**National University of Computer and Emerging Sciences**

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**Application for Handyman Services**

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**Undertaking**

Undertaking for the Formal Report on 'Application for Handyman Services'

We, the undersigned, undertake to adhere to the completion of the formal report on the 'Application for Handyman Services.' This report aims to comprehensively document and analyze the development process, requirements, design, prototype, and future work plan for the aforementioned application.

The objectives outlined in the abstract will be rigorously pursued, focusing on addressing the prevailing issues faced by individuals seeking handyman services. Specifically, our report will delve into the inefficiencies of existing services, such as time consumption, lack of standardized fare calculation methods, and absence of a reliable progress monitoring algorithm.

The proposed solution to these issues involves the development of an efficient handyman services application equipped with a progress tracking system. This application will provide users with a seamless registration and booking experience, collaborating with a range of professional handymen to ensure reliability and accessibility.

Throughout this undertaking, I commit to the following:

1. Thorough Documentation: Providing a comprehensive overview of the application, including requirements, design, and prototype details.

2. Testing and Validation: Conducting real-time scenario testing to validate the efficiency and effectiveness of the application.

3.Implementation of Learned Concepts: Applying theoretical knowledge gained during our degree program to develop a practical and functional solution.

I acknowledge that the successful completion of this formal report will rely on diligent research, meticulous analysis, and a commitment to high standards of documentation. The report aims to present a viable solution to the identified problems while incorporating innovative approaches and technological advancements.

This undertaking signifies my dedication to the project's objectives and my responsibility for delivering a detailed and insightful report on the 'Application for Handyman Services.'

# **Abstract**

This formal report provides the details regarding ‘Application for Handyman Services’. The report covers the overview of our application. It contains the necessary requirements and design

of our application. Prototype of our application is also described in this report. In the end, workplan for our future goals is also given.

Our report addresses the problem that most of the people face when in need for handyman services. Usually, a handyman service is very time consuming and has no fixed fare calculation method. It also has no monitoring algorithm (progress tracker); hence it is not very reliable. So, we have proposed a solution that can fix all these issues.

In our report we will develop an efficient handymen services app including progress tracking system, which enables our users to register and book any service any time. It will work with various professional handymen and we ensure this that our users get a trustworthy and easily

accessible service.

We will test our application on real time scenarios to make our application efficient. By working

on this report, we will be able to implement many concepts that we have learned during the course our degree program.

# 

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**Chapter 1**

**Introduction**

There has been an increase in the demand for handyman services in Pakistan (which can be attributed to a number of factors such as neighborhood interest, market impact, having second homes, and business property support), as well as people's lives becoming busier and more rushed, with more people now looking for help with unspecialized temp jobs around their home, such as changing light fixtures or setting up racks. The present handyman service arrangements attempting to address this issue are fragmented, with contacts scattered over the internet and no systematic method for determining the location and kind of administration provided by these handymen.

We are developing a robust Handyman service application, including a progress tracking system, which will allow our customers to register and book at any time. It will work with a number of skilled craftsmen to ensure that our clients receive reliable and easily accessible services. For today's job seekers, this service is indispensable because it provides a platform for them to easily and efficiently communicate and get jobs from users. This helps build public confidence in the service of handymen by providing them with a distinction between qualifications and details of work history to assess the standards of handymen.

**Intended Audience:**

An effective handyman application is designed with a specific target audience in mind to ensure its functionality and features align with users' needs. The intended audience for a handyman application typically includes:

1. **Homeowners:**
   * Homeowners looking for reliable and skilled professionals to address various home maintenance and repair tasks.
   * Individuals seeking convenient solutions for common household issues without the hassle of finding and vetting service providers manually.
2. **Tenants:**
   * Renters seeking quick and efficient solutions for issues within their rented space.
   * Tenants often require prompt assistance for repairs and maintenance, and a handyman app can provide a convenient avenue for reporting and resolving problems.
3. **Small Business Owners:**
   * Small business owners looking for reliable handymen to address maintenance issues in their commercial spaces.
   * Entrepreneurs seeking a platform that connects them with skilled professionals for tasks ranging from plumbing to electrical work.
4. **Busy Professionals:**
   * Individuals with hectic schedules who value the convenience of quickly finding and scheduling reliable handymen for home repairs.
   * Busy professionals appreciate a user-friendly app that simplifies the process of managing household maintenance tasks.
5. **Elderly or Physically Limited Individuals:**
   * People who may face challenges in performing household maintenance tasks themselves.
   * Elderly or physically limited individuals benefit from an easy-to-use app that connects them with trustworthy professionals for assistance.

**Definitions, Acronyms, and Abbreviations Handyman:**

* + Definition: A person skilled in a variety of repair and maintenance tasks around the home or property.

1. **Home Maintenance:**
   * Definition: The regular upkeep and repair of a residence or property to ensure it remains in good condition.
2. **Repair Services:**
   * Definition: Professional services aimed at fixing or restoring items, systems, or structures that may be damaged or malfunctioning.
3. **Odd Jobs:**
   * Definition: Small and miscellaneous tasks or repairs around the house that do not necessarily fall into a specific trade category.
4. **DIY (Do It Yourself):**
   * Definition: The practice of undertaking tasks or projects independently without the direct assistance of professionals.

**Acronyms and Abbreviations:**

1. **HM:**
   * Acronym: Handyman
2. **DIYer:**
   * Acronym: Do It Yourselfer
3. **HVAC:**
   * Acronym: Heating, Ventilation, and Air Conditioning
4. **PL:**
   * Abbreviation: Plumbing
5. **ELEC:**
   * Abbreviation: Electrical
6. **CARP:**
   * Abbreviation: Carpentry
7. **APMT:**
   * Abbreviation: Apartment Maintenance
8. **R&M:**
   * Abbreviation: Repair and Maintenance
9. **GC:**
   * Abbreviation: General Contractor
10. **PPE:**
    * Acronym: Personal Protective Equipment

**Chapter 2**

**Project Vision**

**Problem Statement:**

The problem identified is the inefficiency, lack of standardization, and unreliability in the handyman service industry, particularly in Pakistan. Common issues include:

1.  Lack of a fixed fare calculation method.

2.  Time-consuming processes for finding and hiring handymen.

3.  Absence of a progress tracking system.

4.  Fragmented and scattered information about available handymen.

5.  Difficulty in accessing handyman services during emergency situations.

**Proposed Solution:**

The research project aims to develop an efficient handyman service application with a progress tracking system. The solution involves:

1.  Creating a user-friendly mobile application that allows customers to register and book services at any time.

 2.  Partnering with skilled craftsmen to ensure reliable and easily accessible services.

3.  Implementing a progress tracking system within the app to monitor the status of ongoing tasks.

4.  Streamlining the process of finding and selecting appropriate handymen in a given area.

 5.  Addressing the need for quick assistance in emergency situations through the app.

Through this research and the development of the mobile application, the goal is to provide a comprehensive solution to the identified problems in the handyman service industry, making it more efficient, accessible, and reliable for both customers and service providers.

**Source of Primary data**

For research on the development of a Handyman service application and its impact, you can collect primary data from various sources. Here are some potential sources of primary data:

1.  User Surveys

2.  Interviews

3.  Focus Groups

4.  Field observations

**Project Scope**

The scope of project is as follow:

 • This interface links the user with handyman profiles

 • Application will find you the best handymen in your surrounding neighborhood

• The user chooses the most suited profile for a certain work

• It checks for the handyman's availability

• The application uses a special algorithm to calculate labor

• The user and the handyman rate one other's profiles

**Objectives:**

The primary objectives of this project are as follows:

1. Develop a mobile application that simplifies the process of finding and booking handyman services.

2. Enhance trust and reliability by providing user ratings and reviews for handymen.

3. Create a platform that benefits both customers and handymen in need of jobs.

4. Improve the efficiency and accessibility of handyman services in the target market.

We look forward to the opportunity to develop and deploy this application, and we are open to further discussions and collaboration to bring this project to fruition.

**Business Opportunity:**

Handyman services offer a lucrative business opportunity fueled by increasing homeownership, aging infrastructure, busy lifestyles, and the rise in rental properties. Specialized services, technology integration, and catering to the elderly population contribute to the sector's growth. With flexible business models and a focus on local markets, entrepreneurs can tap into this demand for convenient and reliable home maintenance solutions.

**Chapter 3**

**Literature Review / Related Work**

According to the article assessing the challenges of being a handyman involves two key aspects: the practical work itself and the business skills required. Some excel at repair tasks but lack business acumen, while others are adept at running a business but have limited repair skills.

Finding clients is a significant hurdle; effective marketing is crucial for a good income. Workload management can be tricky, and declining tasks is better than overcommitting. Business operations require skills in accounting, marketing, and more, which can be challenging for some. Some handymen opt for established franchises for simplified business management.

Flexibility in scheduling is a perk, but emergency requests can disrupt personal commitments. The profession provides financial stability, but it relies on your ability to work, making injury or setbacks a potential setback.

In conclusion, a career as a handyman involves a two-fold consideration: the practical work and the business skills required. The tasks are generally straightforward, drawing many into this line of work. However, finding clients can be a major challenge, and workload management is crucial to avoid overcommitment. Running the business side requires skills in accounting, marketing, and more, which can be a hurdle for some. While handymen enjoy schedule flexibility and financial stability, the risk of accidental injury or property damage is a significant concern. By carefully navigating these challenges, handymen can succeed in this dynamic profession.

By the article “COMPARATIVE ANALYSIS AND HANDYMAN SERVICES APPLICATION DEVELOPMENT’ we get to know about the Android Handyman Application which offers a quick and dependable way for users to connect with skilled blue-collar workers in Pakistan. The idea for this app stemmed from the challenges people face in finding competent professionals for household tasks. In Pakistan, there's a noticeable lack of Android-based applications that provide this convenience to smartphone users.

Given the increasing use of the internet on smart devices, the application's scope aligns well with this trend, driven by more affordable smartphones. Pakistan, as a developing country, holds significant potential in the mobile software industry. The surge in smartphone usage is likely to continue, creating new opportunities in the blue-collar sector. In a world where technology continually advances, applications like this one cater to the growing reliance on technology to meet everyday needs.

Small and medium-sized enterprises (SMBs) often face resource constraints and operational challenges, making it imperative to efficiently manage various aspects of their business. In this context, handyman services emerge as crucial assets. Handyman services, as highlighted by the article "Handyman Services are Necessary for Businesses" [1], offer versatile support to businesses, allowing them to focus on core tasks. These professionals, often referred to as jacks-of-all-trades, play an essential role in addressing a range of repair and maintenance needs. The cost-effectiveness of hiring a handyman is underscored, as a single professional can handle multiple tasks, eliminating the need to engage specialized contractors [1]. Furthermore, regular maintenance checks can prevent more extensive and costly repairs, aligning with the importance of preventive measures in managing business expenditures [1]. Safety and expertise are paramount, as handymen with their knowledge and skills help minimize the risk of injuries or accidents during maintenance tasks, thereby protecting employees and businesses from potential legal issues [1]. The time-saving benefits of hiring a handyman are especially critical for SMBs, where operational disruptions can significantly impact sales [1]. Moreover, maintaining well-functioning facilities enhances customer satisfaction, as businesses that present well-maintained physical spaces tend to earn the trust and satisfaction of their clientele [1]. By providing businesses with the support they need, handymen allow owners to remain focused on their financial and organizational goals, promoting overall business success [1].

Amrita Singh's blog post serves as a comprehensive guide for individuals interested in entering the on-demand handyman app market in 2023. The blog[2] highlights the growing demand for on-demand handyman services and the role of mobile apps in meeting this demand. The blog [2] provides up-to-date statistics on the expanding handyman service market and distinguishes between single-service aggregator apps and multiple-service aggregator apps, aiding readers in understanding the available business models. It offers a step-by-step guide to building a handyman app, covering essential aspects like target audience identification and pricing strategies. The blog’s [2] focus on must-have features, including customer tracking, multiple payment options, appointment scheduling, and transparent pricing, underscores their significance in enhancing user engagement. The conclusion summarizes key takeaways, emphasizing meticulous planning, competitor analysis, legal considerations, niche selection, and pricing strategies. Overall, Amrita Singh's blog [2] is an invaluable resource for entrepreneurs interested in venturing into the on-demand handyman service market in 2023, offering well-organized, up-to-date, and actionable information to guide them through the app development process.

The article[3] addresses the growing need for a user-friendly platform that connects people in Pakistan with local technical professionals for home and office repairs and maintenance services. This issue arises due to the lack of an efficient system for hiring such professionals, leading to both customers and job seekers facing challenges. To bridge this communication gap and leverage the widespread use of smartphones, the authors propose the development of an Android application called "Renovate-It" along with a corresponding website[3]. Renovate-It[3] aims to serve as a solution to this problem by facilitating communication between users and experts with various technical skills. It incorporates features such as Google Maps, navigation, and real-time location tracking to enable geo-based searching and hiring. Through the app[3], users can easily locate and connect with professionals based on their expertise, initially covering categories like Decorators, Electricians, Mechanics, and Plumbers, with room for expansion. The implications of this research are significant, as it highlights the potential of mobile applications and technology to address the challenges in accessing repair and maintenance services, and it emphasizes the importance of providing an accessible platform for both service providers and seekers, ultimately improving the quality of services in Pakistan's maintenance and repair industry.

**Related Work:**

**1-Mahir company**

Mahir Company is online marketplace connecting service providers and seekers in a hassle-free and safe way. With our state-of-the-art website, Mahir Company App, and Mahir Partner App, we are bridging the gap between our customers (consumers and vendors). Now they can connect more efficiently, reliably, safely, and affordably, to enjoy a better living style.

Launched as Mr. Mahir, Mahir Company has grown exponentially over three years. Indicators like service-wise growth, geographical expansion, number of downloads on the apps, and monthly traffic on the website validate the above claim.

Service-wise Growth: Starting with a few Maintenance Services, we now offer 161+ Home Maintenance Services, 38+ Personal Care Services, 8 Cleaning Services, five fumigation services, and our Monthly Home Maintenance Subscription Packages.

Geographical Expansion: Starting from Lahore with home maintenance services only, we now offer home maintenance services in the four major cities of Pakistan (Lahore, Karachi, Islamabad, and Rawalpindi). Personal care services are provided in Lahore, Islamabad, and Rawalpindi.

**2-The handyman.com.pk**

The Handyman Pvt. Limited is a facilities management company providing construction, renovation, and various on-call maintenance & repair services. Established in 2014, we are proudly serving thousands of customers in Islamabad & Rawalpindi. We are registered with Securities Exchange Commission of Pakistan (SECP) as well as Pakistan Engineering Council (PEC). We provide air conditioning, carpentry, electrical, plumbing, MEP, masonry and janitorial services. We also provide construction, renovation & facility management services. Our services are available to both households and corporate customers.

The Handyman now offers outsourcing services. Please visit the [manpower outsourcing, payroll & EOR services](https://www.thehandyman.com.pk/service/outsourcing) page for further information.

 Office 1, Second Floor, above NBP, 4A Utility Store Plaza, F-8 Markaz, Islamabad, Pakistan

**CHAPTER 4**

**Methodology**

**4.1 Introduction**

This section describes the product strategies used in the framework's evolutionary cycle. In this study, agile development techniques were used as the primary structure for planning, creating, and evaluating the proposed framework.

**4.2. Agile Development Methodology**

This study utilized an agile technique established by a group of practitioners and consultants (Beck et al., 2001). A smooth strategy is a subset of iterative and transformative approaches that rely on iterative upgrades and significant improvements. Each cycle is a small, independent effort with exercises leading up to need research, planning, use, and testing, with each focus point coordinating all products across the group and a subset of the final framework. Leads to the focus point of developing. The purpose of the short iteration is to ensure that feedback from before iteration N and other new information lead to improvements and customization of iteration N + 1 (Boehm, 2007).

**4.2.1 Planning Phase**

The main phase is organization, which involves creating procedures for setting set goals. Play each action, estimate the time required to build each utility, plan a schedule, and determine additional outcomes. This helps distinguish between frameworks and assets for building timing.

**4.2.2 Requirements Analysis Phase**

This stage includes dissects of a rundown of utilitarian, nonfunctional and specialized framework Requirements as assembled from the clients to help with deciding the possibility of the framework to be created. This exploration utilized a study that was managed by methods for surveys as to an example of handyman services administrations people and arbitrary customary individuals out of an objective populace.

The survey structure utilized both shut and open-finished inquiries. An organized methodology was utilized to deliver a legitimate poll. Cross-checks were additionally used to 24 guarantee legitimacy of the survey. The discoveries of this exploration lead to the plan; Implementation and testing of a versatile application as that would help in Finding handyman services administrations inside a territory.

**1.Survey location**

This survey was conducted in Lahore. The study area was located in South Lahore due to the types of population that make up the customer base of the application and the diversity of craftsmen encountered in the area. Most of the people there also have smartphones, so the location is good.

**2.Target population**

The target population is 83 people. This study focuses on craftsmen who provide different types of management, such as plumbing, electrical appliance repair, and vehicle repair, as well as traditional people who generally live near Nairobi and need to manage craftsmanship services. I did.

**3.Sample size**

Each individual had the opportunity to become part of the sample population in order to determine the sample size. However, the required sample size was 96, depending on availability. Eighty-three participants participated in the study. This sample size was selected using a simple random sampling process. The sample sizes were divided into two groups, 20 craftsmen and 63 customers, all based in Lahore.

**4.Sampling Strategies**

The research used simple random sampling method where respondents were selected randomly from the target population. This technique was used to ensure that all the respondents in the target population had an equal chance of being chosen.

**4.2.3 Data Analysis and Functional Modelling**

According to Nazimova (2006), the purpose of data analysis is to obtain useful and useful information. The descriptive analysis was used for a comprehensive analysis. Wearing process

Data collection with pre-made surveys was performed using Google Forms. We used Google Analytics to analyze the respondents' data. Object-oriented analysis was used for comprehensive analysis and modeling of user requirements. This process involved identifying all the objects in the system and their relationships. The functionality of the system was then modeled using use case diagrams and descriptions. The process of the system was modeled using a sequence diagram. The database was the last point where the entity relationship diagram was displayed with all the tables in the database and their attributes and relationships.

**4.2.4 Design Phase**

The project feasibility study was based on a literature search. Uniform modeling

The term Language (UML) is used to model and design diagrams that represent both structural and operational aspects of a system & # 40; Object Management Group, 2015 & # 41 ;. We designed the study using various UML diagrams, including use case diagrams.

**1.Use Case Diagram**

The Use Case Diagram was used to model system functionality. Since the function of the system was identified, the system was identified and separated into actors and use cases. The actors in this system were craftsmen, customers, and managers. The use case or action to be performed was presented as text (Object Management Group, 2015).

**2.Sequence Diagram**

The system sequence diagram was used to show how information is passed between the main units of the system and was used to model the system flow (Object Management Group, 2015).

**3.Entity-Relationship Figure**

This was used to show tables, their attributes, and relationships, and was used to model a database (Object Management Group, 2015).

**4.Database Design**

Entity-relationship diagram allowed us to develop a database design that shows the relationships between different entities and their attributes. The system's wireframes were designed using a desktop tool called Balsamic ([https://balsamiq.com](https://balsamiq.com/)) that helps developers visualize what the final interface will look like.

**4.2.5 Building Phase**

**Construction stage**

At this stage, the actual development of the system related to the above design takes place. This included creating mobile and web applications connected to the database. The following is the approach used in application development.

**i. Mobile Application**

The mobile application was developed on the Android platform using Java for Android and the PHP5 programming language with JavaScript Object Notation (JSON). It was used to build communication logic to communicate with the database. Android was chosen as the main platform for mobile application development because it is easy to learn and use and is free to use with extensive community support.

**ii. The web application**

web system was developed using the PHP5 development framework Laravel ([https://laravel.com](https://laravel.com/)) and a web scripting language including HTML5, CSS, JavaScript, React and jQuery. The main development environment was the NetBeans IDE (<https://netbeans.org/>) running on the Linux operating system. I used the Apache web server to host and test the system locally. Laravel and React was chosen as the leading development framework because of its stability, security features, and high performance.

**iii. Database**

The database used to store and retrieve data was MySQL because it was free, open source, lightweight, easy to use, and customizable (Oracle, n.d.).

**4.2.6 System Testing**

In the system testing process, we tested the application after development using the following techniques:

i. Usability test

This was done to determine the ease of use of the application. To perform this exercise, a total of 10 respondents were selected to test the application and provide feedback. This feedback was useful because it was used to improve the application and validate the system.

ii. Functional testing

This was done to test the functional and non-functional requirements of the system.

iii. Compatibility test

This included testing web applications on different web browsers and mobile applications on different Android phones to ensure compatibility.

iv. Performance test

This was done to see how long it took the application to process the request or perform a particular function. Run queries and monitor their execution and the time it takes to execute. Verification in

v. Validation

To verify whether mobile applications streamline the process of attracting merchants, a sample of 20 respondents consisting of merchants and customers was selected from the target population and tested. The entire process of finding and requesting services from

The craftsmen were tested and the analysis of the feedback collected led to this verification. Validation was also performed by analyzing the feedback from the data acquisition process.

**Chapter 5**

**System Design and Requirements**

**5.1. Foreword**

This chapter details two sections, data processing and device architecture. Computing reflects the data collected, and device analysis and architecture processes how the collected data is transformed into individual designs of the system.

**5.2. Data analysis**

Most of the data was collected through printed interviews and surveys and distributed to respondents and others sent online via email or Google Forms. Other data is taken from the analysis of the entire work phase

**5.3. Target layer**

In this way, the target audience is dispersed, and the response rate of the general public, who is the intended consumer of the machine population, is 64%, which is a strong response rate, and the response rate of 30 do-it-yourselfers is It was within the acceptable range. 58 percent. Knowing this, the sample population was well protected.

**5.4. Challenges for users**

A significant number of people faced problems in locating handyman services within their current city, such as electrician, plumber, phone repair, computer repair etc. 79 individuals who were 76 percent of the population sample face this task, while 21 individuals who are 21 percent of the population use manual means of locating these handymen, such as wandering around and telling friends to locate the time-consuming and not quite effective handyman service.

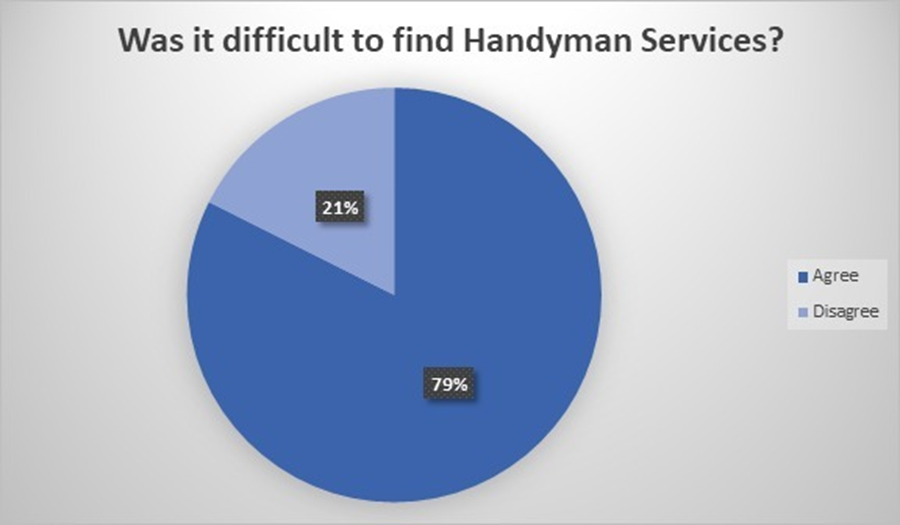


Figure 4.1: Problems when searching for handyman services

**5.5. Mobile application feasibility**

To enable consumers to discover the craft services around them, they need to discover the essence and value of smartphone applications. He made some suggestions and the suggestions were widely accepted. The rating function was considered feasible because it was very helpful in determining the rank.

users often wanted a device that could provide information from merchants and new settlements near their location. From the data collected, it became clear that such a system was needed by the user and the new system was very important.

**5.6 Requirements Analysis**

⦁ **Operational Requirements**

The skills, tasks, and basic operations that a deployed application must be able to perform are operational requirements. These include:

⦁ Create an account that allows customers and DIY enthusiasts to set a username and password for login. ⦁ Account Activation-The merchant must activate the account to log in.

⦁ Login and Logout-Users must enter the correct username and password, and to log in to the application, they must log out to exit the application.

⦁ Update Handymens needs to update records such as region of use, type of service billed, area of ​​use of the customer, etc. so that they can be seen by the customer. ⦁ Search for craftsman services. This includes logging in to the application and selecting a craftsman's management classification. H. Craftsman, circuit tester, technician. The framework searches for craftsmen who are close to the client's current area and displays a list of craftsman details within the selected classification and presentation. ⦁ View Craftsman Profile After the search results, the customer selects different craftsmen on the map to view profile information such as the number of completed jobs and the rankings offered. ⦁ Craftsman Service Request-After browsing the profiles of various craftsmen, customers request the desired craftsman. ⦁ Approve and reject job requests-The craftsman is notified by the system for each new request and can approve or reject the request. ⦁The artisan service rating feature allows customers to enter comments and use a 5-star rating widget. This widget can be selected from 1 to 5 stars, which is calculated by the application as a 15 rating score.

ii**. Non-operational requirements**

These are essentials that can be run without a framework, but they are fascinating properties that make a framework intelligent and easy to understand. These include: The

⦁ security backend web application has a director with permissions on the

⦁ username and password. Keep an error log and report errors for troubleshooting issues.

⦁ Execution-The framework must have a reasonable reaction time when using its capacity.

⦁ The accessibility framework must always be accessible.

⦁ Adaptability-The framework needs to respond effectively to future improvements and updates.

iii**. Technical requirements**

To run the application, you only need an Android phone with an Android operating system version of 9 or higher and an API level of 11 or higher. The ROM of the phone should be over 230MB and the RAM should be at least 2GB. Available online and accessible by phone, the Web Edition can be run on any device connected to the Internet.

**Chapter 6**

**6.1. System Implementation**

This mobile application was developed for Android phones due to its availability and ease of understanding. We developed this application in Java and PHP5, due to these languages being easy to understand and mainstream languages for application development.

For front-end development, HTML5, CSS, JAVASCRIPT, and jQuery were used. Our company built this application on Intellij IDE, which is run on all mainstream Operating Systems. We used the Apache web server for local hosting.

The database used for data storage and retrieval was MySQL because it is free, open source, lightweight, simple to use, and to customize (Oracle, n.d.).

**6.2. Registration**

A user must register as either a client or a handyman. After registering as a handyman, to fully activate his account, the handyman should visit our office and fulfill the following requirements:

* Provide CNIC’s copies and get them verified with the original CNIC
* Select atleast of of the handyman’s service category mentioned in our application (e.g. Plumbing, Fixing bulb, etc)
* State his work experience and current shop he’s working in, if any

. Then he receives a confirmation email and a call stating that he has been registered.

**6.3. Book Handyman Process**

In order to search for and book the handyman, the client must choose at least one of the service categories provided by the app. The application shows all the available handymen in proximity. The algorithm used to perform the search functions work by the following criteria:

* It obtains the coordinates of the user by accessing their location when they allow access (similar to Google Maps)
* It shows handymen available (the proximity extends according to the estimated prices)

Moreover, the user may select the Handyman on High Priority status. When a user requires a handyman for a job, if they have selected some person in their High Priority status, if they are available, the user receives a notification if they want to hire them for that job.

**6.4. Rate Handyman Process**

The rating is important to handymen as it reflects the quality of service provided by them. After they complete their job, the clients are prompted to rate the handyman out of 5. The average is calculated from all the ratings the handyman received, extracted from the database.

When the user searches for the handymen for their required jobs, the ratings along with a handyman's name is displayed.

**6.5. Administration Management Portal**

This portal is for the employees to feed new handyman’s information into the application’s database, manage and alter estimated fares for the jobs, and add new or delete existing handymen jobs.

**6.6. Note on Simplicity and Effectiveness**

The user interface of the application is simple and uncomplicated for both clients and handymen, especially since many people are already familiar with applications that deliver products and services at doorstep,

The application uses Google Live map to monitor the position of handymen rather than creating its own live map, since Google Live map is both accurate and easy to add.

Furthermore, the system allows the process of booking a handyman easier than trying to find them by physically venturing the market, or calling an individual handyman. It minimizes the case of unavailability of a specific handyman by showing us the alternatives.

As the estimated fares of the services are monitored and controlled by the administrators of the application, the user is unlikely to be charged unfairly.

Charges <= Estimated Charges + Rs. 400

**Chapter 7**

**Conclusion**

This research led to the providing of handyman services. The busy work and family lives of individuals led to a higher demand about small jobs such as plumbers, electricians, technicians. According to the research it was found that 24.5% of the people used handyman sites in order to obtain a handyman. Our new method would address the weaknesses of the existing platforms.

This platform would give them the details of the handyman in the area they live. Current platforms do not provide trustable services which the people want. This led to the Handyman application to make the handyman services available and a lot smoother than before.

This platform would enable the people to trust the handyman services as there would be a rating system and the work history. This application is not only simple and easy to use but also reasonable for on-request services. It gives its users details of the handyman closest to the user, best price offered, and the rating score, making it more reasonable and effective as compared with the current platforms. Henceforth this application is of immense significance to all the users. the demand in this sector is quite high.

**Recommendations**

The service provided by this application is crucial to the handymen. it would make it easier for them to get the job that they are currently seeking. It helps to build the trust of the customers by looking at the rating and the work history of the handymen.

**Suggestions**

In order to expand the proposed plan, the following measures can be taken in future.

1. in order to increase the targeted audience and the revenue, support of other languages can be undertaken.

2. A premium feature with no ads can be implemented which would generate more revenue.

3. Easy payment methods can be provided to help users and workers

**References**

1. TechTarget, 2009: "Location-based service (LBS) definition," [Online]. Available: <http://searchnetworking.techtarget.com/definition/location-based-service-LBS>.
2. SIG, B., 2015: "Welcome to Bluetooth Technology 101," [Online]. Available: <http://www.bluetooth.com/Pages/Fast-Facts.aspx>.
3. Nasimoya, E., 2006: "Data Analysis, Interpretation and Presentation," [Online]. Available: <http://dspace.nwu.ac.za/bitstream/handle/10394/12269/Vosloo_JJ_Chapter_6.pdf?sequence=7>.
4. Object Management Group, 2015: "OMG Unified Modeling Language. 88Solutions."
5. Oracle, n.d.: "MYSQL from ORACLE," [Online]. Available: <http://www.oracle.com/us/products/mysql/overview/index.html>.
6. EGNOS, n.d.: "Location-based services (LBS): Mobile applications," [Online]. Available: <http://www.egnos-portal.eu/discover-egnos/about-egnos/case-studies/location-based-services-lbs-mobile-applications>.
7. M. M. Thiga et al., 2013: "An SMS and USSD Model for Location-based Mobile Advertising," *International Journal of Computer Science & Engineering Technology (IJCSET)*, vol. 4, no. 7, pp. 1070-1082.
8. Azene, F. T., 2014: "Location Based Services for low-end mobile phone," [Online]. Available: <https://www.itc.nl/library/papers_2014/msc/gfm/azene.pdf>**.Top of Form**

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