

Cloud-Based Essential Home Services Aggregator: Maintenance services made easy and affordable

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Abstract – Cloud-based Home services aggregator aims to provide the much needed and essential everyday services to the consumers in an easy and affordable manner. This proposed approach basically brings technology to the doorsteps of both the employee and the employer and helps them connect in a never before manner. The importance and impact of this paper is clearly visible in the present and pressing times of the Covid epidemic. This proposed approach demonstrates a workflow model that can function irrespective of the epidemic conditions and at the same time minimize the risk of virus infection by reducing people to people contact. Despite the reduction in contact the work quality is not affected. Tough times such as an epidemic call on for these services as essential and important much more than ever. Through this proposed approach we bring a common platform to those who provide the services and those who need it. The scope of the provided services ranges from basic home cleaning, car wash, laundry to much more. The proposed approach also aims to bring to platform the large - feature phone using - Indian workforce. The limited capabilities of the existing infrastructure hinder this section of workforce from connecting to better work opportunities. A potentially large number of footsteps on the side may cause it to render slowly.

Index Terms – Cloud Services, Cloud applications, home help, maintenance services, application design.

I. INTRODUCTION

The rise of Covid-19 Pandemic in the year 2020 has surely turned the way of approach towards one's work. People are finding it difficult to balance their everyday tasks and their work specially during this heavily assiduous lockdown period. The household works have been a major concern of people due to

24/7 work from home schedule. [1] [2] To help solve this problem, our team has come up with a proposed approach called *MaidItEasy* which focuses on providing household services at a cheaper rate with customer's satisfaction and convenience. [3] [4] [5] We implement the proposed approach in the form of android application made using android SDK toolkit with firebase as its backend. Let us look at the how our proposed approach addresses the following issues. Here consumer is the person asking for a service and the provider is the person providing the service. Our work brings them together in a common platform. Firstly, we are making the process of finding and providing work almost contactless by making use of modern-day communication technology. By making use of internet, we are thus preventing the spread of the covid virus. This ensures a safer work procedure at both the consumer and provider end.

Next, we have seen how severe job losses have occurred during the Covid times. To counter this we present our proposed approach which uses new age communication technology to keep people connected and the jobs flowing. Our work also provides a new platform to find work for people far removed from the domain of technology. This helps a large workforce to still remain integrated in their work cycle. Lastly using an easy-to-use interface and almost everywhere prevalent could technology we bring a world of opportunities to the doorstep of both the consumer and provider. [6] [7] Since there has been shortage of employment due to the pandemic, our proposed approach hopes to help few unemployed individuals to get an alternate work opportunity for considerable wages. We plan to implement the proposed approach in the cloud to provide 24/7 service to the customers. This would enable us to handle the heavy processing and easily maintain the database in the cloud.

The workflow of the proposed approach is as follows. The service providers first register themselves in the platform. They provide the necessary documents to authenticate themselves hence regulating the service providers and increasing safety and quality. On the other hand, the users may also register themselves with the app. They go through the stream lined process of selecting their required service. A user can set the time and date, monitor the arrival time of the maid. Credentials about the housekeeper will be provided like name, current address, contact details, Aadhaar info, previous experience. [8] [9] As the service selection and time is done, you will be redirected to payment where you can choose the type of payment as per your convenience. Once the payment is successfully done and booking is confirmed, you just sit back and wait for the service to arrive at your doorstep. Once here, you can choose to provide more detailed service requirements as per your need. Once the work is finished, you can review the service and tweak service until you are satisfied.

II. LITERATURE SURVEY

Service quality, satisfaction of the customer and customer value are most important concerns which also includes personal care. According to Sujit Bansal, Irene Governor (2016) Satisfaction of customer is the most important part in Marketing activity. "Satisfaction is the consumer accomplishment response. It's just a judgement that a product or service feature, or he product or service itself, provides a measure able level of consumption – related fulfillment." [10] [11] [12] As we go ahead to a time deficient world, where woman hold the burden on their shoulders of many responsibilities, the idea of a maid booking is perfect idea for them to have some free time. According to research done by Teddy Montoro, providing cleaning services at door is considered as one of the best opportunities to people. MaidItEasy is a start-up similar to

Urban-Clap, which aims to do approx. 60 orders per month. We can say that the quality providing household services at the doorsteps is the best opportunity to both Consumers and the Employees.

III. OBJECTIVES

- To design a service rendering website/application to list home service providers and connecting them to potential customers
- To provide a hassle-free and smooth self-listing functionality to service providers on the platform.
- To allow customers to join the platform and enjoy the services provided using a safe and secure registered login.
- To protect the data, transactions and other user information from malicious activities and hence provide a safe and secure work proposed approach environment.
- To provide safe and high-quality customer services through easy seller to customer one-to-one contact and relationship.
- To enable more people find better job opportunity and business environment.
- To empower the lacking technology deficient workforce.

IV. SCOPE OF THE PROPOSED APPROACH

The proposed approach intends to cover a large variety of services and has capabilities to add new services as they come, hence diversifying the large scope of the proposed approach. For beginners, the scope inculcates the basic services like home cleaning, laundry, car wash etc. Other services include AC cleaning, painting jobs, etc. We also intend to include technical services like electrical, plumbing, mechanic etc. As no of platform occupants increase, we aim to add new regions to the domain hence increasing the reach of the services. The extended scope of the proposed approach requires heavy storage and processing resources. This however will largely be handled in the backend in a cloud-based model.

V. METHODOLOGY

Tools we have used

For the app development we have used Android SDK (Software Development Kit) and Android studio. Android SDK is provided by google for Android Studio. The Android SDK is a collection of software development tools and libraries required to develop Android applications. These tools are widely used in mobile app development and are the go-to for effective app development. Since we need a back-end to the app as well, we have chosen Firebase for this purpose. Firebase is a software development platform created originally by Firebase Inc. which was later acquired by Google in 2014. Firebase was initially envisioned as a real-time database, however it now has 18 services and dedicated APIs. Firebase serves as a Backend-as-a-Service solution and is widely used for mobile and web-based applications. This includes services for building, testing, and managing apps. Firebase handles the data in the backend and provides real-time functionalities.

Android Studio

Android Studio is an IDE (Integrated Development Environment) for android application development. An IDE provides a closed-up environment with all the tools you need in software development like editing, debugging etc. Android studio is backed by google and is based on IntelliJ software. Mainly Java programming language is used to build android apps. It supports a large variety of display devices and screen sizes like android smartphones, Tablets, Smart TVs, and Wearable devices. For logic base coding we do code in a .java file and for design base coding we do coding in a .xml file android studio also has a design drag and drop side of XML (Extensible Markup Language) where we can design the app directly by dragging the item and dropping it on the app screen. To see how the app would look like on devices in real-time, android studio provides an emulator which is also known as Android Virtual Device (AVD Manager). The AVD manager provides us the functionality of virtualizing many of the devices that we may want to deploy our proposed approaches on. Some of these devices are Android phones, tablets, Android TV etc. This lets developers analyze pre-deployment behavior of the application before actually deploying the proposed approach in real world.

Firestore

Firestore is used in the development of mobile and web applications. In firestore, we can store our database and push that database into the firestore real-time module which can show the item or database changing in real-time. Firestore provides the following functionalities that come very handy:

- Analytics
- Authentication
- Cloud Messaging
- Cloud Storage
- Realtime database.

Since our proposed approach mainly prioritizes on providing household services to the customers, this idea will surely expand to a huge extent as the work in the future will be in extensive amount. This will help many unemployed individuals earn their daily wages profiting themselves and our organization help expand to various cities in future. So, in general, the customers will be at ease to use MaidItEasy at considerable prizes and profiting our team to enhance and expand the business to a larger extent.

VI. CONCLUSION

The idea implementation and hours of brainstorming has resulted into a proposed approach which brings together the customers and those providing the essential home services under one platform. Cloud computing has provided our proposed approach the necessary edge, hence providing faster, reliable and readily available functionality. A user can set the time and date, monitor the arrival time of the maid. Credentials about the housekeeper will be provided like name, current Address, Contact details, Aadhaar info, Previous experience. As the service selection and time is done, you will be redirected to payment where you can choose the type of payment as per your convenience. Once the payment is successfully done and booking is confirmed, you just sit back and wait for the service to arrive at your doorstep. Once here, you can choose to provide more detailed service requirements as per your need.

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