Wi-Find

Spring 2024

Group 9: Walid Abdullahi, Kevin Morales Funes, Kelsi Hill, Lisa Nguyen, Thomas Sigler

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Section 2: Teamwork Basics

Working in a group, especially with people one does not know, can be difficult. Variety of problems may arise and negatively impact project outcomes such that quality of features become subpar or deadlines are not met on time. Such difficulties teams may find themselves struggling with include poor or neglected interpersonal communication and avoidance of finding resolutions to issues that affect overall team atmosphere. To achieve a strong core of good, productive partnerships, everyone must perceive that each member contributed an equal or satisfactory amount in discussions, decision making and work towards the final product.

To enable an environment that curates good group dynamics, each member must understand and implement inclusive language or word choice to help build a safe space such that every member can voice his or her opinions. Such will enable stronger discussion and reach more well thought ideas and plans. In addition, team members must practice good discussion strategies, so each member feels like he or she has enough time to explain his or her thoughts. One way to achieve this is to reinforce taking turns to talk and discourage talking over each other. One important issue that must be addressed is that statements from one member may appear offensive or like an attack to another member since each member comes from diverse backgrounds with differing perceptions. One way to address this issue is to practice mindfulness, hold back impulsive actions, practice intrapersonal communication then ask the member to talk separately after team meetings about how one felt about the offensive statements. If no progress is made, it should be escalated to clearly communicate that their style of communication is unproductive and unhelpful and that the group should work towards some accommodation that is more agreeable to all of the members.

One of the best ways to ensure group cohesion and coordination is through the use of a central coordinator that guides and reminds team members on each member's tasks and sets goals and deadlines for the group to make sure that the project is advancing at a reasonable rate. This strategy helps clearly segment the work into achievable bits, and ensures that portions that need to work together are done when they need to be without possibly having members of the group being uninformed about what they need to do. This will also help prevent delays in the pipeline where completion of one task depends on another member's completion. This aspect is the major advantage of one, central coordinator rather than coordination via group consensus.

Lastly, it is every members' responsibility to stay focused and keep engaging in group decisions about the direction of the project. Additionally, the team must actively enforce participation from every member to be effective. This can be done by making sure that the group stays on topic when discussing directions and that decisions, even those not fully supported by the group, can be made through voting. It is important that each member uses active listening techniques to resolve issues between group members and ensure every group member's opinion is heard and processed in all discussions, decision making process and construction of the project.

Consistently practicing these techniques daily will enable a solid foundation that promotes a positive work environment where teams can work effectively to deliver a high quality product by the end of the semester. It is nonnegotiable that all of the members will feel like the product delivered is one that they contributed equally to and can take pride in saying is their own.

Section 3: Brief Resumes

Thomas Sigler
- Computer Science BS, 2021 - 2024, Georgia State University
- Currently an Undergraduate Research Assistant at Georgia State University
- Participated in SIMIODE 2023 Modeling with Differential Equations Competition, Our team won outstanding model and presentation
- Languages: Java, Python, C, C++, C#, SQL, Bash
- Version Control: Github, Plastic
- Libraries and Systems: Numpy, Pandas, Matplotlib, PyTorch, Unix, Linux, MacOS, Unity

Lisa Nguyen
- Computer Science BS, 2022 - 2024, Georgia State University
- Languages: Java, Javascript, Typescript, NoSQL
- Version Control: Git
- Libraries/Frameworks and Systems: Angular, NodeJS, NPM, Azure Cosmos, Linux, WSL, WordPress

Kelsi Hill
- Computer Science BS, 2022-2024, Georgia State University
- Languages: Java, C, SQL, HTML, Assembly Language
- Version Control: Github
- Libraries/Systems & Developer Tools: Eclipse, C shell, MySQL, VS code, IntelliJ, Unix

Walid Abdullahi
- Computer Science BS, 2022 - 2024, Georgia State University
- Languages: Java, C, SQL, HTML, R, Python, Assembly Language
- Version control: Github
- Libraries and Systems: Eclipse, Jupyter, Tableau, Linux, Azure SQL database, Visual Studio code

Kevin Morales Funes
- Computer Science BS, 2021-2024, Georgia State University

- Languages: Java, Javascript, Typescript, Bash, C, CSS, HTML
- Version control: Git
- Developer Tools: Eclipse, VM VirtualBox, Docker, C Shell, Microsoft Excel, Word, PowerPoint

Section 4: Scheduling and Planning for A1

Assignee Name	Email	Task	Duration (hours)	Dependency	Due Date	Evaluation
Walid Abdullahi	Wabdullahi0529@gmail.com	1. Brief Resume Section 2. Made Activity Diagram 3. Proofreading	2 1/2	N/A	1/24/24	100%
Kevin Morales Funes	Kevingustavo.kmf@gmail.com	1. Brief Resume section 2. Proofreading/ Revision 3. Devised project ideas	1 1/2	N/A	1/24/24	100%
Kelsi Hill	2016k.hill@gmail.com	1. Brief Resume section 2. Made Context diagram 3. Made Planning Table 4. Proofreading	2 1/2	N/A	1/24/24	100%
Lisa Nguyen	Nguy3n.lisa@gmail.com	1. Brief Resume Section for self 2. Questions 6-10 of Problem Statement 3. Proofreading/ Revision	4	N/A	1/24/24	100%
Thomas Sigler	ts309435@gmail.com	1. Brief Resume section 2. Wrote Teamwork	4	N/A	1/24/24	100%

		Basics 3. Questions 1-5 of Problem Statement 4. Proofreading				

Section 5: The Problem

1. What is your product, on a high level?
    a. Our product, at a high level, is a platform that connects sellers (renters) and buyers (rentees) of internet connections, an e-commerce platform for a specific subset of products.
2. Whom is it for?
    a. Our product is for those that want secure Wi-Fi on the go and do not need constant access to Wi-Fi, for those who have specific Wi-Fi criterias or for those who need internet access but only have extremely limited and exorbitant viable options. Additionally, another important group that we appeal to are those that want to make some extra money by renting out their Wi-Fi to others.
3. What problem does it solve?
    a. Our product presents a possible solution that is both elegant and profitable to the issue of free public Wi-Fi that is often unsecured as well as the issue of obtaining individualized Wi-Fi needs for at an affordable rate.
4. What alternatives are available?
    a. There are obvious alternatives available that are viable competitors to our product. Many restaurants, cafes, and hotels now offer free Wi-Fi to their patrons, though this is often not secure Wi-Fi. Internet Service Providers (ISPs) also offer permanent Wi-Fi for a monthly fee, the largest competitor to our product, though more expensive than our product for consumers.
    b. Other notable alternatives include continuing to have no Wi-Fi or Wi-Fi that is subpar. Commit to a costly Wi-Fi plan from internet service providers available in that area (5G, Fiber) or DSL (like NetZero). Get Satellite internet such as ViaSat which is as fast as dial up for an expensive cost and installation price or StarLink which can provide high speed internet but is sensitive to obstructions and is expensive. Commute to an internet cafe which could be many miles away or nonexistent.
5. Why is this project compelling and worth developing?
    a. This project could present a viable and competitive alternative to free, unsafe public Wi-Fi or committing to an exorbitant internet service plan; it would enable

people who are traveling or far from home to feel comfortable using a Wi-Fi connection for confidential and important actions over the Internet.

6. Describe the top-level objectives, differentiators, target customers, and scope of your product.
    a. Top Level Objectives:
        i. Shall provide a hub where clients can list their Wi-Fi up for rent, and other clients can visit the hub to rent Wi-Fi that suits their requirements by creating a website.
        ii. Shall have geolocation functionality so renters can show where their Wi-Fi is and rentees can find available Wi-Fi based on location.
        iii. Should have a secure way for monetary transaction system
        iv. Shall have a notification system for status and reminders for both renters and rentees
    b. Differentiators: (What makes this product different from what is on the market?)
        i. Conglomerates many options with varying characteristics for accessing internet service into one location so that clients who need quick, temporary Wi-Fi are able to gain access with ease.
        ii. Opens a profit opportunity for clients, who are not an internet service provider company but have internet service, to temporarily rent out Wi-Fi that the client is not using to its maximum capacity.
    c. Target Customers:
        i. For customers seeking to make profits: Clients who want to rent their internet service at a particular location temporarily.
        ii. For customers seeking Wi-Fi: Clients who want an alternative form of internet service temporarily to fulfill their current individualized need such as higher security, fast upload speed, uninterrupted internet access, fast download speed, high user capacity amount, etc. There could be many creative individualized needs; for example, a parent could temporarily rent Wi-Fi for a certain block of time for his or her child to control his or her child's allotted internet time.
        iii. All clients must be 18+ years old
    d. Scope of Product: The product will enable greater Wi-Fi quality that an individual is seeking given what he or she is willing to pay; furthermore, the product promotes profit opportunities for clients who rent out their Wi-Fi out therefore increasing diversity for individuals seeking Wi-Fi. The product is not selling Wi-Fi to clients; the product is merely a platform clients can use to do their business.
7. What are the competitors and what is novel in your approach?
    a. Our perceived competitors:

i. (for clients seeking Wi-Fi) Existing ways of gaining internet access--Hotspot, 5G, Satellite, Fiber, free public Wi-Fi (ie: Starbucks, libraries, universities, supermarkets, offices).
ii. (for clients renting out Wi-Fi). Possibly Craigslist or sites similar to it. Rent out clients Wi-Fi face to face with potential client.

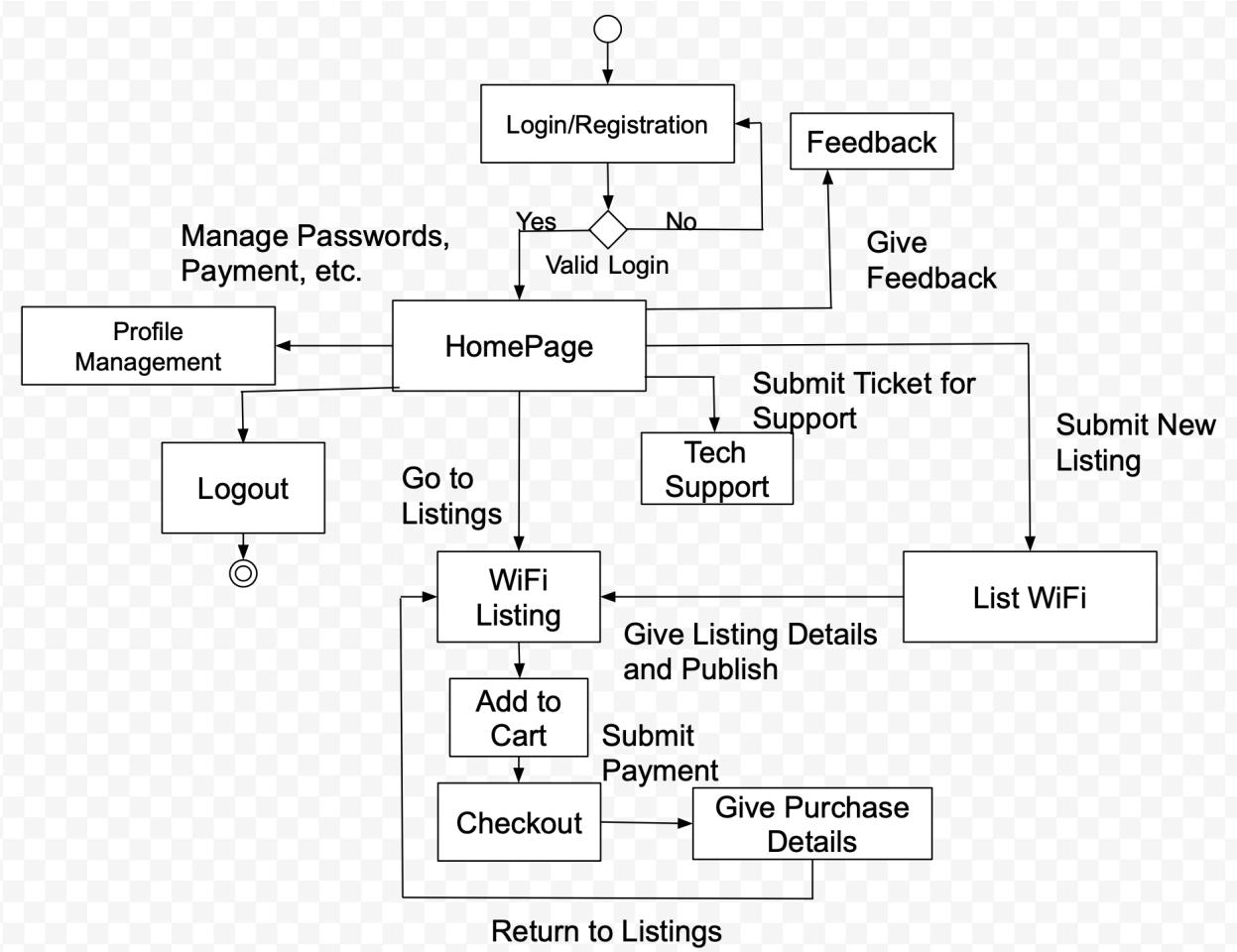
b. What is novel about our approach is that our hub allows both types of clients to get their needs in ease and break past their current limitations.
    i. For clients wishing to rent Wi-Fi, they may be limited physically since not all locations (such as new development areas or remote regions) have structures that enable internet service by a particular provider. For example, fiber, one of best choice for high speed internet, is not available in every location especially if houses are far spread as laying underground fiber lines is costly. Coverage of Hotspot services such as T-Mobile have dead zones where no service is available or service is so poor, nothing loads. Public Wi-Fi has limitations as well including commute time required to get to the destination, speed, security and limited time for access (business hours only). Clients may also want more buying power and avoid getting stuck in an internet service provider's limited plans.
    ii. For clients wishing to rent out their Wi-Fi, the hub enables them to make profit by conglomerating the demand pool to just one location.

8. Make it clear that the system can be built, making good use of the available resources and technology.
    a. Use an existing web stack that best matches the project's needs for frontend, backend, database, etc.
    b. Use Google Maps API for geolocation where renters can pin where their Wi-Fi location is and rentees can view rentable Wi-Fi's near them or around an address they enter.
    c. Use encryption for data management and server storage for processing purchases and cash exchange information.
    d. Use open source application security tools to help make the hub more secure against malicious attacks.
9. What is interesting about this project from a technical point of view?
    a. Implementing appropriate validations for Wi-Fi, transactions, identity, etc may be tricky thus reaching an acceptable solution will be interesting.
    b. Another interesting point is figuring out a strategy and implementation to maintain an acceptable update that reflects to all users viewing the site.
10. Do you have a client login and an admin login?
    a. Yes. The client login will consist of features pertaining to renting and renting out Wi-Fi. Clients should be able to do both if they wanted to (such as rent out their

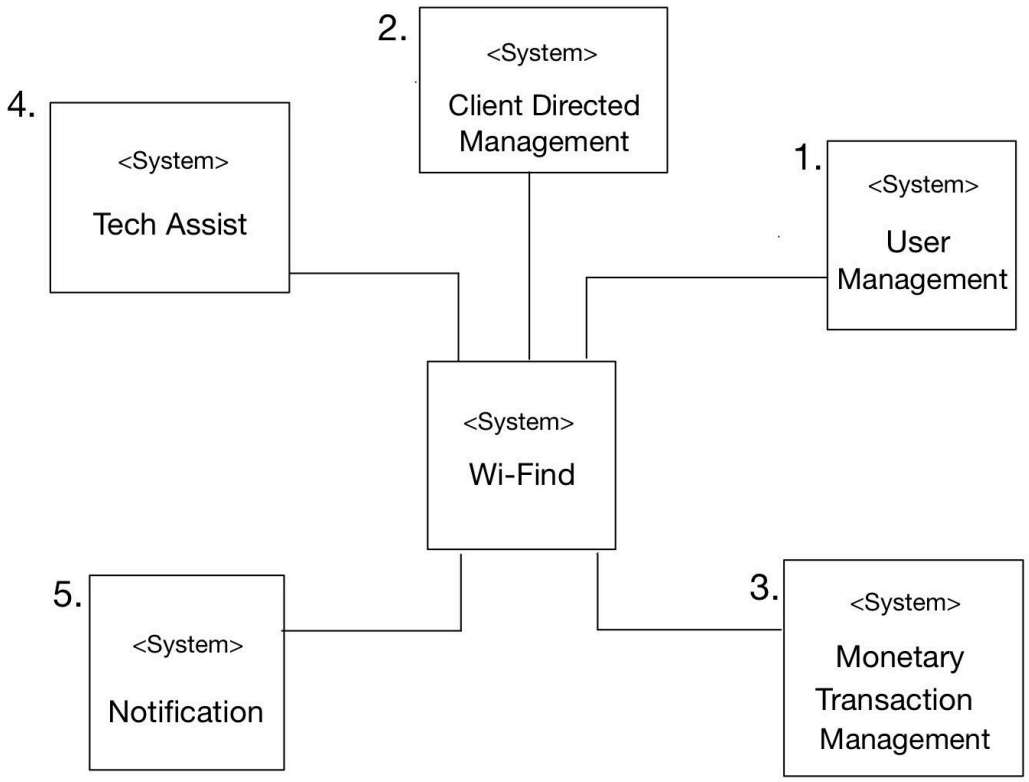
home Wi-Fi while they are on vacation in an area that has poor service leading them to simultaneously rent Wi-Fi from someone else in that area). There will be a separate admin login which will be used by the website developers and administrators where, depending on their role, are limited to information that is necessary for completing the task or maintaining the site.

Section 6: System Requirements

Activity Model:



Context Diagram:



1. Registration, Log in/out, profile management
2. Customers renting out WiFi
3. Payment/ Billing, Confirmation
4. Troubleshooting, records errors, feedback
5. Alerts users of network updates, network availability, system updates