to make it easier for landlords to collect and for tenants to pay rent on time. How we are hoping it's going to work is that once lease gets approved by the landlord. Tenants will receive a payment link through which they can pay the rent to their landlord every month. The payment system we have in mind should allow tenants to manage their finances better by allowing them to pay off rent in instalments such as weekly/bi-weekly/custom and so on.

These are only some of the main features that we are hoping to implement in our final technical delivery. Having these features implemented I think our product will stand out in the Irish market and offer a better, more convenient and safer way to digitize the lease application process. We are hoping that our application can make the whole process of obtaining a lease much more convenient for both of our customer segments - tenants hopefully can obtain the lease much quicker and allow landlords to find suitable tenants much faster.

Market Rationale

For our business idea our two main customer segments that we would like to target in Irish market are homeowners and tenants. Both of these customer segments will play a crucial part, and without each other this business idea will not be feasible. We need tenants to drive the supply for the accommodation, and homeowners to be the supply of possible accommodation for these tenants.

The biggest Irish long-term property rental website provider is Distilled Media. This online media community includes websites such as rent.ie, let.ie, property.ie, donedeal.ie and daft.ie. Without a doubt, daft.ie is the leading property letting service in Ireland. According to daft.ie homepage - "Daft.ie is Ireland's largest property website. 9 out of every 10 properties for sale in Ireland are advertised on Daft.ie." This figure is high because in order to list anything on let.ie for example, you have to do it through daft.ie first. Once this is done, you can list the same advertisement on other property rental platforms owned by Distilled Media at an extra cost. Other competition in the market includes myhome.ie - very similar to daft. Spotahome - relatively new service, they also take their own property photos and their main goal is to eliminate any communication barriers between tenants and landlords.

Daft quarterly and annual reports helped us understand how massive the Irish property market actually is and in how much of a difficult place it is in at the moment. According to [daft.ie Q2 2019 rental price report](#), on May 1st 2019 there were only 2,700 homes available to rent nationwide. This is the lowest number ever recorded. Average monthly rent nationwide has risen to €1,391, and according to the following [journal.ie](#) article, Dublin the average cost of rent has risen over €2,000. This indicates that the rent in the capital has risen in 31 consecutive quarters in the row.

Matthew also spoke to a man he used to work for who is a landlord in Gardiner Street, Dublin. He gave us a lot of insight on the stresses and benefits of being a landlord. He also gave some ideas that would make a landlord's life easier when renting out a property and if we could implement these features in our project it would encourage many landlords to use it. One example of this is having tenants upload their financial references as a source of income, this would give landlords the sense of security that the possible tenant can actually afford the accommodation in question.

In the Irish market, property letting sites generate revenue by charging a selected premium when you place an ad using their service. For example daft.ie - the leading Irish property website has three main advert types - Standard, Premium, Featured. Different advert types offer different benefits. These benefits range from extra large ad formats, unlimited photos, high priority listings. One thing that is the same for all of the advert types is that property stays live on the website for 90 days only. Once 90 days are up you have to renew the ad, which is an extra cost for the landlord.. Daft.ie offers lead assurance feature to their premium and featured advert type customers. Lead assurance is a feature which means that if your property hasn't been enquired about in 90 days, then daft.ie will relist your property free of charge.

In order to rent a property in Irish market, most real estate agents or landlords follow a very basic process. They either attach their phone number or email address and then specify their preferred method of contact. We feel like this can be done in a much better way. Instead landlords or estate agents having to receive hundreds of emails from tenants that don't even qualify their requirements e.g. working professionals only. We are looking to create a platform for the Irish market that will digitize the lease application process and make it much easier for tenants to obtain a lease on the property and make landlords job easier when it comes to picking a suitable tenant.

What also is yet to be done in Irish long-term rental market is to have verified user profiles. As mentioned above, users can verify their profiles by submitting any government issued ID and a 'selfie'. We are hoping that this feature will provide tenants and landlords with safe and transparent environment to rent and rent out properties. An example of verification features implemented to some extent can be seen at airbnb, some hosts can opt in for an option to only allow guests that have their profiles verified with government ID.

Proposed Timeline

Before creating the proposed timeline for our project. We made sure we familiarised with the project guidelines and wrote down all of the major deadlines in our calendars. This will give us a better understanding of when different components of the CA472 project are due. Doing this will also help us to hopefully carry out all of the project deliverables on time and also help us allocate the time and resources needed to complete other college work in time.

We are currently preparing a presentation that we are going to present to a panel in a couple of weeks, we are also thinking and preparing answers to some of the obvious questions that could be asked by any members of the panel.

For the actual prototype delivery of the project, we are hoping to get started on the coding aspect shortly. This should give us enough time to complete a fully working prototype by late April. We feel like writing the actual code for this application, and making sure that all the features work as intended will by far the hardest part of the whole project.

By the end of late November we are hoping to complete all of the necessary market research. For now, we have briefly touched on Irish market research and we feel like there's so much more to learn of do property website companies conduct rental business online. We are also soon planning to get in contact with tenants, landlords, government and real estate agents to see if there are any insights that we can gain from these parties that could benefit us in delivering this service..

By the end of semester 1, we will prepare and push initial-delivery documentation in the GitLab repo. Along with this deadline, we will hope to have good amount of coding out of the way and maybe have some of the more complex features implemented into our application. From here we should start continuously testing and making sure that all of the features work as intended. One of us can probably also get started here on a software design document that outlines the overall guidance and architecture of the project.

By the end of Semester 2, we hope to have the property rental service called 'RentSpot' delivered, with all of the functionality intended delivered. From here now, development stops and more testing begins to ensure yet again, that everything works as intended. Along with this we intend to have all of the

documentation required completed, this should give us enough time to study for the upcoming exams at the end of Semester 2.

Once our exams are over, we can review the source code and all the relevant documentation for the very last time and start preparing for the group interviews and FYP Expo that takes place in late May 2020.

Workload Distribution

Maksims:

- Market Research
- Software design document
- Technology research
- Wireframes/Web Design

Matthew:

- Mockup development
- Interview customers segments
- Create questionnaire for RentSpot Users

Together:

- Initial and final delivery documentation preparation
- Prototype design and development
- Idea proposal document development
- Testing
- Documentation review

Staff Consulted:

Jane Kiernan - our supervisor for CA472 project