

tenantComm

tenantComm Design Report
By Yipeng Lin

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Introduction

As an international student, I suffered a lot when I tried to find an apartment remotely. I have to firstly find out how do local people live their lives in order to know where I should choose to live. It took me a while to figure this out during which I browsed through many different websites and forums. tenantComm is here to solve this problem. By having local agent to contact online, it can meet users needs of both get familiar with local environment and find a suitable place to live.

Problem

Tenants who are not familiar with local environment have mismatched expectations in the apartment and nearby facilities when finding an apartment.

Design Goal

To help new settlers who are not familiar with local environment gain full acknowledgement on how local things work and give suggestion on where to live according to user's needs.

Tools

1. A webpage that clusters apartment rental information and nearby facility information.
2. Heat maps on possible area covered by certain facility and post it online for people to look up.
3. API for current webpages to call, just like walkscore.com do.
4. An official website for each housing location with detailed information on facilities nearby.
5. A platform to connect apartment finder to local agent to help them gain better understanding on local situation remotely.
6. A walkable 3D street view that allows users to walk around the place they choose, like google map.
7. Crawler crawling information on social media to find out people's opinion on the location.
8. A platform where users can post information on facilities around them, so others can see a place's information. Users may get some reward for information uploaded.

Tools for the design

1. A webpage that clusters apartment rental information and nearby facility information.
2. A platform to connect apartment finder to local agent to help them gain better understanding on local situation remotely.
3. A platform where users can post information on facilities around them, so others can see a place's information. Users may get some reward for information uploaded.

Target Users

People who want to rent an apartment or house remotely and are not familiar with local environment and local situation.

Design

tenantComm is a website that is a tenant community where users can choose to pay to hire a one-on-one service from another user or browse through the free community to obtain information on what the user want to know.

It has features:

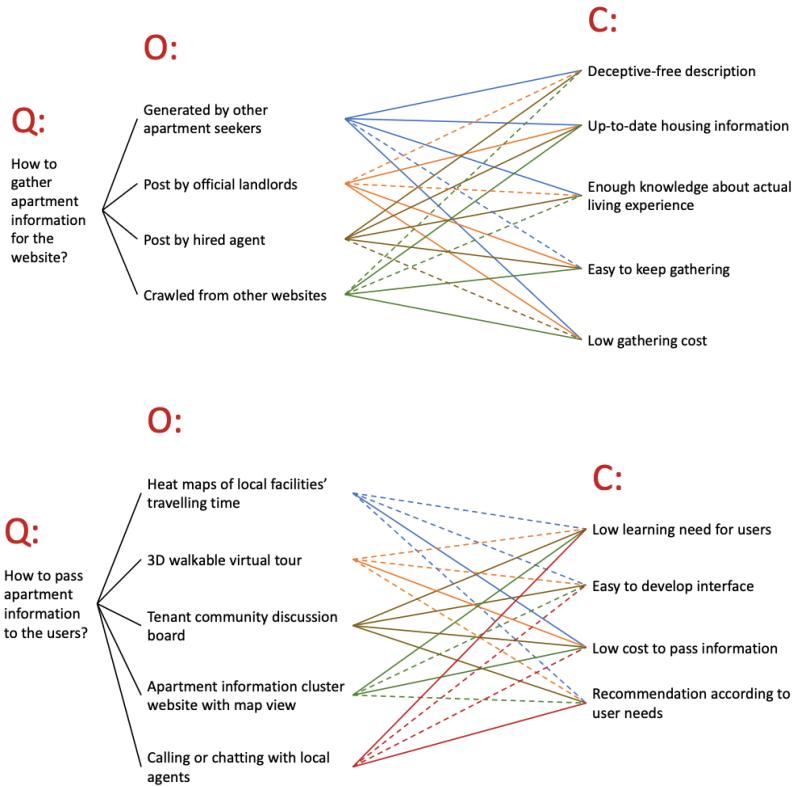
1. location and community-based contents
2. articles and discussions are free to browse and post
3. searching for contents based on key words
4. posting useful articles/reviews can get reward
5. qualified users are allowed to give one-to-one paid service to other users
6. users can reservation and pay to get one-to-one service on advice on local housing and life

By having a local agent who are familiar with local environment, users can contact him/her directly, ask them questions and get suggestions and recommendation according to their needs. So that new settlers can avoid being helpless when they move to a new place.

Design decision

At first, I intended to set up a website that has clustered information about apartment with detailed label, like how far is it to campus, or how much time does it take to go to a supermarket. When I settle down to do competitive analysis and the questions-options-criteria analysis, I find out that even with that information, new settlers still won't be able to know facts like how often they need to go to supermarket, or how is the experience of taking a public transportation to campus. Also, that information online might be out of date very quickly if transportation route has been changed. In later interviews, interviewees also mentioned that they are tired of viewing data and texts on the Internet. They want some real people to contact and consult.

The two main part of having a housing recommendation website is way to collect information and way to convey information. By setting them as the big questions, and options listed from previous tools, it can be found out that information gathered by other users or third-party professionals can mostly complete set tasks but with some difficulties in cost.



Based on this situation, I figure out the way to reduce the maintenance cost of having hired agents and keep users to stick to the website and producing user-generated content is to make user themselves to be agent and set requirements for them to keep posting so that they can be an agent.

Wow factor

The wow factor here is the user cycle in tenantComm.



For new users, they will first browse through the free part of the website, like articles and discussions. Then if they think this website is trustworthy, they might try to pay to consult an

agent. One research shows that a user will go through a lifecycle of a lurker, novice, regulars, leader, and elder, with a barrier that is hard to break through separating every two characters (Kim, 2006). To keep the community healthy, a stimulation is needed to encourage users to participate. In tenantComm, the stimulation is the quality of being an agent, which is users with pro user status. To obtain this status, users need to firstly post articles or discussion of high quality and receive enough likes from other users. Then with the pro user status, those users can get paid for the consulting they make. The result is a win-win. Those users can get paid and the website can have more user generated contents to attract new users.

Social impact

Actually, the tenantComm here is not only an online community, but also a virtual version of the real local community. Users on it are people who live in the community or will be living in the community. So being an agent is not only about getting paid, but also getting to know new people in the neighborhood or new settlers. It is also a good way to know new people. Beside the agent service, the discussion board can also be a good place to socialize with local community members.

Technology

All technology used in tenantComm is easy to implement. It will need a web server for processing user data and well-developed website front-end and back-end. Also, a searching algorithm might be needed for the searching function on the website.

Tools for Design

Techniques

Along the design process, I did competitive analysis, need finding, sketching, persona analysis, story map, scenario and storyboard building, QOC, low-fi prototyping, user testing and mid-fi prototyping. Among these, I felt competitive analysis, need finding and QOC are extremely helpful for deciding the functionality of the design. They can help designers to uncover the true needs and get the design on its track. Also, the persona analysis, it helps me to see the product from users' angle and find out the design flaw in the procedure. The low-fi prototype helped me to visually judge the user flow for further improvement in later design. However, I feel story map and scenario building overlaps each other to some extent. The storyboard building is also not very helpful to my final design as I already have the design in my mind in this case.

Tools

I have used Adobe XD, Excel, Word and PowerPoint to approach my design. They are all good software that can improve working efficiency. Adobe XD are very user friendly for Adobe users. It significantly simplifies the process of building prototypes.

Lesson Learned

Need-finding interviews

I personally learnt a lesson from need finding interviews that never presumption others' need based on your own preference. I am not the kind of person who like to talk to other people. For me, I would rather choose to read reviews or descriptions on house finding websites. However, from the need-finding interviews, I found out that people are more willing to contact other to seek help in finding a house or apartment, no matter by social media, local forum, messaging or calling. They consider this a way to cross-validate information online and avoid deceptive contents.

User testing

In my user testing, I get many feedbacks on the names of different sections. For example, I used to have "Chats" instead of "Discussions", and "Shop" instead of "Rewards". As a non-native speaker, there could be difficulties distinguishing subtle meanings between words. The lesson I learnt here is to find someone to help with the language that you are its native speaker when it come to the design of interface in different languages. Things could go wrong and users might not be able to understand the meaning you are trying to convey in the interface.

References

1. The factors influencing residential satisfaction by public rental housing type

Researchers conducted surveys on people who lives in a rented house/apartment in Korea to find out what are the elements that will result in a satisfied apartment renting. Then, authors use regression to try to estimate possible satisfaction level for different situations. The authors concluded that residential environmental factors affect the satisfaction a lot and safety and available facilities are also relevant to satisfaction. (Byun et al., 2016)

2. What makes you choose Airbnb again? An examination of users' perceptions toward the website and their stay

Authors use survey on Airbnb users to find out what factors can affect users' satisfaction on their rental and the platform. They find out that amenities and host-guest relationship are leading factors (Wang et al. 2018). Though Airbnb mostly provides short-term apartment leasing, the fact affecting housing satisfaction can also be transferred to long term house rental service.

3. Tilted platforms: rental housing technology and the rise of urban big data oligopolies

This article discusses facts on how online apartment rental platform can balance long-term users and short-term users. As those users are focus on different aspect, the authors consider there is systematic biases on users generated rating system on those platform and new recommendation policy should be made to adjust the bias (Boeing et al. 2021).

4. The unequal availability of rental housing information across neighborhoods

By looking through housing advertisement on Craigslist, authors of this article finds out some most frequently listed information of apartments' neighborhood (Besbris et al. 2021). This reflects people's preference on the quality that the apartment owns.

5. Community building on the web: Secret strategies for successful online communities.

Authors proposed both theories and suggestions on the working principles of running an online community, including how to maintain users and how to attract users.

[1] Byun, G., & Ha, M. (2016). The factors influencing residential satisfaction by public rental housing type. *Journal of Asian architecture and building engineering*, 15(3), 535-542.

[2] Wang, C. R., & Jeong, M. (2018). What makes you choose Airbnb again? An examination of users' perceptions toward the website and their stay. *International Journal of Hospitality Management*, 74, 162-170.

[3] Boeing, G., Besbris, M., Wachsmuth, D., & Wegmann, J. (2021). Tilted platforms: rental housing technology and the rise of urban big data oligopolies. *Urban Transformations*, 3(1), 1-10.

[4] Besbris, M., Schachter, A., & Kuk, J. (2021). The unequal availability of rental housing information across neighborhoods. *Demography*, 58(4), 1197-1221.

[5] Kim, A. J. (2006). Community building on the web: Secret strategies for successful online communities. Peachpit press.

Appendix

Competitive analysis

	Offcampushousing	Zillow	Airbnb	Google Map	Craigslist	Zhihu	Walkscore
Basic Information	offcampushousing.umich.edu	zillow.com	airbnb.com	map.google.com	craigslist.org	Zhihu.com	walkscore.com
Basic Information Extended	Official website for housing by University of Michigan.	Online apartment finding platform with information provided by landlords, doesn't provide direct rental but provide contact information to landlords.	Online platform looking for place to live for a short period of time, like a hotel but is run by landlords. Can order and pay through the platform.	General use online map with information attached to each location.	Online community for a specific area	A online Q&A community provides free Q&A and browsing funtions and paid questioning and lecturing services.	A online platform with API provided to other apartment finding website how convenient a specific location is in walking/transpoting.
Type	Direct	Indirect	Parallel	Indirect	Indirect	Analogous	Indirect
Strength	Official website, can be trusted Most students will visit Related tips and suggests on living in Ann Arbor Embedded page to apartment.com providing housing information	Provides information about the apartment from a lot of perspectives including apartment photos, facts, history price, nearby facilities, walkscore, etc. User friendly Interface. Have map on the left to select region, list on the right to select apartments.	Provide condense information on the apartment and nearby sites. Have user reviews and rating on the apartment. The platform supervises the landlords. Can do searching, filtering, renting on the same platform. User friendly interface. Easy to use.	Powerful search engine to support location searching. Smart nearby recommendation. Many user reviews, usually with photos. Street view allow users to walk around virtually in the neighbourhood. Direct user interaction. Can point on spots and get information.	Contact directly to landlords or other tenants. Information provided by landlords and tenants and has a map showing where the location is. Have pictures provided.	Large user groups Question, answer, comment form helps users to participate in discussion Mostly free to use Can receive payment for certain amount of views	Easy access API for other housing websites Scores provided direct accessibility and comprehensibility Travel time map embeded Bus stops nearby
Weakness	No user commenting feature The embedded apartment.com may have deceptive contents Only works for housing in Ann Arbor	Only information provided by landlords and algorithms, no user reviews Have information of surroundings, not in detail. And users can't filter those information. Need to contact landlords outside the platform.	Not for long term rental. Can't select according to nearby facilities, need to open google map for reference.	No information about the apartment itself and rental. For users not familiar local environment, they may not figure out how things work in the place.	Unsupervised information. The amount of information determined by the user. Not great looking website, too many links, hard to read. Not friendly for new settlers.	Not clever recommendation system Too many useless features Not a clean userinterface	Scores are provided without detailed information on why it has low/high score Only involve algorithm to judge, no user feedback. Very little interactive element, only takes users' text input and current location to search.
Key brand differentiators	Users.	Technology. Comprehensive information clustering	Users, design. Starts very early and has huge amount of landlords and users. Has outstanding website design and photoeographs.	Technology, users. Powerful serach engine, huge user size.	Users, locality. Users are from local neighbourhood and a lot of users would post on it.	Technology, Users.	Technology. Algorithm on evaluating walkability of a location.

Persona

Persona Type: Primary
Persona Group: Students



Demographics:

Age:

- 25

Location:

- Paris, France

Ethnicity:

- European

Education:

- Bachelor degree in economics

Family:

- lives with her parents
- has a dog

Goals and Tasks:

- obtains a master degree in Michigan Ross
- conducts some researches in the field of economics
- would like to be a GSI
- finds a job in U.S.

Pain Points:

- not physically in Ann Arbor
- not a native English speaker
- not familiar with life in U.S.

Rosie

Graduate Student

Environment:

- has a lot of friend in Paris, feels a little lonely going to U.S. but also looking forward to making new friends
- don't know much about how to live on her own
- very familiar with computers

Needs:

- finds an apartment with balcony in Ann Arbor downtown, having a park nearby

Personality:

- enjoys socializing
- enjoys all kinds of outdoor activities
- trusts information from others
- loves to communicate with other people

Product Requirement:

- a way to directly talk to someone at the place
- some photos or reviews of the surroundings

Persona Type: Secondary
Persona Group: Visitors



Photo by
Usman Yousaf
@Unsplash

Demographics:

- Age:**
- 30
- Location:**
- New Delhi, India
- Ethnicity:**
- Indian
- Education:**
- Bachelor and Phd in business and management
- Family:**
- lives with his wife and two children

Goals and Tasks:

- gives lectures on management in University of Michigan
- participates in existing research in University of Michigan
- gains new ideas for his research

Pain Points:

- not physically in Ann Arbor
- not familiar with Ann Arbor
- don't have many people to contact in Ann Arbor

Needs:

- find an apartment with easy access to school buildings
- finds interesting places to visit in Ann Arbor

Raj

Visiting Scholar

Environment:

- has lived in New York for 7 years
- works as a lecturer in University of Delhi
- has some friends in America but no one near Ann Arbor
- familiar with computers

Personality:

- outgoing person
- enjoys socializing
- thoughtful person
- loves to give lessons
- watches many TV series in his spare time
- loves to try new things

Product Requirement:

- has blogs or articles about life in Ann Arbor
- has a list of places recommended to visit in Ann Arbor
- has a list of nearby facilities

Persona Type: Anti

Persona Group: New Settlers



Photo by
Zoltan Tasi
@Unsplash

Demographics:

- Age:**
- 35
- Location:**
- Los Angeles, U.S.
- Ethnicity:**
- American residents
- Education:**
- Master in Art
- Family:**
- lives with her husband and their two children

Goals and Tasks:

- finishes her painting group related to woods
- increases she and her husband's relationship with their children
- have her paintings exhibited at The Met

Pain Points:

- focuses on a certain thing for too long (painting / exploring nature), need to change her mode sometime
- doesn't have much time to find a house

Needs:

- looking for renting or purchasing a big house for her family
- near an elementary school

Nena

Artist in Painting

Environment:

- has lived in Los Angeles for over 10 years
- needs to get inspiration from the nature for creation
- move to Ann Arbor for a local working opportunity
- have a close friend living in Ann Arbor
- not very familiar with computers

Personality:

- dedicated person
- enjoys being outdoor
- could stay indoor for a long time
- loves painting
- cooks with her husband sometimes

Product Requirement:

- can get to know nearby facilities of certain location
- can know the nature environment around the location

Persona Type: Secondary
Persona Group: Visitors



Photo by
Darshan Patel
@Unsplash

Goals and Tasks:

- completes the 3 months field study in Ann Arbor
- be promoted to a senior engineer
- gets married with his fiancée
- finishes working on a personal computer vision project

Pain Points:

- not physically in Ann Arbor
- not know any people in Ann Arbor
- switchs between apartment information and map pages frequently

Needs:

- finds an apartment that can be leased for 3 months and is close to his working location in Ann Arbor

Jianyu

Algorithm Engineer

Demographics:

Age:

- 27

Location:

- Beijing, China

Ethnicity:

- East Asian

Education:

- Bachelor and Master degree in computer science

Family:

- lives with his fiancée

Environment:

- has lived in California for 2 years
- works for a global tech company
- has some close friends in China
- very familiar with computers

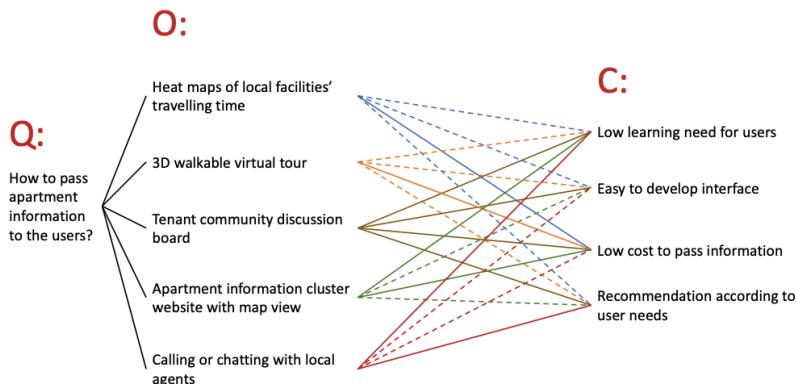
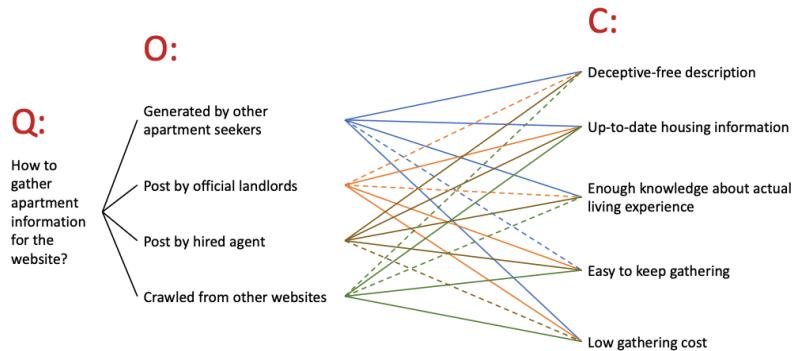
Personality:

- quiet person
- enjoys staying at home
- goes to gym sometimes
- cooks himself a lot
- enjoys taking a walk after dinner

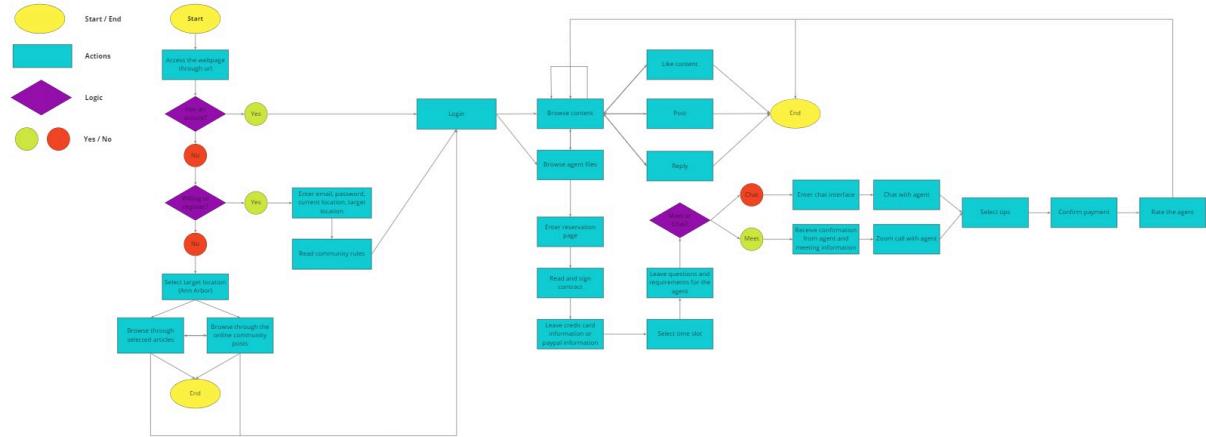
Product Requirement:

- can contact with some local people
- can have a brief introduction to how local things works
- can view the rental information together with its surroundings

QOC

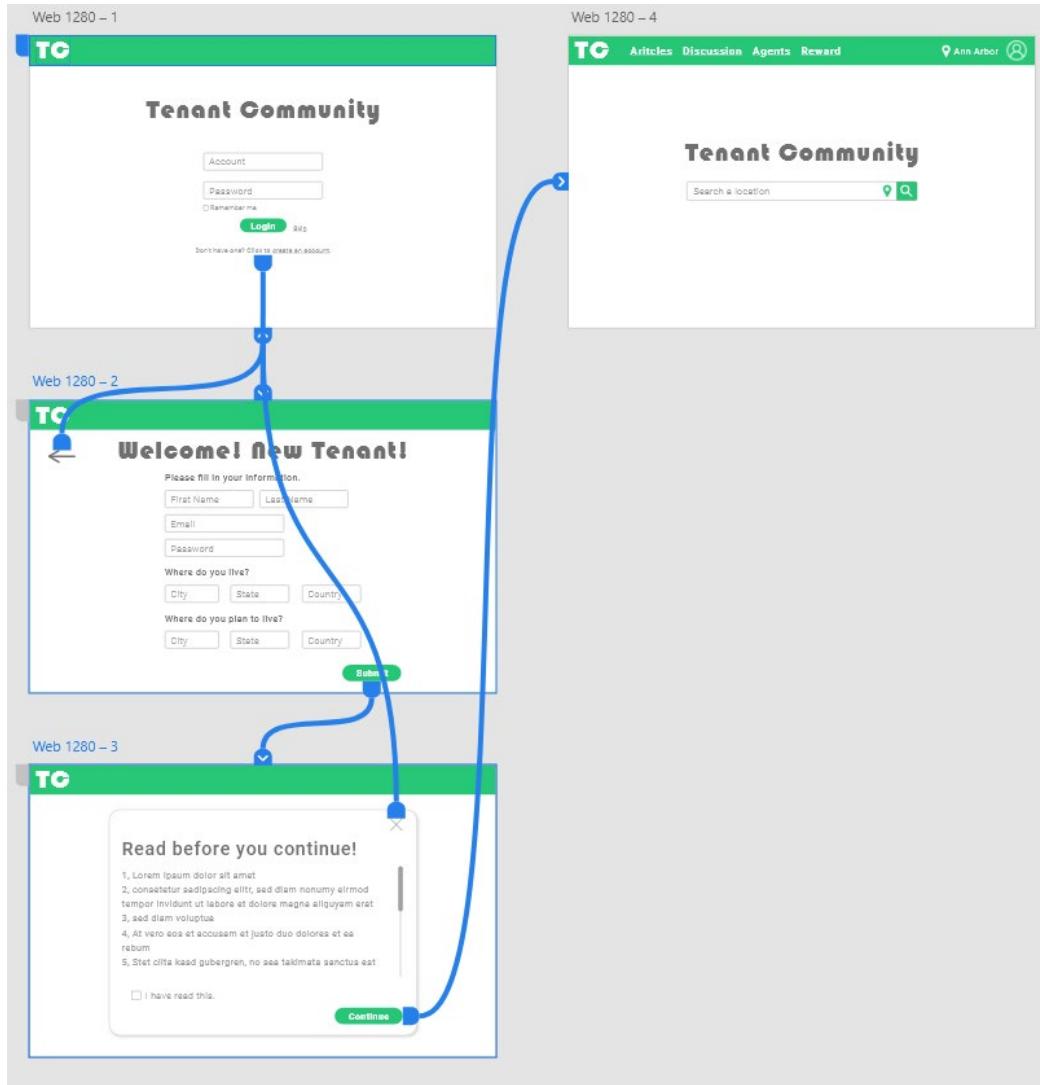


Function design



User flow

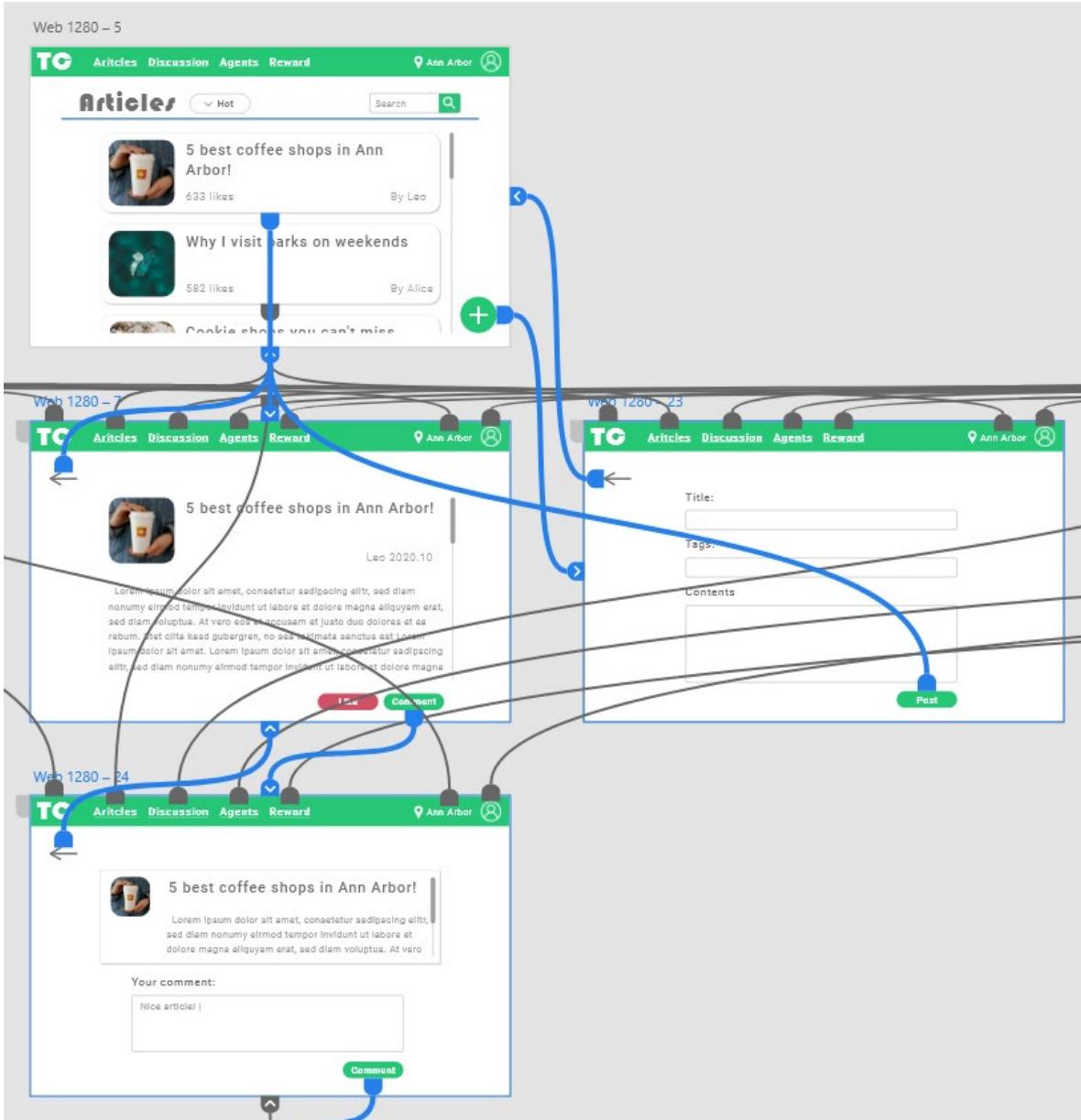
Registration



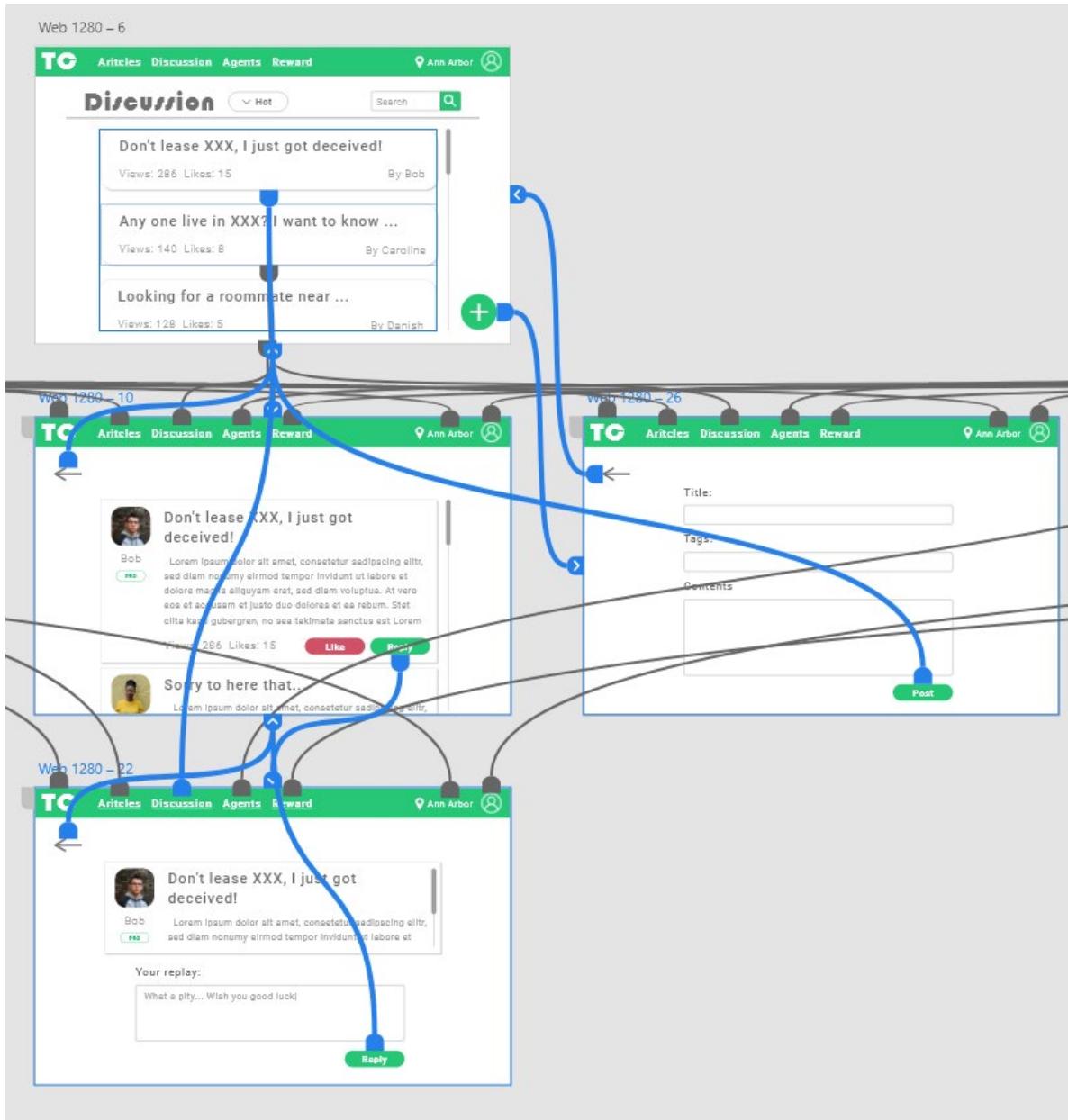
Login and skip



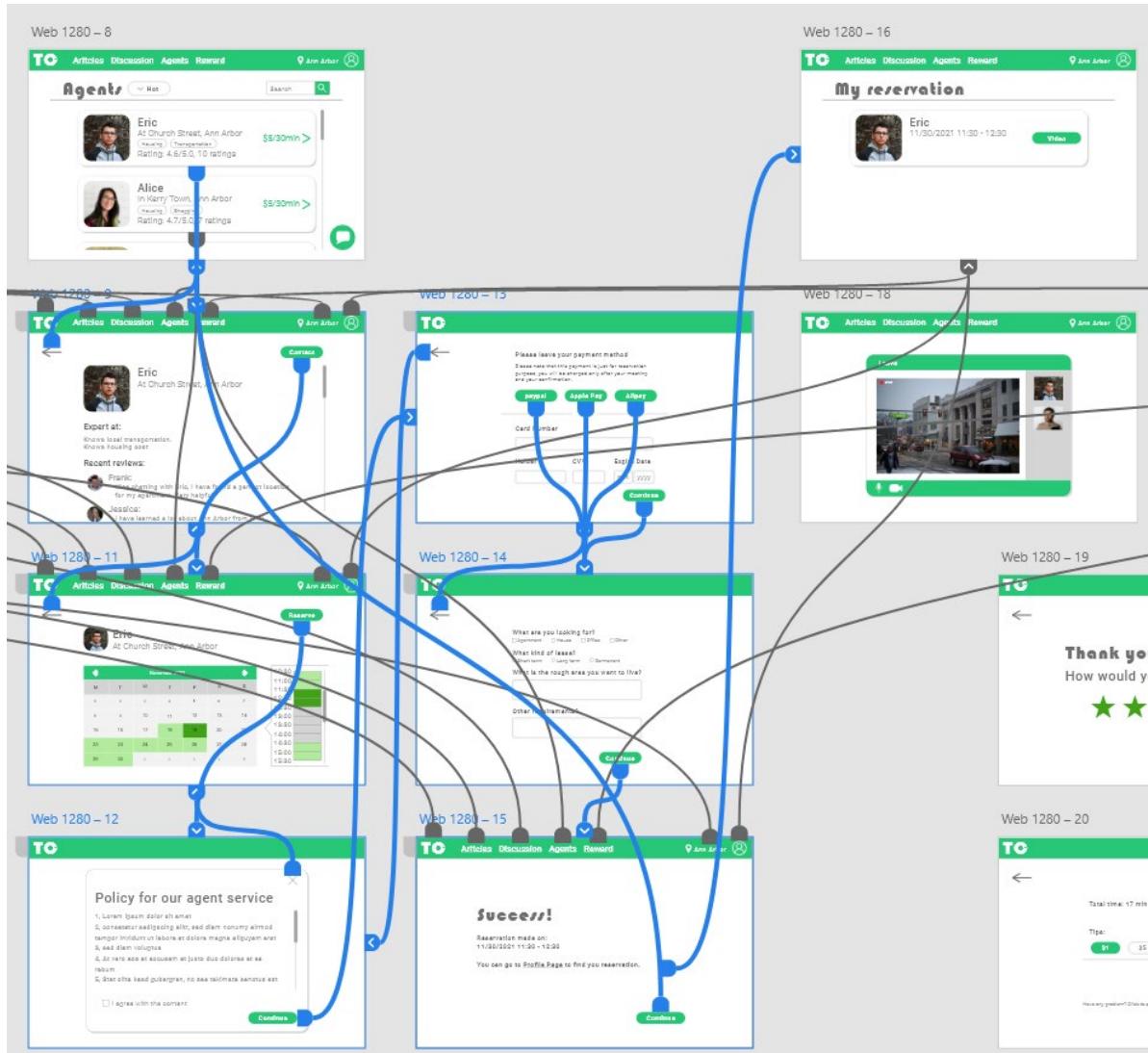
Read article and post



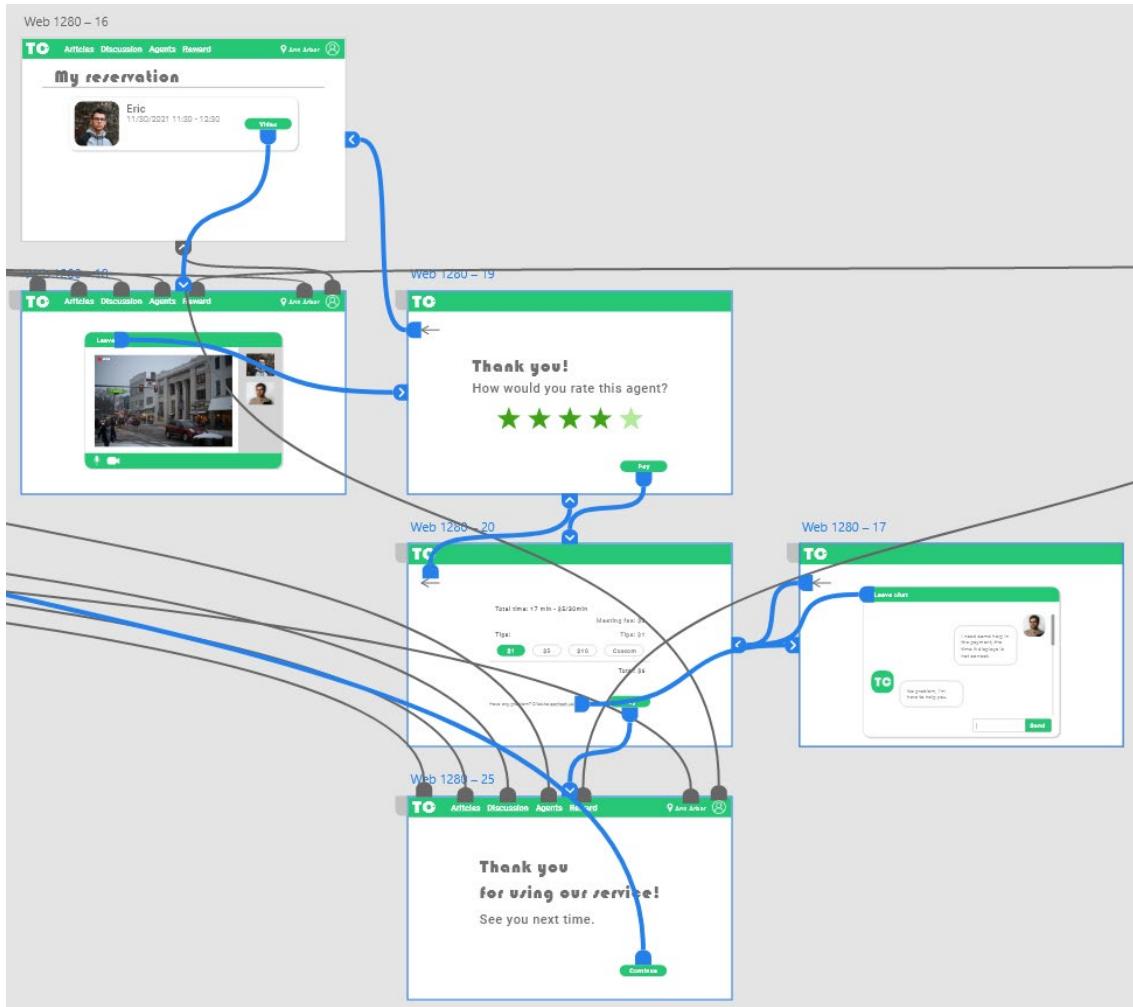
Read discussion and post



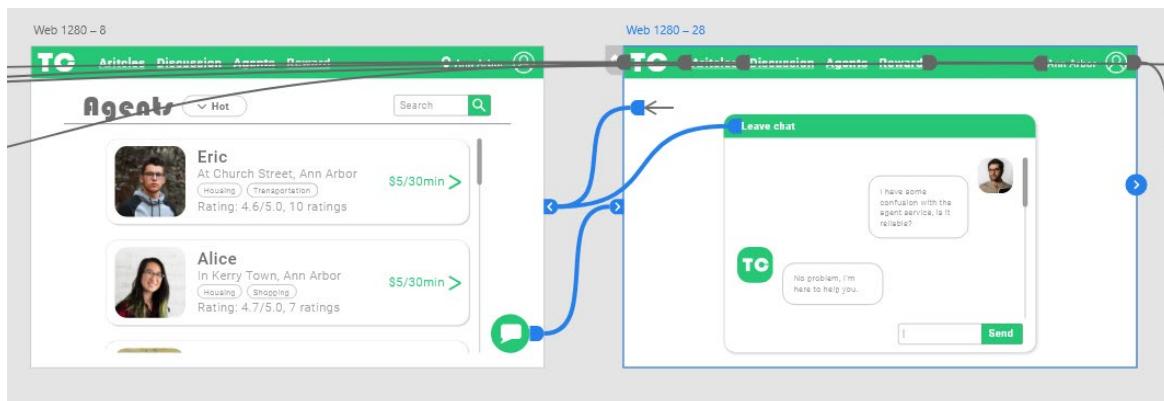
Make reservation with an agent



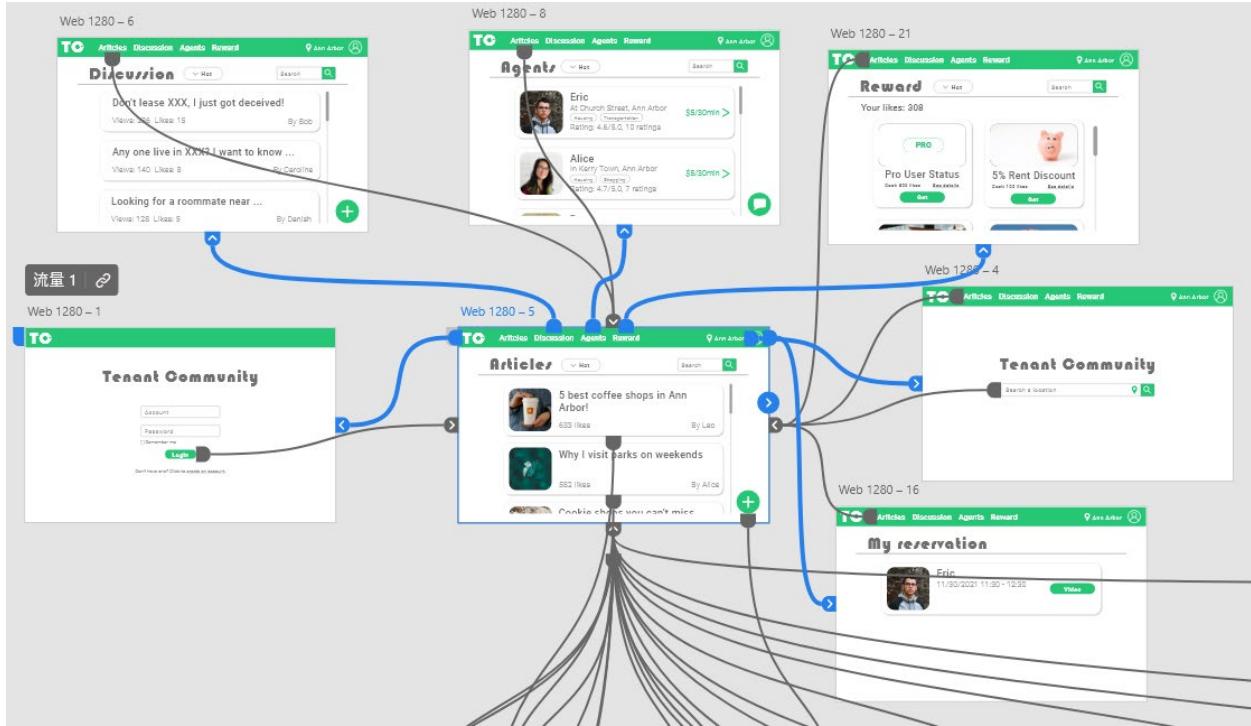
Meeting with agent



Contact us



Navigation



User interfaces

Tenant Community

 Account Password Remember me**Login**[Skip](#)

Don't have one? Click to [create an account](#).



Tenant Community

Search a location



Articles

✓ Hot

Search



5 best coffee shops in Ann Arbor!

633 likes

By Leo



Why I visit parks on weekends

582 likes

By Alice



Cookie shops you can't miss





Discussion

▼ Hot

Search



Don't lease XXX, I just got deceived!

Views: 286 Likes: 15

By Bob

Any one live in XXX? I want to know ...

Views: 140 Likes: 8

By Caroline

Looking for a roommate near ...

Views: 128 Likes: 5

By Danish



Agents

✓ Hot

Search



Eric

At Church Street, Ann Arbor

Housing

Transportation

Rating: 4.6/5.0, 10 ratings

\$5/30min >



Alice

In Kerry Town, Ann Arbor

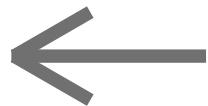
Housing

Shopping

Rating: 4.7/5.0, 7 ratings

\$5/30min >





Leave chat



No problem, I'm
here to help you.

I have some
confusion with the
agent service, is it
reliable?

 **Send**



my reservation



Eric

11/30/2021 11:30 - 12:30

Video

Reward

✓ Hot

Search



Your likes: 308

PRO

Pro User Status

Cost: 500 likes

[See details](#)

Get



5% Rent Discount

Cost: 100 likes

[See details](#)

Get



Welcome! New Tenant!

Please fill in your information.

Where do you live?

Where do you plan to live?



5 best coffee shops in Ann Arbor!

Leo 2020.10

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna

Like

Comment



Title:

Tags:

Contents

Post



Bob

PRO

Don't lease XXX, I just got deceived!

Lorem ipsum dolor sit amet, consetetur sadipscing elitr,
sed diam nonumy eirmod tempor invidunt ut labore et
dolore magna aliquyam erat, sed diam voluptua. At vero
eos et accusam et justo duo dolores et ea rebum. Stet
clita kasd gubergren, no sea takimata sanctus est Lorem

Views: 286 Likes: 15

Like

Reply



Sorry to here that...

Lorem ipsum dolor sit amet, consetetur sadipscing elitr,



Title:

Tags:

Contents

Post

[Contact](#)**Eric**

At Church Street, Ann Arbor

**Expert at:**

Knows local transportation.
Knows housing cost

Recent reviews:**Frank:**

Nice chatting with Eric, I have found a perfect location for my apartment. Very helpful!

**Jessica:**

I have learned a lot about Ann Arbor from Eric!



Please leave your payment method

Please note that this payment is just for reservation purpose, you will be charged only after your meeting and your confirmation.

[paypal](#)[Apple Pay](#)[Alipay](#)

OR

Card Number

Holder

CVV

Expire Date

 mm yyyy[Continue](#)



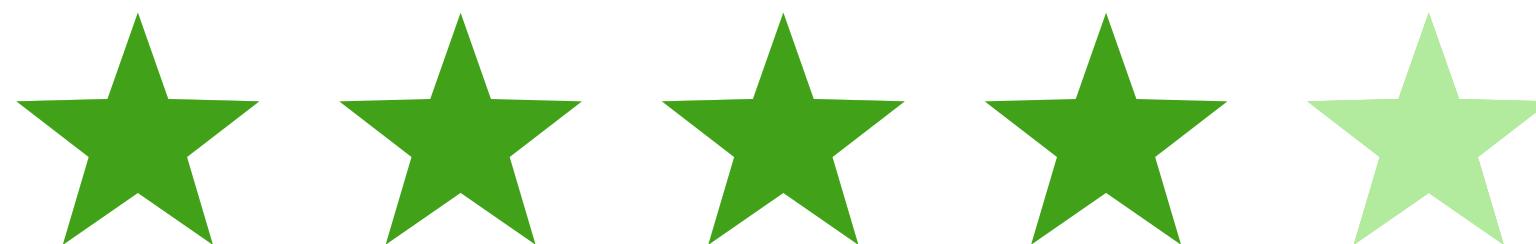
Leave





Thank you!

How would you rate this agent?



Pay



Read before you continue!

- 1, Lorem ipsum dolor sit amet
- 2, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat
- 3, sed diam voluptua
- 4, At vero eos et accusam et justo duo dolores et ea rebum
- 5, Stet clita kasd gubergren, no sea takimata sanctus est

I have read this.

Continue



5 best coffee shops in Ann Arbor!

Lorem ipsum dolor sit amet, consetetur sadipscing elitr,
sed diam nonumy eirmod tempor invidunt ut labore et
dolore magna aliquyam erat, sed diam voluptua. At vero

Your comment:

Nice article! |

Comment



Don't lease XXX, I just got deceived!

Bob

PRO

Lore ipsum dolor sit amet, consetetur sadipscing elitr,
sed diam nonumy eirmod tempor invidunt ut labore et



Your replay:

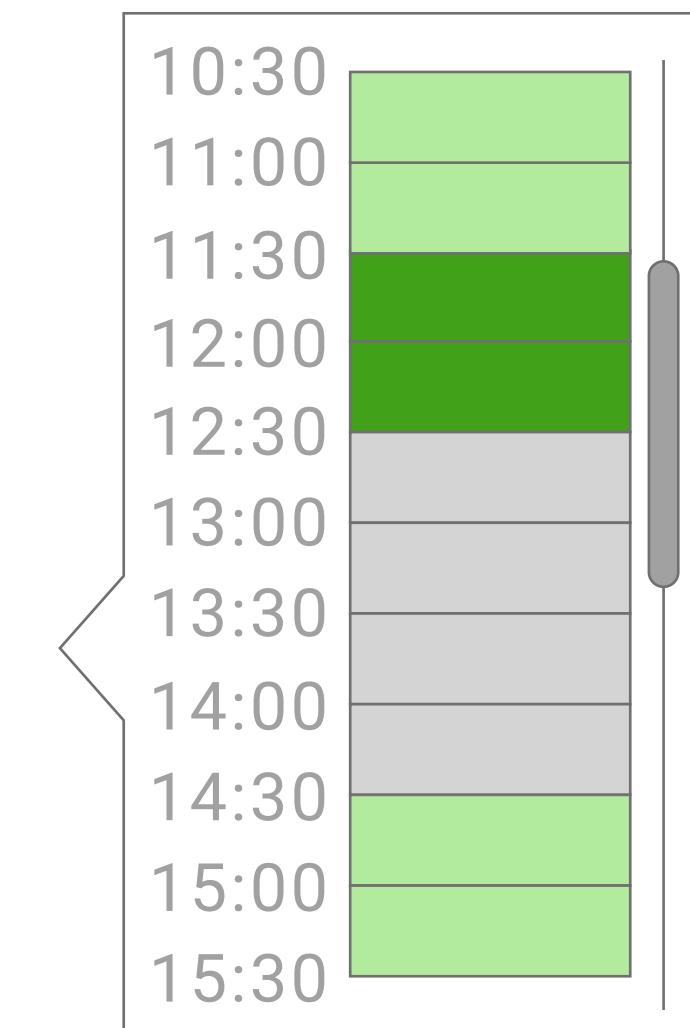
What a pity... Wish you good luck!

Reply

[Reserve](#)**Eric**

At Church Street, Ann Arbor

November 2021						
M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5





What are you looking for?

Apartment House Office Other

What kind of lease?

Short term Long term Permanant

What is the rough area you want to live?

Other requirements?

Continue



Total time: 17 min - \$5/30min

Meeting fee: \$5

Tips:

\$1

\$5

\$10

Custom

Total: \$6

Have any problem? Click to [contact us!](#)

Pay



Leave chat



No problem, I'm here to help you.

I need some help in the payment, the time it displays is not correct.



|

Send



5 best coffee shops in Ann Arbor!

Leo 2020.10

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna

Like

Comment



Policy for our agent service

- 1, Lorem ipsum dolor sit amet
- 2, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat
- 3, sed diam voluptua
- 4, At vero eos et accusam et justo duo dolores et ea rebum
- 5, Stet clita kasd gubergren, no sea takimata sanctus est

I agree with the content

Continue



Success!

Reservation made on:

11/30/2021 11:30 - 12:30

You can go to [Profile Page](#) to find your reservation.

[Continue](#)



**Thank you
for using our service!**

See you next time.

Continue