

# Sinking Ship Development Studios

Submitted to:  
Decima Technologies

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## Problem Statement

Decima Technologies plans to implement an application that allows students in Peterborough to efficiently find an apartment or roommate that will best suit their needs. With this new application and website, students are centralized removing the confusion that comes with browsing for apartments on multiple sites at once. Landlords and tenants will be able to write reviews for one another speeding up the process of selecting a house by providing better clarity on who individuals are. Another benefit that the new system provides is the ability to sign up for an automated payment system, as an easy and convenient payment solution, students are given the option to make pre-authorized payments using PayPal, or an interac debit or credit card. Students will also be able to send money via the app. The application also features a dispute / claims system where any previous complaints that a landlord has had about a student will show up on their profile, such as failure to pay rent, or damaging done to apartment, this helps landlords to choose tenants that they feel are best suited for their rental space. Students are also able to make claims against the landlord if condition of the apartment has not met expectations or if there is any other outstanding complaint about the apartment. This is to allow students to understand what it is like to rent in a given apartment, as well as reassure them that in the case of an accident, they will be protected by Decima. The objective of this new application is to eliminate the difficulties that come with finding a roommate/apartment while ensuring a highly user-friendly interface and high level security for students and landlords.

## Stakeholders

Internal stakeholders include:

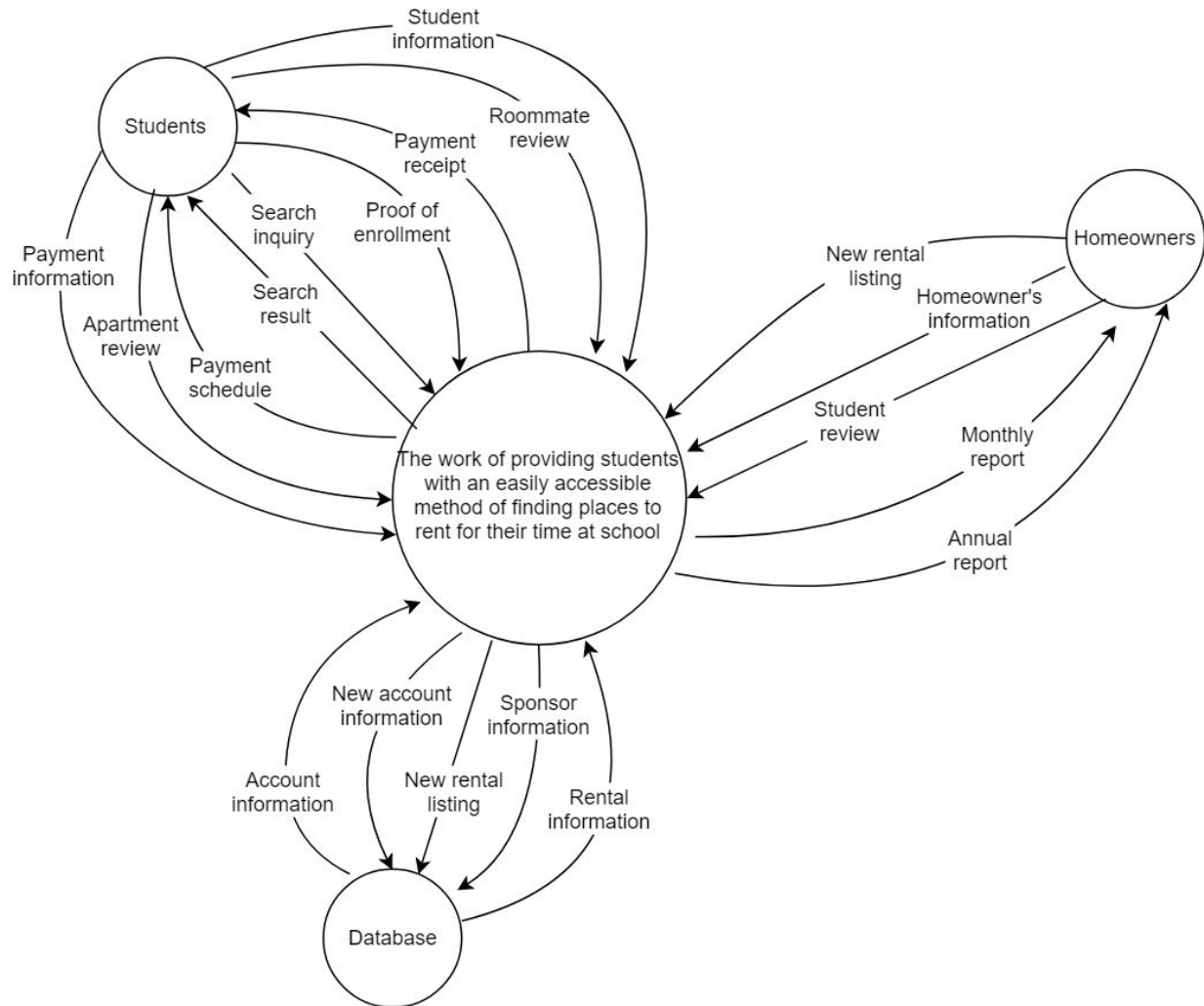
- People who came through Decima will be involved in the project as they are the ones who will directly receive the project once it is done. As well they are providing \$2.8M CAD funding for the project.
- Developers who will be the team involved in creating the application itself. We will require at least 2 of each of the following: A UI designer; Android developers; iOS developers; and web developers
- A customer care team who will be the support team involved with interacting with the customers. This will include the responsibilities of the adjudicating the dispute / claim system as well as selling and advertising the app to different companies, groups, and organizations.

External stakeholders include:

- Users who will be interacting with our system, there will be students who will be renting, as well as a sponsors group who can be responsible for paying the student's rent. Homeowners who will be the ones to post their house ads using the system.
- Peterborough municipal government who Decima may be required to contact to pass through certain bylaws as well as paying municipal taxes.
- Banking companies for processing payment through the app, including: PayPal; Visa; Mastercard; American Express; BMO; and Interac.
- Hackers who pose threats to the safety of user's private information.
- Post-secondary institutes including Trent and Fleming, for providing proof of enrolment, as the system states that it is exclusive to student use.
- Competition coming from other apartment finding applications such as Kijiji, Craigslist, and Trent Roommate finding groups on Facebook.

## Scope of the Project

The diagram below outlines the scope of the project and the work that needs to be done. It includes inputs and outputs of all business events that will take place within the project scope.



## Business Events

Event Name	Input and Output
1. Homeowner makes an account on the system	Homeowner information (in) Account information to database (out)
2. Student makes an account on the system	Student information (in) Proof of enrolment (in) Account information to database (out)
3. Homeowner lists an apartment for rent	New rental listing (in) Rental listing information to database (out)
4. Student searches for an apartment to rent	Search inquiry (in) Search results (out)
5. Student pays rent	Payment information (in) Payment receipt (out)
6. Student sets up automatic payments	Desired payment schedule information (in) Payment schedule (out)
7. Automated payment is made (time-triggered event)	Payment receipt (out)
8. Student writes a review for an apartment	Apartment review (in)
9. Student writes a review for their roommate	Roommate review (in)
10. Homeowner writes a review for a student	Student review (in)
11. A complaint is filed by a student or homeowner	Complaint statement (in) Account possibly blacklisted (out)
12. Monthly report generated for homeowners	Rental information (in) Monthly report (out)
13. Annual report generated for homeowners	Rental information (in) Annual report (out)
14. Student adds a sponsor to their account to rent on their behalf	Sponsor information (in) Updated student account information (out)
15. Student wants to see apartment location on Google Maps	Request for map view (in) Map view of apartment (out)

## Goals

### **Purpose:**

- Make it easier for students and landlords to rent housing

#### **Advantage:**

- More convenient to use a mobile app

#### **Measurement:**

- Number of students and landlords using the mobile app
- One central location to check for renting information

#### **Measurement:**

- App and website bounce rate

### **Purpose:**

- Make it safer for students and landlords to rent housing

#### **Advantage:**

- Landlords can see information on who they're renting to, tenants who they're renting from, and tenants who they're renting with

#### **Measurement:**

- How often tenants or landlords choose not to pick a tenant to rent to or live with

- Can be paid using pre-authorized payments

#### **Measurement:**

- How many students use pre-authorized payments

- Can be paid through our trusted website

#### **Measurement:**

- Number of students and landlords who have used the service to make or receive at least one payment

## Constraints

- Budget of \$2.8 million CAD
- Development must be completed by February 2020 (1.5 year development cycle)
- Product must be available as a web application as well as an application for Android and iOS devices
- Product must be targeted at university students and homeowners
- Product must be accessible and understandable by the target market

## Key Terms

Student: A person currently enrolled in post-secondary education looking for a place to rent during the time of their enrolment

Homeowner: A person with property available for rent who wants to rent to students

Sponsor: A person or entity that is responsible for the rental of a location on behalf of a student

Apartment: Any single rental unit that a homeowner lists for rent on the system

Database System: A database that holds the account information for all users and the apartment information for all locations in the system

Complaint / Dispute: Any statement of dissatisfaction or any dispute from either a student or a homeowner during their time renting while using this system

### Risk Assessment

<b>Risk Type</b>	<b>Possible Risks</b>	<b>Probability</b>	<b>Effect</b>
Technology	1) Inability to coordinate and process batches of transactions at preauthorized time of the month (thousands of users all processing payment at once)	1) Medium, without stress tests against our system we are unsure of whether or not this may happen	1) Catastrophic, will result in potentially thousands of dollars being lost to the void
	2) Potential of payment processing systems going deprecated or faulting could cause a key part of the app to fail	2) Low, we are considering massive corporations failing so this is unlikely	2) High, the loss of a payment method would result in loss of profits
	3) Flaws in dispute system could result in false claims being passed and money being transferred that should not have been transferred otherwise	3) Medium, without proper user testing it is unsure how someone may mess with system to result in errors	3) Low, false claims could be easily reverted manually and fixing the issue will require hiding the problem from the public and releasing bug fixes

	4) Difficulty getting landlords (adults) to become familiar and engaging with the service.	4) Medium, adults are not as tech savvy as the younger generation	4) High, without landlords using the app, there is no apartments to be rented
People	<p>1) A very wide range of developers is required which may mean that development will start slowly, or we will be unable to develop app</p> <p>2) Requirements for extra staff for dispute system as well as marketing and sales during operational phase may result in a need to increase budget</p> <p>3) No criminal background check required for tenants. Will be judged on their profile reviews from other landlords.</p> <p>4) Inaccurate reviews from landlords and tenants.</p>	<p>1) Medium, because of how many developers are required it will take a significant amount of time to find appropriate staff</p> <p>2) Low, the budget for this project is relatively high</p> <p>3) Medium, although it is not required, landlord could still ask tenants for such information</p> <p>4) Low, users of the system are encouraged to be completely honest when writing reviews</p>	<p>1) Medium, will slow the development process, but likely won't result in no product being produced</p> <p>2) The inability to hire this staff will result in difficulty in user uptake and bring in clients</p> <p>3) Medium, because it is not required, it could be a safety concern</p> <p>4) High, the entire rating system could be flawed if such an event occurred.</p>
Organizational	<p>1) Shift in project management staff could result in project requirements changing</p> <p>2) Peterborough governing body does not allow us to produce a system based in</p>	<p>1) Low, unlikely that a new project management office would be brought in to a new product</p> <p>2) Low, the presence of services like Kijiji</p>	<p>1) Medium, would require restructuring of project and delay product as we adjust development</p> <p>2) Low, just means that we pivot and</p>



	<p>the Peterborough Kawartha area</p> <p>3) Initial investors may drop out of product meaning budget for project would drop drastically</p>	<p>shows that this is unlikely</p> <p>3) Low, the product is clear and has a clear market</p>	<p>move our product to another region</p> <p>3) High, budget will lower resulting in potential layoffs of developers and shortening of development period</p>
Tools	<p>1) If our product is too similar to other competitors already on the market we risk a lawsuit</p> <p>2) Requirement on Peterborough bus system to remain consistent and optimal for our system may vary</p>	<p>1) Low, most filter search systems are very similar</p> <p>2) Low, bus routes have been consistent for years</p>	<p>1) Catastrophic, a lawsuit would result in no more funding and thus no more development funds</p> <p>2) Low, this would affect user experience however not affect our usage rates very much, if product is #1 used product on market</p>
Requirements	<p>1) The dispute system will require personnel to judge the validity of disputes and make decisions about whether to process dispute or not</p> <p>2) Payment processes that we require do not authorize out system to use them to process payments</p>	<p>1) Definite, this system needs to be in place in order for disputes to work</p> <p>2) Low, services like this are often approved</p>	<p>1) Low, however we require developing a system to deal with this</p> <p>2) High, means that a key functionality of our product is not offered</p>
Estimation	<p>1) Budget may be too low for a 1.5 year project requiring at least 6 developers plus operational employees</p>	<p>1) Low, 1.5years * 52 weeks a year * 40 hours a week * \$20 developer wage is about \$62,400. This gives us room for 45 employees at this rate</p>	<p>1) Medium, having to cut back on staff will result in slower development speed and a lower quality of final delivered product.</p>

	2) Time estimate may result in a crunch to get the product complete	2) 1.5 years is a relatively short amount of time to develop a system of this calibre	2) Medium, will result in delivery time being pushed back
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### Go / No Go Decision

Given the size of the budget, time allotted to the project and expectations of the deliverable product, it is in our opinion that the project is a feasible goal to complete and deliver on time, and are excited to work with Decima Technologies.