

A UI/UX Based Mobile Application for Daily Household Services

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ABSTRACT

Domestic work is something that people do not usually talk about when they're doing research but it is a big part of our daily lives. Domestic work is very important. Most homes run smoothly because someone is doing all the domestic work jobs that need to be done every day. You know domestic work jobs like cleaning the house washing the dishes folding the laundry making dinner putting away the groceries and helping out family members are all part of work. These domestic work jobs are not hard to do. Domestic work is something that we all have to do. The hard part is doing work jobs over and again and making sure everything gets done on time. When you have a job and have to commute to work even the simple domestic work jobs can start to feel like much. In a lot of cities both people in a household have full-time jobs. Domestic work is still important even if people do not talk about work much. It can be tough to balance work, with our other responsibilities. Domestic work is something that we all have to do. It is a big part of our daily lives.. Students manage shared accommodations independently. Elderly individuals may require occasional assistance but prefer predictable routines. Despite rapid digital transformation in areas such as transportation and financial services, the coordination of routine domestic help remains largely informal. Families often depend on neighbours' recommendations or direct phone communication. While such systems can function within close communities, they lack structured scheduling records, transparent pricing visibility, and consistent feedback mechanisms.

Existing service applications typically focus on technical or occasional services. Their design often emphasizes variety and promotional engagement. However, recurring domestic tasks demand a different approach. Frequent interaction requires simplicity, not complexity. This research introduces MYHelper, a mobile application developed specifically to support recurring household services through a structured yet minimal interface. The system focuses on reducing unnecessary steps, improving clarity, and balancing service allocation fairly through backend logic. The study explores how problem identification, usability principles, and iterative design shaped the platform. Findings indicate that when digital tools align with everyday habits and reduce mental effort, users feel more confident and more likely to continue using the system. Rather than expanding features endlessly, MYHelper demonstrates that controlled simplicity can be both practical and scalable in domestic service coordination.

Keywords: Domestic Work Management, Household Service Coordination, Recurring Domestic Services, Mobile Application Development, Structured Scheduling System, Usability-Centered Design, Service Allocation Algorithm, Human–Computer Interaction, Digital Domestic Assistance, Minimal Interface Design.



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1. Introduction

Urban living has changed gradually but significantly. Work no longer ends strictly at office hours. Commute time continues to expand in metropolitan areas. Digital devices keep individuals connected even after returning home. Within this environment, people manage multiple roles simultaneously. Household responsibilities do not disappear simply because work schedules become more demanding.

It is useful to separate the difficulty of performing a task from the difficulty of organizing it. Cleaning a room or washing dishes is not complicated. However, arranging for someone to do it consistently involves communication, time coordination, and mutual understanding. When this arrangement is informal, small misalignments occur frequently. Many households continue to rely on personal networks to hire helpers. Recommendations circulate through neighbours or acquaintances. Confirmations happen verbally. If timing changes, communication depends on phone calls or messages. Although this approach may work in familiar settings, it offers limited structure. There is no centralized record of bookings. There is no visible history of completed services. If disagreements arise, documentation is minimal. At the same time, other sectors have successfully reduced uncertainty through digital systems. Ride-sharing applications provide live tracking. Food delivery platforms display real-time status updates. Banking applications confirm transactions immediately. These systems create clarity by making information visible and structured. Recurring domestic services, however, have not been redesigned with the same focus on predictable interaction. One reason may be that many service platforms prioritize occasional tasks. Booking a plumber or electrician involves comparison and evaluation. Routine cleaning or dishwashing does not. Repeated tasks benefit from familiarity. When users perform the same action regularly, they prefer consistency over exploration.

MYHelper was developed with this behavioural understanding. Instead of building a broad service marketplace, the aim was to design a focused platform for recurring domestic assistance. The emphasis was on minimizing cognitive effort, maintaining transparency, and supporting fair allocation in the background. This research examines how intentional design choices, rather than feature expansion, can simplify everyday coordination without sacrificing reliability.



Fig 1: High-Level Workflow of MYHelper Service Coordination

The diagram shows how MYHelper works step by step. The user books a service through the app. The system checks availability and assigns a suitable provider. After that, the user receives a confirmation.

2. Socio-Technical Background and Changing Domestic Needs (More Natural, Less Structured)

If we look at why household service coordination is still mostly informal, the reason is not only technological. It is closely connected to how urban living has changed over time. In many cities,

nuclear families have become common, while joint family systems are less visible. Earlier, domestic responsibilities were naturally shared among more people. Today, fewer members handle the same set of daily tasks. In most urban households, both adults are working full-time. This shift reflects changing economic and social patterns, but it also reduces the time available to manage routine arrangements. The work itself may not be difficult, yet coordinating it regularly takes effort. Students and young professionals who move to new cities often face this more directly. Without trusted neighbourhood networks, they must arrange domestic help independently. Elderly individuals may also require assistance, but highly complex apps with multiple layers and options can feel overwhelming, making simple interfaces more practical.

These changing patterns create a noticeable gap. Service providers are available, and people clearly need assistance, but the system connecting them remains inconsistent. Informal arrangements rely mainly on personal trust, which works well in familiar communities but does not scale easily to new environments. Although digital marketplaces offer ratings and online payments, many are designed around expansion and variety rather than everyday simplicity. For recurring domestic tasks, most users value reliability and quick confirmation more than multiple choices. This situation points toward the need for a solution that introduces structure without turning a routine activity into a complicated process.

3. Problem Framing: Coordination, Not Capability

An important distinction emerged during exploratory discussions conducted with participants across different age groups and occupations. Most did not express dissatisfaction with domestic work itself. Instead, their frustration cantered on coordination unpredictability.

Participants described scenarios such as:

- ✓ Waiting without clear confirmation.
- ✓ Re-explaining service requirements repeatedly.
- ✓ Adjusting schedules through multiple calls.
- ✓ Facing confusion regarding rate changes.
- ✓ Lacking documentation when disputes arose.

Interestingly, several participants emphasized that their helpers were skilled and dependable individuals. The issue was not human capability but structural organization. Another dimension involved interface intimidation. Elderly participants reported discomfort using applications overloaded with visual elements. They preferred straightforward interfaces with visible confirmation messages and minimal text density. These insights clarified that the core problem was neither technological absence nor service scarcity. It was coordination inefficiency compounded by interface complexity in existing solutions.

Therefore, the research question guiding MYHelper became:

How can a digital system introduce structural clarity into recurring domestic coordination without introducing additional cognitive burden? This reframing shifts the focus from feature expansion to interaction discipline.

4. Research Objectives and Design Intent

Based on contextual understanding and problem framing, the research established the following objectives:

1. Design for Recurrence

The interface must support frequent usage without fatigue. Actions should feel familiar after minimal exposure.

2. Reduce Cognitive Load

Decision points must be minimized. Only essential inputs should be required for booking confirmation.

3. Ensure Visible Transparency

Pricing, timing, and booking status must be explicitly displayed rather than assumed.

4. Promote Fair Allocation

Service provider assignment must balance efficiency with sustainability to avoid overburdening specific individuals.

5. Evaluate Through Real Interaction

Usability must be measured not only through task completion but also through user confidence and comfort.

These objectives collectively shaped the design philosophy of MYHelper.

5. Literature Review

Digital service systems have been studied widely in areas such as usability and platform design. Most research, however, focuses on high-transaction systems like e-commerce or financial apps. Recurring domestic services have received less focused attention. Usability research highlights the importance of reducing mental effort. When systems present too many options or unclear navigation paths, users experience confusion and delay. For recurring tasks, predictable interaction becomes more important than feature variety. Users should not have to relearn the system each time.

Digital marketplaces have improved verification, ratings, and online payments. However, as these platforms expand, they often prioritize customization and promotional elements. While this benefits commercial growth, it can complicate routine usage. Behavioral research suggests that people perform repeated actions more easily when the environment remains stable. Consistent layouts and simple pathways support habit formation. Based on these ideas, MYHelper emphasizes clarity, stability, and minimal variation for recurring domestic coordination.

5.1 Research Gap

While literature supports usability simplification and habit-based design, there is limited application of these principles to recurring domestic service coordination. Most studies address either technical service marketplaces or general mobile usability. There remains a gap in designing specifically for routine, low-intensity but high-frequency domestic tasks.

MYHelper attempts to address this gap by combining usability discipline with structured backend coordination tailored to recurring household services.

6. Research Methodology: From Observation to Structured Design

The development of MYHelper did not begin with coding. It began with listening.

6.1 Exploratory Conversations

We talked to thirty-five people in a casual but focused way. These people were from age groups and lived in different kinds of places:

- ✓ Working professionals who had jobs in companies
- ✓ Homemakers who took care of families
- ✓ Students who lived in rented homes
- ✓ Elderly people who knew how to use smartphones a bit

We did not just give them a list of questions to answer. Instead we had conversations with them. We wanted them to tell us about the things they did every day to coordinate with others. We wanted to hear their stories. This way of talking to people helped us find out things that might be annoying them. That they might not think are a big deal. The people we talked to often said they were not really sure about things than saying they were unhappy with Exploratory Conversations and the experiences they had with daily coordination, during these Exploratory Conversations. They did not necessarily demand advanced technology. Instead, they desired clarity.

6.2 Persona Development

Based on qualitative insights, four personas were constructed:

1. The Time-Constrained Professional

Values speed and minimal interaction. Likely to abandon platforms requiring repeated data entry.

2. The Elderly Smartphone User

Comfortable with basic digital interaction but hesitant about visually dense interfaces.

3. The Independent Student

Budget-conscious, prioritizes transparent pricing and predictable scheduling.

4. The Household Coordinator (Homemaker)

Manages multiple responsibilities and requires flexibility in rescheduling.

These personas informed interface layout, text density decisions, and confirmation feedback mechanisms.

6.3 Iterative Prototyping

The design process followed iterative refinement:

- ✓ Initial sketches mapped service selection flow.
- ✓ Wireframes visualized screen hierarchy.
- ✓ Low-fidelity prototypes tested navigation clarity.
- ✓ Feedback sessions identified hesitation points.
- ✓ Adjustments simplified registration and rescheduling.

Particular attention was paid to where users paused. Hesitation often indicates cognitive overload or unclear instruction. Removing unnecessary input fields significantly improved flow.

6.4 Evaluation Strategy

Usability evaluation included both quantitative and qualitative assessment:

- ✓ Task completion rate
- ✓ Average booking duration
- ✓ Error frequency
- ✓ User satisfaction scoring
- ✓ Verbal feedback

This mixed-method approach ensured that efficiency metrics were interpreted alongside emotional comfort.

7. System Architecture: Designing for Stability and Scalability

The architectural design of MYHelper follows a modular three-layer structure. However, the intention was not merely technical separation. It was conceptual clarity.

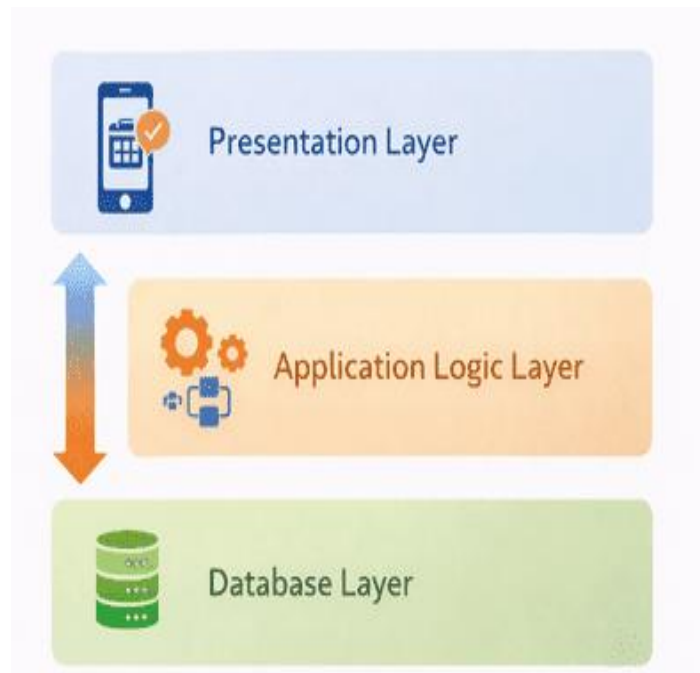


Fig 2: Modular Three-Layer Architecture of MYHelper

The presentation layer manages user interaction, while the application layer handles processing logic. The database layer stores and manages data securely

7.1 Presentation Layer

The presentation layer defines what users see and interact with. Service categories are represented through clear icons with concise labels. Visual clutter is minimized deliberately. Instead of emphasizing promotional content, the layout prioritizes primary actions.

Consistency is maintained across screens. The booking pathway does not change format depending on service type. This uniformity supports habit formation.

7.2 Application Layer

The application layer processes user inputs and executes coordination logic. It verifies availability, calculates pricing, and generates notifications. Importantly, this layer shields users from complexity. Users are not exposed to decision trees or allocation calculations. They experience only the outcome. The separation between interface and logic ensures that backend sophistication does not compromise usability.

7.3 Database Layer

The database layer securely stores user credentials, booking history, provider records, and feedback. Encryption protocols protect sensitive data. Role-based access ensures that administrative functions remain controlled. Maintaining data integrity supports long-term trust in the platform.

7.4 Architectural Rationale

The modular architecture serves three purposes:

1. Scalability without interface redesign
2. Maintainability for future enhancements

3. Stability in recurring interaction patterns

By separating responsibilities, MYHelper ensures that user experience remains consistent even as backend capabilities expand.

8. Service Allocation Mechanism: Efficiency with Fairness

One of the critical backend components is the service allocation mechanism.

8.1 Allocation Parameters

The system evaluates:

- ✓ Geographic proximity to user location
- ✓ Availability during requested time slot
- ✓ Historical punctuality
- ✓ Average rating consistency
- ✓ Current workload distribution

These parameters ensure both quality and fairness.

8.2 Balancing Workload

A purely rating-based system risks overburdening top-rated providers. Over time, this can reduce reliability due to burnout. MYHelper integrates workload balancing to distribute assignments more evenly. This approach supports long-term ecosystem stability rather than short-term optimization.

8.3 Reducing Booking Delay

By prioritizing nearby available providers, the system minimizes response time. Transparent confirmation messages inform users immediately once assignment occurs. Allocation logic remains invisible to the user but influences perceived efficiency significantly.

9. Usability Testing and Evaluation

The usability phase was designed to evaluate not only task completion but also user comfort during interaction. Thirty-five participants representing the previously defined personas were asked to perform realistic tasks: account registration, service booking, time rescheduling, and feedback submission.

9.1 Quantitative Observations

The results indicated that more than 90% of participants successfully completed a booking without external assistance. The average time required to confirm a service remained under two minutes after minor interface refinements. Error frequency was initially higher during early prototype testing, particularly during registration and payment steps. However, after reducing mandatory input fields and introducing clearer confirmation prompts, error rates declined significantly.

Task repetition further reduced completion time. Participants who performed the booking process a second time completed it faster, suggesting that the interface successfully supported habit formation.

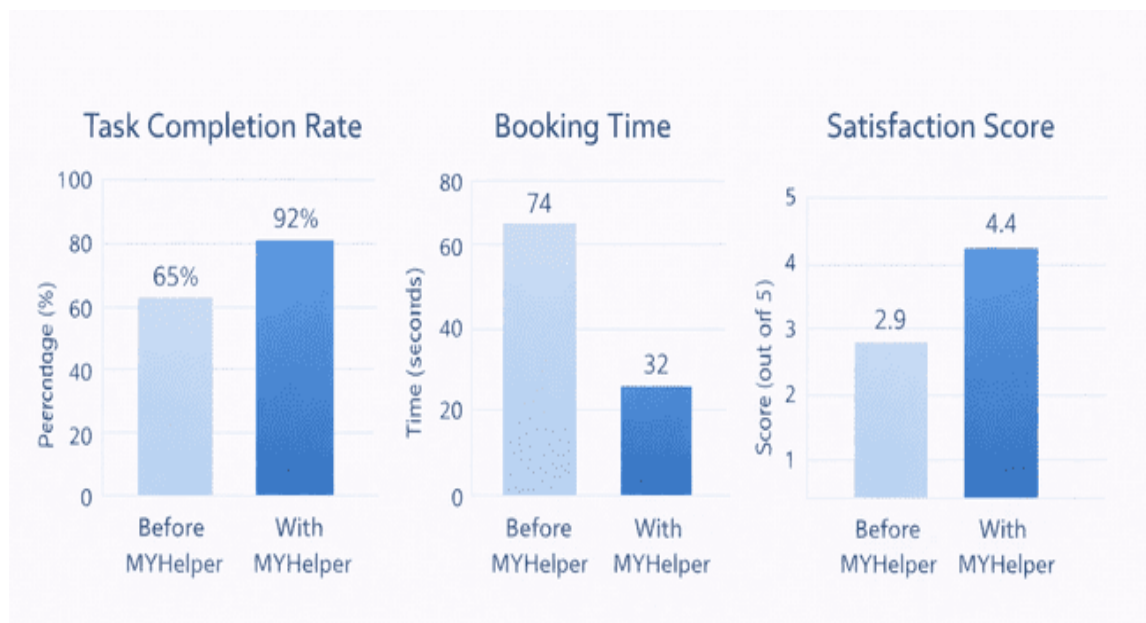


Fig 3: Usability Testing Results

The graphs show how users performed while testing the app. They indicate that most users were able to complete bookings quickly and felt satisfied with the experience.

9.2 Qualitative Insights

Beyond metrics, participant feedback revealed emotional dimensions of usability. Many described the platform as “straightforward” and “comfortable.” Elderly participants appreciated visible confirmation messages and uncluttered screens. Working professionals valued the predictable booking flow. Students emphasized that transparent pricing reduced hesitation. An important observation was that users rarely hesitated during service selection. Most hesitation occurred when pricing or confirmation steps were unclear in early prototypes. Once transparency was improved, hesitation points decreased. These findings suggest that clarity and predictability contribute directly to perceived reliability.

10. Comparative Reflection with Existing Platforms

Unlike large service marketplaces that emphasize variety and promotional visibility, MYHelper focuses on repetition efficiency. Many commercial platforms include multiple optional add-ons, discount banners, and dynamic pricing structures. While these elements may increase revenue opportunities, they introduce decision fatigue for recurring tasks.

Table 1: Comparison of Informal Methods, Existing Platforms, and MYHelper

Comparison Chart			
	Informal Method	Existing Apps	MYHelper
Scheduling	No Record	Complex	Easy
Pricing	Verbal	Variable	Transparent
Confirmation	Phone Call	In-App Message	App Notification

In contrast, MYHelper limits customization deliberately. The interface presents essential information first, reducing navigation layers. Rather than encouraging exploration, the system encourages completion. This comparative positioning does not suggest that feature-rich platforms are ineffective. Instead, it highlights that recurring domestic coordination requires a distinct design approach centered on simplicity rather than scale.

11. Future Scope

Several extensions are possible without compromising the simplicity-first philosophy. Subscription-based recurring plans could reduce repetitive booking effort further. Multilingual interface options may increase accessibility. Predictive scheduling, based on user history, could automate recurring confirmations. Advanced workload prediction models may further enhance fairness among service providers. Integration with smart home systems may streamline domestic coordination.

However, any future enhancement must preserve clarity and avoid feature overload.

12. Conclusion

This research examined how structured UI/UX design, combined with balanced backend logic, can simplify recurring household service coordination. MYHelper does not attempt to compete through complexity or scale. Instead, it focuses on disciplined interaction design and predictable workflow.

The findings indicate that digital systems aligned with habitual human behaviour foster greater comfort and sustained engagement. By minimizing cognitive load, enhancing transparency, and balancing service allocation, MYHelper establishes a scalable and user-centered framework for modern domestic service management.

Technology becomes most effective when it quietly supports daily routines rather than demanding attention. MYHelper illustrates how thoughtful simplification can transform informal coordination into structured reliability.

References

1. D. A. Norman, *The Design of Everyday Things*, Revised and Expanded ed. New York, NY, USA: Basic Books, 2013.
2. Y. Rogers, H. Sharp, and J. Preece, *Interaction Design: Beyond Human-Computer Interaction*, 4th ed. Chichester, U.K.: Wiley, 2015.
3. J. Lazar, J. H. Feng, and H. Hochheiser, *Research Methods in Human-Computer Interaction*, 2nd ed. Cambridge, MA, USA: Morgan Kaufmann, 2017.
4. M. Stickdorn, M. Hormeses, A. Lawrence, and J. Schneider, *This Is Service Design Doing: Applying Service Design Thinking in the Real World*. Sebastopol, CA, USA: O'Reilly Media, 2018.
5. J. Nielsen and R. Budiu, *Mobile Usability*. Berkeley, CA, USA: New Riders, 2013.
6. Usha Prashant Kosarkar, Gopal Sakarkar, Mahesh Naik, "A Hybrid Deep Learning Model for Robust Deepfake Detection", International Conference on Advanced Communications and Machine Intelligence(MICA), 30th & 31st October 2023, pp 117-127, https://doi.org/10.1007/978-981-97-6222-4_9